

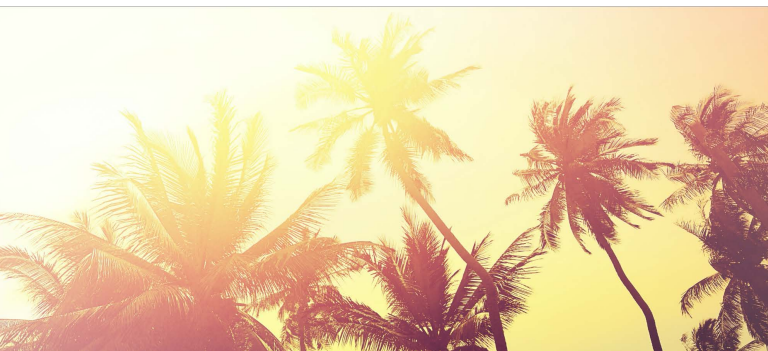


MMM2020

Virtual Conference

**65th Annual Conference on
Magnetism and Magnetic Materials**

PROGRAM



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Session T1

**TUTORIAL: NEUTRON AND X-RAY TECHNIQUES TO
STUDY MAGNETISM**

Brian Kirby, Chair

NIST, National Institute of Standards and Technology, Gaithersburg,
MD, US, govt, Gaithersburg, MD, United States

9:30

- T1-01. Neutron and X-Ray Techniques for Probing Magnetism. (Invited)** *S.G. te Velthuis¹ 1. Materials Science Division, Argonne National Laboratory, Lemont, IL, United States*

10:20

- T1-02. Illuminating the Invisible: X-Rays as Probes for Time-Resolved Magnetic Imaging. (Invited)** *S. Wintz¹ 1. Max-Planck-Institut für Intelligente Systeme, Stuttgart, Germany*

11:10

- T1-03. Oxide Interfaces Studied by Polarized Neutron Reflectometry. (Invited)** *E. Guo¹ 1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

Session A1

3D MAGNETIC STRUCTURES

Maria Jose Martinez-Perez, Chair
University of Zaragoza, Zaragoza, Spain

- A1-01. Curvature-Driven Chiral Effects in Nanomagnetism. (Invited)** *O. Volkov¹ 1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*

- A1-02. Creating and Interfacing Chiral Spin Textures Using 3D Geometries. (Invited)** *D. Sanz-Hernandez^{1,2}, A. Hierro-Rodriguez³, C. Donnelly², J. Pablo Navarro⁴, A. Sorrentino⁵, E. Pereiro⁵, C. Magen^{4,6}, S. McVitie³, J. de Teresa^{4,6}, S. Ferrer⁵, P. Fischer^{7,8} and A. Fernandez-Pacheco^{2,3} 1. Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, Palaiseau, France; 2. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 3. SUPA, School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom; 4. Laboratoria de Microscopias Avanzadas, Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Zaragoza, Spain; 5. ALBA Synchrotron, Cerdanyola del Vallès, Spain; 6. Instituto de Ciencia de Materiales de Aragón, Universidad de Zaragoza-CSIC, Zaragoza, Spain; 7. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 8. Physics Department, University of California Santa Cruz, Santa Cruz, CA, United States*

- A1-03. Control of Vortex Structures in Individual Cylindrical Magnetic Nanowires by Simultaneous Action of Applied Magnetic Field and an Electric Current.** *J. Fernandez-Roldan*^{1,2}, *R. Pérez del Real*², *C. Bran*², *M. Vazquez*² and *O. Chubykalo-Fesenko*² *1. Universidad de Oviedo, Oviedo, Spain; 2. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain*
- A1-04. The Dynamics of Composite Tube-Like Domain Walls.** *X. Chen*¹, *T.J. Hayward*², *W. Liu*¹ and *M.T. Bryan*¹ *1. Electronic Engineering, Royal Holloway University of London, Egham, United Kingdom; 2. Materials Science and Engineering, The University of Sheffield, Sheffield, United Kingdom*
- A1-05. Magnetostatics-Induced Symmetry Breaking Effects in Curvilinear Shells.** *D. Sheka*¹, *O. Pylypovskyi*², *P. Landeros*^{3,4}, *A. Kákay*² and *D. Makarov*² *1. Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 2. Helmholtz-Zentrum Dresden-Rossendorf e.V., Dresden, Germany; 3. Universidad Tecnica Federico Santa Maria Departamento de Fisica, Valparaiso, Chile; 4. Center for the Development of Nanoscience and Nanotechnology, Santiago, Chile*
- A1-06. Ferromagnetic Liquid Droplets. (Invited)** *P. Fischer*^{1,2}, *X. Liu*^{3,1}, *N. Kent*^{1,2}, *A. Ceballos*⁴, *R. Streubel*¹, *Y. Jiang*¹, *Y. Chai*¹, *P. Kim*¹, *J. Forth*¹, *F. Hellman*^{1,4}, *S. Shi*³, *D. Wang*³, *B. Helms*¹, *P. Ashby*¹ and *T. Russell*^{1,5} *1. E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 2. University of California Santa Cruz, Santa Cruz, CA, United States; 3. Beijing University of Chemical Technology, Beijing, China; 4. University of California Berkeley, Berkeley, CA, United States; 5. University of Massachusetts Amherst, Amherst, MA, United States*
- A1-07. Nickel Nanotubes With low Resistivity and Coherent Magnetization Dynamics for 3D Spintronics and Magnonics Prepared by Atomic Layer Deposition.** *D. Grundler*¹, *M. Giordano*¹, *K. Baumgaertl*¹, *S. Escobar-Steinval*², *J. Gay*¹, *M. Vuichard*¹ and *A. Fontcuberta-Morrà*² *1. IMX-LMGN, Ecole Polytechnique Federale de Lausanne Faculte des Sciences et Techniques de l'Ingenieur, Lausanne, Switzerland; 2. IMX-LMSC, Ecole Polytechnique Federale de Lausanne Faculte des Sciences et Techniques de l'Ingenieur, Lausanne, Switzerland*
- A1-08. Multimaterial and Flexible 3D Printed Magnets With sub-Millimeter Resolution.** *D.K. Patel*¹, *C. Velez*¹, *Z. Fortune*² and *S. Bergbreiter*¹ *1. Mechanical Engineering, Carnegie Mellon University, Pittsburgh, PA, United States; 2. Mechanical Engineering, University of Pittsburgh, Pittsburgh, PA, United States*
- A1-09. Advanced Fabrication and Magnetometry of Nanostructures With Complex 3D Geometries.** *L. Skoric*¹, *D. Sanz-Hernandez*³, *C. Donnelly*¹, *F. Meng*¹ and *A. Fernandez-Pacheco*² *1. Physics, University of Cambridge, Cambridge, United Kingdom; 2. School of Physics & Astronomy, University of Glasgow, Glasgow, United Kingdom; 3. UMPy CNRS-Thales, Univ. Paris-Saclay, Palaiseau, France*

- A1-10. Controlling Magnetic Properties of 3D-Printed Magnetic Elastomer Structures via Fused Deposition Modeling.** T. Calascione¹, N.A. Fischer¹, T. Lee¹, H. Thatcher¹ and B. Nelson-Cheeseman¹ *1. Mechanical Engineering, University of Saint Thomas, Saint Paul, MN, United States*

WEDNESDAY
MORNING
12:00

LIVE Q&A 1

Session A2
FRUSTRATED MAGNETIC SYSTEMS

Shalabh Gupta, Chair
Ames Laboratory, Ames, IA, United States

- A2-01. High Magnetic Field Induced Dynamics in the Frustrated Quantum Spin Chain Linarite. (Invited)** L. Heinze¹, K.C. Rule², M. Le³, S. Nishimoto^{4,5}, S. Drechsler⁵, U. Roessler⁵, R. Mole², A. Wolter⁴ and S. Suellow¹ *1. Institute for Condensed Matter Physics, TU Braunschweig, Braunschweig, Germany; 2. Australian Centre for Neutron Scattering, Australian Nuclear Science and Technology Organisation - Lucas Heights Campus, Kirrawee, NSW, Australia; 3. Rutherford Appleton Laboratory, Didcot, United Kingdom; 4. Leibniz Institute for Solid State and Materials Research, IFW Dresden, Dresden, Germany; 5. Institute for Solid State Physics, Technische Universitat Dresden, Dresden, Germany*
- A2-02. Withdrawn**
- A2-03. THz Magneto-Optical Investigation of Quadrupolar Spin-Lattice Effects in Magnetically Frustrated Tb₂Ti₂O₇.** Y. Alexanian¹, K. Amelin², U. Nagel², T. Rößm², E. Constable³, C. Decorse⁴, Z. Wang^{5,6}, J. Debray¹, V. Simonet¹, J. Robert¹, R. Ballou¹ and S. De Brion¹ *1. Institut NEEL, CNRS-Université Grenoble Alpes, Grenoble, France; 2. Keemilise ja Bioloogilise Fuusika Instituut, Tallinn, Estonia; 3. Technische Universität Wien Institut für Festkörperphysik, Wien, Austria; 4. Institut de Chimie Moleculaire et des Matériaux d'Orsay, Université Paris-Sud, Orsay, France; 5. Institut für Strahlenphysik, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 6. Universität zu Köln II Physikalisches Institut, Köln, Germany*
- A2-04. Critical Exponents and Simulation Methods of Frustrated Spin Systems.** D. Kapitan¹, A. Rybin¹, P. Andriushchenko², E. Vasiliev¹, K. Nefedev¹ and V.Y. Kapitan¹ *1. Dal'nevostocnyj federal'nyj universitet, Vladivostok, Russian Federation; 2. Nacional'nyj issledovatel'skij universitet ITMO, Sankt-Peterburg, Russian Federation*
- A2-05. Micromagnetic Route Towards the Coulomb Phase Physics of Artificial Frustrated Magnets.** V. Schanilec^{1,2}, O. Brunn^{1,3}, Y. Perrin¹, V. Uhler², B. Canals¹ and N. Rougemaille¹ *1. CNRS - Institut NEEL, Grenoble, France; 2. Stredoevropsky technologicky institut, Brno, Czechia; 3. Inst. Sci. Instruments, Brno, Czechia*

- A2-06. Multipolar Degree of Freedom and Metamagnetism of the Quantum Spin Ice Candidate $\text{Pr}_2\text{Zr}_2\text{O}_7$.** *N. Tang*¹, *A. Sakai*², *K. Kimura*⁵, *M. Fu*¹, *S. Nakamura*⁴, *Y. Matsumoto*⁶, *T. Sakakibara*¹ and *S. Nakatsuji*^{2,3} *1. University of Tokyo, ISSP, Chiba, Japan; 2. Department of Physics, University of Tokyo, Graduate School of Science, Tokyo, Japan; 3. Johns Hopkins University, Baltimore, MD, United States; 4. Department of physics, Nagoya Institute of Technology, Aichi, Japan; 5. Department of advanced materials, University of Tokyo, Graduate school of frontier science, Chiba, Japan; 6. Max-Planck-Institute for solid state research, Stuttgart, Germany*
- A2-07. Quantum Spin Nematic Liquid in the $S=1$ Antiferromagnetic Chain With the Biquadratic Interaction.** *T. Sakai*^{1,2}
1. University of Hyogo, Kamigori, Japan; 2. National Institutes for Quantum and Radiological Science and Technology (Spring-8), Sayo, Japan
- A2-08. Bypassing Dynamical Freezing and Accessing Low-Energy Microstates in Artificial Kagome Ice.** *V. Schánilec*^{1,2}, *B. Canals*¹, *V. Uhler*², *L. Flajšman*², *J. Sadilek*², *T. Sikola*^{2,3} and *N. Rougemaille*¹ *1. CNRS - Institut NEEL, Grenoble, France, Grenoble, France; 2. CEITEC BUT, Brno, Czechia, Brno, Czechia; 3. Brno University of Technology, Institute of Physical Engineering, Brno, Czechia, Brno, Czechia*
- A2-09. New Approaches to the Nearest Neighbour Ising Antiferromagnet on the Kagome Lattice.** *J. Colbois*¹, *K. Hofhuis*^{2,3}, *Z. Luo*^{2,3}, *X. Wang*^{2,3}, *A. Hrabec*^{2,3}, *L. Heyderman*^{2,3} and *F. Mila*¹ *1. Institute of physics, Ecole polytechnique fédérale de Lausanne, 1015 Lausanne, Switzerland; 2. Laboratory for Mesoscopic Systems, Department of Materials, Eidgenössische Technische Hochschule Zurich, 8093 Zurich, Switzerland; 3. Laboratory for Multiscale Materials Experiments, Paul Scherrer Institut, 5232 Villigen PSI, Switzerland*
- A2-10. Nonequilibrium Quasistationary Spin Disordered State in the Kitaev-Heisenberg Magnet $\alpha\text{-RuCl}_3$.** *R.B. Versteeg*¹, *A. Chiochetta*², *F. Sekiguchi*¹, *R. Aldea*¹, *A. Sahasrabudhe*¹, *K. Budzinauskas*¹, *Z. Wang*¹, *V. Tsurkan*^{3,4}, *A. Loidl*³, *D. Khomskii*¹, *S. Diehl*² and *P.H. van Loosdrecht*¹ *1. Institute of Physics 2, Universitat zu Koln, Koln, Germany; 2. Institute for Theoretical Physics, Universitat zu Koln, Koln, Germany; 3. Experimental Physics V, Center for Electronic Correlations and Magnetism, Universitat Augsburg, Augsburg, Germany; 4. Institute of Applied Physics Moldova, Chisinau, Moldova (the Republic of)*
- A2-11. Incipient Antiferromagnetic Order in Metallic Ti_4MnBi_2 Containing Linear Mn Chains of Spin $S = 1/2$.** *A. Pandey*¹
1. School of Physics, University of the Witwatersrand, Johannesburg-Braamfontein, South Africa
- A2-12. Withdrawn**

Session A3

**MAGNETIZATION DYNAMICS AND DAMPING I:
DAMPING AND FERROMAGNETIC RESONANCE**

Andreas Ney, Chair
Johannes Kepler Universitat Linz, Linz, Austria

- A3-01. Conductivity-Like Gilbert Damping due to Intraband Scattering in Epitaxial Iron. (Invited)** S. Emori¹ 1. Virginia Polytechnic Institute and State University, Blacksburg, VA, United States
- A3-02. Ultra-low Magnetic Damping in Epitaxial $\text{Li}_{0.5}\text{Fe}_{2.5}\text{O}_4$ Thin Films.** X. Zheng¹, L.J. Riddiford¹, J. Wisser¹, S. Emori² and Y. Suzuki¹ 1. Applied Physics, Stanford University, Stanford, CA, United States; 2. Physics, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States
- A3-03. Low Damping and Linewidth in Magnetostrictive Epitaxial FeGa Thin Films Using Ferromagnetic Resonance.** A. Sapkota¹, S. Budhathoki¹, B. Nepal¹, K. Law¹, S. Ranjit¹, S. KC¹, A.J. Hauser¹, C. Mewes¹ and T. Mewes¹ 1. Physics and Astronomy, The University of Alabama System, Tuscaloosa, AL, United States
- A3-04. Magnetic Damping in Epitaxial Fe Alloyed With Low-Atomic-Number Elements.** D.A. Smith¹, A. Rai², Y. Lim¹, T. Hartnett³, A. Sapkota², A. Srivastava², C. Mewes², Z. Jiang¹, M. Clavel¹, M. Hudait¹, D. Viehland¹, J. Heremans¹, P. Balachandran³, T. Mewes² and S. Emori¹ 1. Virginia Polytechnic Institute and State University, Blacksburg, VA, United States; 2. University of Alabama, Tuscaloosa, AL, United States; 3. University of Virginia, Charlottesville, VA, United States
- A3-05. Two-Magnon Scattering in Polycrystalline Fe and FeV Alloy Thin Films.** S. Wu¹, D.A. Smith¹, A. Rai², M. Clavel³, M. Hudait³, T. Mewes² and S. Emori¹ 1. Department of Physics, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States; 2. Department of Physics and Astronomy, The University of Alabama, Tuscaloosa, AL, United States; 3. Department of Electrical and Computer Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States
- A3-06. Higher-Order Contribution to Perpendicular Anisotropy and Interfacial Damping of Co/Ni Multilayers.** A. Rai¹, A. Sapkota¹, A. Pokhrel¹, M.P. Li², M.D. Graef², C. Mewes¹, V. Sokalski² and T. Mewes¹ 1. Physics and Astronomy, The University of Alabama, Tuscaloosa, AL, United States; 2. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA, United States

- A3-07. Perpendicular Anisotropy and Damping of MgO/Fe/Au Trilayers With Broken Inversion Symmetry.** N. Kamiya¹, T. Kato², D. Oshima² and S. Iwata² *1. Department of Electronics, Nagoya University, Nagoya, Japan; 2. Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan*
- A3-08. Experimental Realization of Linearly Polarized x-ray Detected Ferromagnetic Resonance.** C. Klewe¹, S. Emori², Q. Li³, M. Yang³, B. Gray⁵, H. Jeon⁴, B.M. Howe⁵, Y. Suzuki^{6,7}, Z.Q. Qiu³, P. Shafer¹ and E. Arenholz⁸ *1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 2. Physics, Virginia Tech, Blacksburg, VA, United States; 3. Physics, University of California Berkeley, Berkeley, CA, United States; 4. Sensors Directorate, Air Force Research Lab, Wright Patterson Air Force Base, Dayton, OH, United States; 5. Materials and Manufacturing Directorate, Air Force Research Lab, Wright Patterson Air Force Base, Dayton, OH, United States; 6. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA, United States; 7. Applied Physics, Stanford University, Stanford, CA, United States; 8. Cornell High Energy Synchrotron Source, Cornell University, Ithaca, NY, United States*
- A3-09. Structural and Magnetic Properties of Co_{1.5}Ti_{0.5}FeAl Heusler Alloy Epitaxial Thin Films.** S. Budhathoki¹, A. Rai¹, K. Law¹, R. Nahar¹, A. Stewart¹, S. Ranjit¹, S. KC¹, P. LeClair¹, C. Mewes¹, T. Mewes¹ and A.J. Hauser¹ *1. Department of Physics and Astronomy, The University of Alabama, Tuscaloosa, AL, United States*
- A3-10. A Systematic Ferromagnetic Resonance Study of Deposition Conditions in NiFe Thin Films for Shielding Applications.** M.R. McMaster¹, W. Hendren¹, J.N. Scott¹ and R. Bowman¹ *1. Queen's University Belfast, Belfast, United Kingdom*
- A3-11. High-Temperature Ferromagnetic Resonance in FePt Thin Films.** C. Liu¹, K. Srinivasan², A. Ajan², E. McCollum¹ and M. Wu¹ *1. Physics department, Colorado State University, Fort Collins, CO, United States; 2. Western Digital Corp, San Jose, CA, United States*
- A3-12. Two-Magnon Frequency Pulling Effect in Ferromagnetic Resonance.** W. Peria², H. Yu¹, S. Lee¹, I. Takeuchi¹ and P.A. Crowell² *1. Department of Materials Science and Engineering, University of Maryland at College Park, College Park, MD, United States; 2. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN, United States*
- A3-13. The Effect of Temporal Evolution of Magnetic Anisotropy Parameters on the Magnetization Precession in Ferromagnetic Films.** P. Gerevenkov¹, A.W. Rushforth², A. Kalashnikova¹ and N. Khokhlov¹ *1. Ioffe Institute, St. Petersburg, Russian Federation; 2. School of Physics and Astronomy, The University of Nottingham, Nottingham, United Kingdom*

Session A4
MAGNETO-ELASTIC AND MAGNETO-CALORIC
MATERIALS I

Radhika Barua, Co-Chair

Virginia Commonwealth University, Richmond, VA, United States

Suok-Min Na, Co-Chair

Naval Surface Warfare Center Carderock Division, West Bethesda,
MD, United States

- A4-01. Estimation of Magnetocaloric Effect and Critical Exponents in Fe Doped Mn_5Ge_3 Compound.** S. S¹, A. K¹, R. U D¹, A. Dzubinska², M. Reiffers³ and N. Ramamoorthi¹
1. Department of Physics, National Institute of Technology, Tiruchirappalli, Tiruchirappalli, India; 2. Center for Progressive Materials-Technology and Innovation Park, University of Pavol Jozef Šafárik, Kosice, Slovakia; 3. Faculty of Humanities and Natural Sciences, University of Presov, Presov, Slovakia
- A4-02. Effect of Magnetic Proximity on Magnetocaloric Properties of $Ni_{80}Fe_{20}/Ni_xCu_{1-x}/Co_{90}Fe_{10}$ Stacks.** M.A. Kuznetsov^{1,2}, I.Y. Pashenkin¹, N.I. Polushkin¹, M.V. Sapozhnikov¹ and A.A. Fraerman¹
1. Institut fiziki mikrostruktur Rossijskoj akademii nauk, Niznij Novgorod, Russian Federation; 2. Faculty of Physics, Lobachevsky State University of Nizhniy Novgorod, Nizhniy Novgorod, Russian Federation
- A4-03. The Antiferro to Ferrimagnetic Phase Transition in $Mn_2Sb_{1-x}Bi_x$ Compounds.** Q. Shen¹, I. Batashev¹, N.v. van Dijk¹ and E. Brück¹
1. Fundamental Aspects of Materials and Energy, Technische Universiteit Delft Faculteit Technische Natuurwetenschappen, Delft, Netherlands
- A4-04. Quasi-1D Magnetism in Lanthanide Calcium Oxyborates $Ca_4LnO(BO_3)_3$.** N. Kelly¹ and S. Dutton¹
1. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom
- A4-05. Fe Addition in six-Element Ferromagnetic Shape Memory Alloys: Paving the way Towards High-Temperature Magnetic Actuation.** J. Porro^{1,2}, A. Pérez-Checa^{3,1}, J.F. feuchtwanger⁴, P. Lazpita^{1,4}, T. Hansen⁵, C. Mondelli⁶, A. Sozinov⁷, J. Barandiarán⁴, K. Ullakko⁷ and V. Chernenko^{1,2}
1. Fundacion BCMaterials - Basque Center for Materials Applications and Nanostructures, Leioa, Spain; 2. Ikerbasque, Basque foundation for science, Bilbao, Spain; 3. TECNALIA, Basque Research and Technology Alliance (BRTA), Donostia-San Sebastián, Spain; 4. Universidad del Pais Vasco, Bilbao, Spain; 5. Institut Laue-Langevin, Grenoble, France; 6. CNR-IOM, Institut Laue-Langevin, Grenoble, France; 7. Material Physics Laboratory, LUT University, Lappeenranta, Finland
- A4-06. Magnetocaloric Effect in the $(Mn,Fe)_2(P,Si)$ System: From Bulk to Nano.** F. Zhang¹, X. You¹, N.v. van Dijk¹ and E. Brück¹
1. Faculty of Applied Sciences, Delft University of Technology, Delft, Netherlands

- A4-07. Calculating the Magnetocaloric Effect in Second-Order-Type Material by Micromagnetic Simulations.** *D. Ohmer*¹, *M. Yi*², *B. Xu*¹, *O. Gutfleisch*¹ and *M. Fries*¹
1. Materials Science, Technische Universität Darmstadt Materialwissenschaft, Darmstadt, Germany; 2. College of Aerospace Engineering, Nanjing University of Aeronautics & Astronautics, Nanjing, China
- A4-08. Phase Field Model for Ferromagnetic Domain Evolution During Martensitic Transformation of Heusler Alloys.** *D. Ohmer*¹, *M. Yi*², *B. Xu*¹ and *O. Gutfleisch*¹
1. Materials Science, Technische Universität Darmstadt Materialwissenschaft, Darmstadt, Germany; 2. College of Aerospace Engineering, Nanjing University of Aeronautics & Astronautics, Nanjing, China
- A4-09. Setting the Basis for the Interpretation of Temperature First Order Reversal Curve (TFORC) Distributions of Magnetocaloric Materials.** *L.M. Moreno-Ramírez*¹ and *V. Franco*¹
1. Condensed Matter Physics, Sevilla University, Sevilla, Spain
- A4-10. The Effect of Ionic Radii of the Rare-Earth Ion on the Magnetocaloric Effect of Rare-Earth Chromites.** *J. Shi*^{1,3} and *M. Jain*^{2,3}
1. Department of Materials Science and Engineering, University of Connecticut, Storrs, CT, United States; 2. Department of Physics, University of Connecticut, Storrs, CT, United States; 3. Institute of Materials Science, University of Connecticut, Storrs, CT, United States
- A4-11. Magnon Polarons Induced by a Magnetic Field Gradient.** *N. Vidal-Silva*¹, *E. Aguilera*², *A. Roldán-Molina*³, *R. Duine*⁴ and *A. Nunez*²
1. Universidad de La Frontera, Temuco, Chile; 2. Universidad de Chile Facultad de Ciencias Físicas y Matemáticas, Santiago, Chile; 3. Universidad de Aysen, Coyhaique, Chile; 4. Institute for Theoretical Physics, Universiteit Utrecht, Utrecht, Netherlands
- A4-12. Effect of Particle Permeability on Macroscopic Behavior of Magnetorheological Elastomers.** *W.M. Kiarie*¹ and *D.C. Jiles*^{2,1}
1. Materials Science and Engineering, Iowa State University, Ames, IA, United States; 2. Electrical and Computer Engineering, Iowa State University, Ames, IA, United States
- A4-13. Multiscale Modeling of Magnetorheological Elastomers With a Twist.** *D. Marchfeld*¹, *T. Dang*^{2,1}, *A.T. Clark*², *J. Li*^{2,3}, *X. Cheng*² and *K. Buchanan*¹
1. Physics, Colorado State University, Fort Collins, CO, United States; 2. Physics, Bryn Mawr College, Bryn Mawr, PA, United States; 3. Physics, Fudan University, Shanghai, China
- A4-14. Strain Engineered Domain Structure and Their Relaxation in Perpendicularly Magnetized Co/Pt Deposited on Flexible Polyimide.** *E. Pandey*¹, *B.B. Singh*¹, *P. Sharangi*¹ and *S. Bedanta*¹
1. School of Physical Sciences, National Institute of Science Education and Research (NISER), Bhubaneswar, Bhubaneswar, India

- A4-15. Magneto-Mechanical Response of Supracolloidal, Magnetic, Polymer-Like Structures.** *D. Mostarac*¹, *P.A. Sánchez*^{1,2} and *S. Kantorovich*^{1,2} *1. Computational and Soft Matter Physics, Universitat Wien, Wien, Austria; 2. Ural'skij federal'nyj universitet imeni pervogo Prezidenta Rossii B N El'cina, Ekaterinburg, Russian Federation*
- A4-16. Theoretical Modelling of Hybrid Magnetic Elastomers.** *P.A. Sánchez*^{1,2}, *O. Stolbov*³ and *Y. Raikher*³ *1. Ural'skij federal'nyj universitet imeni pervogo Prezidenta Rossii B N El'cina, Ekaterinburg, Russian Federation; 2. Wolfgang Pauli Institute, Universitat Wien, Wien, Austria; 3. FGBUN Institut mehaniki sposnyh sred Ural'skogo otdelenia Rossijskoj akademii nauk, Perm, Russian Federation*
- A4-17. Tuning the Magnetocaloric Properties in (Gd,Tb)₆(Fe,Mn)Bi₂ Intermetallics.** *A. Oleaga*¹, *A. Herrero*¹, *A. Salazar*¹, *A.V. Garshev*², *V.O. Yapaskurt*³ and *A.V. Morozkin*² *1. Fisica Aplicada I, University of the Basque Country UPV/EHU, Bilbao, Spain; 2. M.N. Department of Chemistry, Moscow State University, Moscow, Russian Federation; 3. Department of Petrology, Moscow State University, Moscow, Russian Federation*
- A4-18. Structure, Magnetocaloric Properties and Critical Behavior in Novel Intermetallic Materials R₃CoNi (R = Tb, Dy, Ho, Er, Tm, Lu).** *A. Herrero*¹, *A. Oleaga*¹, *A. Provino*^{2,3}, *I.R. Aseguinolaza*¹, *A. Salazar*¹ and *P. Manfrinetti*^{2,4} *1. Fisica Aplicada I, University of the Basque Country UPV/EHU, Bilbao, Spain; 2. Department of Chemistry, University of Genova, Genova, Italy; 3. Rutgers The State University of New Jersey, New Brunswick, NJ, United States; 4. Institute SPIN-CNR, Genova, Italy*

WEDNESDAY
MORNING
12:00

LIVE Q&A 1

Session A5 NEUROMORPHIC COMPUTING WITH DOMAIN WALLS AND CHIRAL SPIN TEXTURES

Seonghoon Woo, Chair
IBM T. J. Watson Research Center, Yorktown Heights, NY,
United States

- A5-01. Modeling Biological Behavior in Domain Wall-Magnetic Tunnel Junction Artificial Neurons and Synapses for Energy-Efficient Neuromorphic Computing. (Invited)** *J.C. Incorvia*², *J.S. Friedman*³, *M.J. Marinella*¹, *O.G. Akinola*², *C. Cui*², *N. Hassan*³, *C.H. Bennett*¹, *X. Hu*³, *L. Jiang-Wei*³, *W.H. Brigner*³, *F. Garcia-Sanchez*⁴ and *M. Pasquale*⁵ *1. Sandia National Laboratories, Albuquerque, NM, United States; 2. Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX, United States; 3. Electrical and Computer Engineering, The University of Texas at Dallas, Richardson, TX, United States; 4. Universidad de Salamanca, Salamanca, Spain; 5. Istituto Nazionale di Ricerca Metrologica, Torino, Italy*

- A5-02. Online Training of Spiking Neural Networks Using Domain Wall Magnetic Tunnel Junction Synapses.** *O.G. Akinola¹, B. Mendawar¹, C.H. Bennett², X. Hu³, J.S. Friedman³, M.J. Marinella² and J.C. Incorvia¹* 1. *Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX, United States*; 2. *Sandia National Laboratories, Albuquerque, NM, United States*; 3. *Electrical and Computer Engineering, The University of Texas at Dallas, Richardson, TX, United States*
- A5-03. Purely Spintronic Multilayer Perceptron Enabled by Four-Terminal Domain Wall-Magnetic Tunnel Junction Neuron.** *N. Hassan¹, W.H. Brigner¹, C.H. Bennett², A. Velasquez³, X. Hu¹, O.G. Akinola⁴, F. Garcia-Sanchez⁵, M.J. Marinella², J.C. Incorvia⁴ and J.S. Friedman¹* 1. *Electrical & Computer Engineering, The University of Texas at Dallas, Richardson, TX, United States*; 2. *Sandia National Laboratories, Albuquerque, NM, United States*; 3. *Air Force Research Laboratory, Rome, NY, United States*; 4. *Electrical & Computer Engineering, The University of Texas at Austin, Austin, TX, United States*; 5. *Universidad de Salamanca, Salamanca, Spain*
- A5-04. Harnessing Stochastic Domain Wall Pinning for Machine Learning.** *M.O. Ellis¹, A. Welbourne², S.J. Kyle², T.J. Hayward², D. Allwood² and E. Vasilaki¹* 1. *Department of Computer Science, The University of Sheffield, Sheffield, United Kingdom*; 2. *Department of Material Science and Engineering, The University of Sheffield, Sheffield, United Kingdom*
- A5-05. Maximized Lateral Inhibition in Paired Magnetic Domain Wall Racetracks for Neuromorphic Computing.** *C. Cui¹, O.G. Akinola¹, N. Hassan², C.H. Bennett³, M.J. Marinella³, J.S. Friedman² and J.C. Incorvia¹* 1. *Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX, United States*; 2. *Electrical and Computer Engineering, The University of Texas at Dallas, Richardson, TX, United States*; 3. *Sandia National Laboratory, Albuquerque, NM, United States*
- A5-06. Linear Intrinsic Leaking in a Domain-Wall Magnetic Tunnel Junction Neuron.** *W.H. Brigner¹, N. Hassan¹, X. Hu¹, C.H. Bennett², F. Garcia-Sanchez^{3,4}, M.J. Marinella², J.C. Incorvia⁵ and J.S. Friedman¹* 1. *Electrical and Computer Engineering, University of Texas at Dallas, Richardson, TX, United States*; 2. *Sandia National Laboratories, Albuquerque, NM, United States*; 3. *Department of Applied Physics, University of Salamanca, Salamanca, Spain*; 4. *Istituto Nazionale di Ricerca Metrologica, Turin, Italy*; 5. *Electrical and Computer Engineering, University of Texas at Austin, Austin, TX, United States*
- A5-07. Magnetic Whirls for Unconventional Computing. (Invited)** *K. Everschor-Sitte¹* 1. *Institute of Physics, Johannes Gutenberg Universitat Mainz, Mainz, Germany*

Session B1
ARTIFICIAL SPIN ICE

Jose M. Porro, Chair
BCMaterials, Leioa, Spain

- B1-01. Tailoring Spin Wave Channels in a Reconfigurable Artificial Spin Ice. (Invited)** E. Iacocca¹, S. Gliga² and O. Heinonen³
1. Northumbria University, Newcastle upon Tyne, United Kingdom; 2. Paul Scherrer Institut, Villigen, Switzerland; 3. Argonne National Laboratory, Lemont, IL, United States
- B1-02. Switching Barriers in Artificial Square ice.** N. Leo¹, S. Koraltan², M. Pancaldi³, P. Villalba¹, C. Abert², C. Vogler², K. Hofhuis^{4,5}, F. Slanovc², F. Bruckner², P. Heistracher², M. Menniti¹, D. Suess² and P. Vavassori^{1,6}
1. CIC nanoGUNE, Donostia - San Sebastián, Spain; 2. Universitat Wien, Wien, Austria; 3. Stockholms Universitet, Stockholm, Sweden; 4. Paul Scherrer Institut, Villigen, Switzerland; 5. Eidgenössische Technische Hochschule Zurich, Zurich, Switzerland; 6. Ikerbasque, Bilbao, Spain
- B1-03. Role of Higher-Order Magnetostatic Interactions for the Directional Injection of Monopole Currents.**
E.Y. Vedmedenko¹ *1. Universitat Hamburg, Hamburg, Germany*
- B1-04. A Magnon Approach to Thermal Fluctuations in Ising-Like Mesospins.** S. Sløetjes¹, B. Hjörvarsson¹ and V. Kapaklis¹
1. Physics and Astronomy, Uppsala Universitet, Uppsala, Sweden
- B1-05. Long-Range Magnetic Ordering in Artificial Kagome Spin Ice.** K. Hofhuis^{1,2}, A. Hrabec^{1,2}, H. Arava^{1,2}, N. Leo^{2,3}, S.H. Skjærvø^{1,2}, Y. Huang⁴, R.V. Chopdekar⁵, S. Parchenko^{1,2}, A. Kleibert⁶, S. Koraltan⁷, C. Abert⁷, C. Vogler⁷, D. Suess⁷, P. Derlet^{8,1} and L. Heyderman^{1,2}
1. Department of Materials, ETH Zurich, Zurich, Switzerland; 2. Laboratory for Multiscale Materials Experiments, Paul Scherrer Institute, Villigen, Switzerland; 3. CIC nanoGUNE, San Sebastian, Spain; 4. Department of Materials Science and Engineering, University of California Berkeley, Berkeley, CA, United States; 5. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 6. Swiss Light Source, Paul Scherrer Institute, Villigen, Switzerland; 7. Christian Doppler Laboratory, Advanced Magnetic Sensing and Materials, University of Vienna, Wien, Austria; 8. Condensed Matter Theory Group, Paul Scherrer Institute, Villigen, Switzerland
- B1-06. The Formation of Complex Spin Textures in La_{0.7}Sr_{0.3}MnO₃ Artificial Spin Ice Arrays.** D.Y. Sasaki¹, R.V. Chopdekar², S. Retterer³, D.Y. Jiang⁴, J. Mason¹, M.S. Lee¹ and Y. Takamura¹
1. Department of Materials Science and Engineering, University of California Davis, Davis, CA, United States; 2. Advanced Light Source, E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 3. Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN, United States; 4. Department of Chemical Engineering, University of California Davis, Davis, CA, United States

B1-07. Withdrawn

B1-08. Ferromagnetic Antidot Arrays With Complex Geometries.

D. Navas¹, D.G. Trabada¹ and M. Vazquez¹ 1. Instituto de Ciencia de Materiales de Madrid (ICMM-CSIC), Madrid, Spain

B1-09. Magnetic Properties of Novel 3D Antidot Matrix Created by Stepwise Nanosphere Lithography. *B. Myint¹ and V. Ng¹*

1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore

B1-10. Magnetic Tunability of Permalloy Artificial Spin Ice Structures. *A. Talapatra¹, N. Singh² and A. Adeyeye^{1,3}*

1. Department of Electrical and Computer Engineering, National University of Singapore - Kent Ridge Campus, Singapore, Singapore; 2. Institute of Microelectronics, Singapore, Singapore; 3. Physics, Durham University, Durham, United Kingdom

B1-11. Tunability in the Dynamics of a Bicomponent Artificial Spin Ice. *S. Lendinez¹, M. Taghipour Kaffash¹ and M. Jungfleisch¹*

1. Department of Physics and Astronomy, University of Delaware, Newark, DE, United States

B1-12. Collective Magnetic Dynamics in Artificial Spin Ice Probed by AC Susceptibility. *M. Pohlit¹, G. Muscas¹, I. Chioar¹, H. Stopfel¹, A. Ciuciulkaite¹, E. Östman¹, S.D. Pappas¹, A. Stein², B. Hjörvarsson¹, P.E. Jönsson¹ and V. Kapaklis¹*

1. Physics and Astronomy (Material Physics), Uppsala University, Uppsala, Sweden; 2. Center of Functional Nanomaterials, Brookhaven National Laboratory, Upton, NY, United States

B1-13. FORC Investigations of Large-Scale NiFe Nano-Ellipses Arrays. *H. Brueckl¹, A. Shoshi¹, L. Breth¹, J. Fischbacher¹, T. Schrefl¹, M.J. Haslinger², T. Mitterramskogler², S. Schrittwieser³ and J. Schotter³*

1. Department for Integrated Sensor Systems, Donau-Universität Krems, Wiener Neustadt, Austria; 2. Profactor GmbH, Steyr-Gleink, Austria; 3. Austrian Institute of Technology GmbH, Wien, Austria

B1-14. Magnetization Reversal Studies of Building Blocks of Square Artificial Spin Ice Probed by 2-DEG Based Micro-Hall Magnetometry. *N. Keswani¹, Y. Nakajima², N. Chauhan², T. Ukai², H. Chakraborti³, K. Das Gupta³, T. Hanajiri², S. Kumar², Y. Ohno⁴, H. Ohno⁵ and P. Das¹*

1. Physics, Indian Institute of Technology Delhi, New Delhi, India; 2. Bio Nano Electronics Research Centre, Toyo University, Saitama, Kawagoe, Saitama, Japan; 3. Physics, Indian Institute of Technology Bombay, Mumbai, India; 4. Tsukuba Daigaku Daigakuin Suri Busshitsu Kagaku Kenkyuka, Tsukuba, Japan; 5. Tohoku Daigaku, Sendai, Japan

B1-15. Magnetic Charge Propagation Upon a 3D Artificial Spin-ice.

M.O. Hunt¹, A. May¹, M.D. Saccone², J. Askey¹, A. van den Berg¹ and S. Ladak¹ 1. School of Physics and Engineering, Cardiff University College of Physical Sciences and Engineering, Cardiff, United Kingdom; 2. Physics Department, University of California, Santa Cruz, Santa Cruz, CA, United States

Session B2
INTERDISCIPLINARY APPLICATIONS I

Michalis Charilaou, Co-Chair
University of Louisiana at Lafayette, Lafayette, LA, United States
Yuko Ichiyanagi, Co-Chair
Yokohama National University, Yokohama, Japan

- B2-01. Magnetic-Based Tactile Sensors for Dexterous Robotic Manipulation. (Invited)** *L. Jamone¹ 1. Queen Mary University of London, London, United Kingdom*
- B2-02. Storage and Retrieval of Microwave Pulses With Molecular Spin Ensembles. (Invited)** *C. Bonizzoni^{1,2}, A. Ghirri¹ and M. Affronte^{2,1} 1. Istituto Nanoscienze Consiglio Nazionale delle Ricerche Sede secondaria di Modena, Modena, Italy; 2. Physics, Informatics and Mathematics, Università di Modena e Reggio Emilia, Modena, Italy*
- B2-03. Inelastic Neutron Scattering Spectrum of a Cr₁₀ Molecular Ring Compound With Unusual $S = 9$ Ground State.** *J. Rubin^{1,6}, E. Bartolome², T. Guidi³, J. Bartolome^{1,7}, A. Arauzo^{1,7}, F. Sedona⁴, M. Rancan⁴, M. Sambì⁴, E. Garlatti⁵, S. Carretta⁵ and F. Bartolome^{1,7} 1. Instituto de Ciencia de Materiales de Aragón (CSIC-Universidad de Zaragoza), Zaragoza, Spain; 2. Escola Universitaria Salesiana de Sarria, Barcelona, Spain; 3. ISIS Facility, Rutherford Appleton Laboratory, Chilton, United Kingdom; 4. Dipartimento di Scienze Chimiche, Università di Padova, Padova, Italy; 5. Dipartimento di Scienze Matematiche, Fisiche e Informatiche, Università di Parma, Parma, Italy; 6. Dpto. Ciencia y Tecnología de Materiales y Fluidos, Universidad de Zaragoza, Zaragoza, Spain; 7. Dpto. de Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain*
- B2-04. Structure and Magnetism of FePc/Ag(110) Monolayer Phases Under Oxygen Dosing.** *E. Bartolome¹, J. Bartolome², F. Sedona³, J. Lobo-Checa², D. Forrer³, J. Herrero-Albillos⁴, M. Piantek^{2,5}, J. Herrero-Martin⁶, D. Betto⁷, E. Velez-Fort⁷, L.M. Garcia², J. Rubin², M. Panighel⁸, A. Mugarza^{9,10}, M. Sambì³ and F. Bartolome² 1. Escola Universitària Salesiana de Sarrià (EUSS), Barcelona, Spain; 2. ICMA, CSIC, Consejo Superior de Investigaciones Científicas, Zaragoza, Spain; 3. CNR-ICMATE, Department of Chemical Sciences, University of Padova, Padova, Italy; 4. Centro Universitario de la Defensa, Academia General Militar, Zaragoza, Spain; 5. Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Zaragoza, Spain; 6. ALBA Synchrotron, Barcelona, Spain; 7. ESRF, Grenoble, France; 8. Laboratorio TASC, CNR-IOM, Trieste, Italy; 9. Catalan Institute of Nanoscience and Nanotechnology, CSIC + BIST, Barcelona, Spain; 10. ICREA, Institutio Catalana de Recerca i Estudis Avancats, Barcelona, Spain*

- B2-05. Tuning the Magnetic Properties of Oleic Acid Coated Co Ferrite Nanoparticles by Varying the Surfactant Coverage: a Multiscale Numerical Approach.** *K.N. Trohidou¹, N. Ntallis¹ and M. Vasilakaki¹* *1. Institute of Nanoscience and Nanotechnology, Ethniko Kentro Ereunas Physikon Epistemon Demokritos, Athens, Greece*
- B2-06. Synthesis of Magneto-Responsive Micro Swimmers for Biomedical Applications.** *H.A. Alshammari¹, N. Gunduz Akdogan² and O. Akdogan¹* *1. Engineering and Natural Sciences, Bahcesehir University, Istanbul, Turkey; 2. Piri Reis University, Istanbul, Turkey*
- B2-07. Self-Propelled Dipolar Nanocubes.** *M. Kaiser¹, S. Kantorovich^{1,2}, Y. Martinez³ and A. Schmidt³* *1. Universitat Wien Fakultat fur Physik, Wien, Austria; 2. Ural'skij federal'nyj universitet imeni pervogo Prezidenta Rossii B N El'cina, Ekaterinburg, Russian Federation; 3. Universitat zu Koln, Koln, Germany*
- B2-08. Withdrawn**
- B2-09. Alignment of Magnetic Particles in Functionalized Magnetic 3D Printer.** *A. Sarkar¹, P. Paranthaman² and I.C. Nlebedim¹* *1. Critical Materials Institute, Ames Laboratory, Ames, IA, United States; 2. Oak Ridge National Laboratory, Oak Ridge, TN, United States*
- B2-10. Ferrofluid Thermomagnetic Convection Based Magnetic Cooling Devices for Large Scale Cooling.** *M.S. Pattanaik^{1,2}, V.B. Varma^{1,2}, S.K. Cheekati^{1,2} and R. Ramanujan^{1,2}* *1. School of Materials Science & Engineering, Nanyang Technological University, Singapore 639798, Singapore; 2. Singapore-HUJ Alliance for Research and Enterprise (SHARE), Nanomaterials for Energy and Energy-Water Nexus (NEW), Campus for Research Excellence And Technological Enterprise, Singapore 138602, Singapore*
- B2-11. Withdrawn**
- B2-12. Spin-Torque-Induced Chaos in Antiferromagnets.** *A. Parthasarathy¹ and S. Rakheja²* *1. Electrical and Computer Engineering, New York University, New York, NY, United States; 2. Holonyak Micro and Nanotechnology Laboratory, University of Illinois at Urbana-Champaign, Urbana, IL, United States*
- B2-13. Optimizing the Thermoelectric Behavior of Ferrofluid Based Nanomaterials: a Theoretical Study.** *M. Vasilakaki¹, I. Chikina², V.S. Shikin³, N. Ntallis¹, D. Peddis^{4,5}, A.A. Varlamov⁶ and K.N. Trohidou¹* *1. Institute of Nanoscience and Nanotechnology, Ethniko Kentro Ereunas Physikon Epistemon Demokritos, Athens, Greece; 2. CEA-CNRS, IRAMIS, LIONS, CEA-Saclay, France; 3. Institute of Solid State Physics, Chernogolovka, Moscow, Russian Federation; 4. Dipartimento di Chimica e Chimica Industriale, Università di Genova, Genova, Italy; 5. Istituto di Struttura della Materia-CNR, Rome, Italy; 6. CNR-SPIN, Rome, Italy*

- B2-14. Wastewater and Leachate Treatment Using Magnetic Particles and Magnetic Separation.** *P.A. Augusto*^{1,2}, T. Castelo-Grande², J. Rico¹, R. Iglesias¹, J. Marcos¹, L. Merchán¹, L. Hernández¹ and D. Barbosa² *1. Universidad de Salamanca, Salamanca, Spain; 2. Faculty of Engineering, University of Porto, Porto, Portugal*

WEDNESDAY
AFTERNOON
12:30

LIVE Q&A 2

Session B3
SPIN-TORQUE OSCILLATORS

Christopher Safranski, Chair
IBM T. J. Watson Research Center, Yorktown Heights, NY,
United States

- B3-01. Precession Coupled Spin Current in Spin-Torque Driven Magnetic Tunnel Junctions.** *J. Sun*¹ *1. IBM Research, Yorktown Heights, NY, United States*
- B3-02. Bipolar Spin Hall Nano-Oscillators.** *T. Hache*^{1,2}, *Y. Li*³, *T. Weinhold*⁴, *B. Scheumann*¹, *F.J. Gonçalves*¹, *O. Hellwig*^{1,2}, *J. Fassbender*^{1,4} and *H. Schultheiss*^{1,4} *1. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Technische Universität Chemnitz, Chemnitz, Germany; 3. Johns Hopkins University, Baltimore, MD, United States; 4. Technische Universität Dresden, Dresden, Germany*
- B3-03. Programmable Two Channel Frequency Detector Based on a Vortex Nano-Oscillator.** *L. Martins*^{2,1}, *J. Borome*², *A. Jenkins*², *J. Ventura*¹ and *R. Ferreira*² *1. Institute of Physics for Advanced Materials, Nanotechnology and Photonics (IFIMUP), Porto, Portugal; 2. International Iberian Nanotechnology Laboratory, Braga, Portugal*
- B3-04. Vortex Dynamics in Magnetic Tunnel Junctions as the Basis of a Novel Modulation and Demodulation Transmission Scheme.** *A. Jenkins*¹, *L. San Emeterio Alvarez*¹, *P. Freitas*¹ and *R. Ferreira*¹ *1. Spintronics, International Iberian Nanotechnology Laboratory, Braga, Portugal*
- B3-05. Enhanced Amplitude Noise in Synchronized Spin Torque Nano Oscillators.** *S. Wittrock*¹, *S. Tsunegi*², *K. Yakushiji*², *A. Fukushima*², *H. Kubota*², *P. Bortolotti*¹, *U. Ebels*³, *R. Ferreira*⁴, *S. Yuasa*², *G. Cibiel*⁵, *S. Galliou*⁶, *E. Rubiola*⁶ and *V. Cros*¹ *1. Unité Mixte de Physique CNRS, Thales, Palaiseau, France; 2. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 3. Univ. Grenoble Alpes, CEA, INAC-SPINTEC, CNRS, SPINTEC, Grenoble, France; 4. International Iberian Nanotechnology Laboratory (INL), Braga, Portugal; 5. Centre National d'Etudes Spatiales (CNES), Toulouse, France; 6. FEMTO-ST Institute, CNRS, Univ. Bourgogne Franche Comté, Besancon, France*

- B3-06. Dynamic C-State Beyond the Gyrotropic Motion in the Vortex Dynamics of a Spin Torque Nano Oscillator.** S. Wittrock¹, P. Talatchian^{1,2}, M. Romera^{1,3}, M. Jotta Garcia¹, R. Ferreira⁴, R. Lebrun¹, P. Bortolotti¹, U. Ebels⁵, J. Grollier¹ and V. Cros¹ *1. Unite Mixte de Physique CNRS/Thales, Palaiseau, France; 2. Institute for Research in Electronics and Applied Physics, Univ. of Maryland, College Park, MD, United States; 3. NGFMC, Departamento de Fisica de Materiales, Univ. Complutense de Madrid, Madrid, Spain; 4. International Iberian Nanotechnology Laboratory (INL), Braga, Portugal; 5. Univ. Grenoble Alpes, CEA, INAC-SPINTEC, CNRS, SPINTEC, Grenoble, France*
- B3-07. Withdrawn**
- B3-08. Origin of Nonlinear Damping due to Mode Coupling in Auto-Oscillatory Modes Strongly Driven by Spin-Orbit Torque.** I. Lee¹, C. Zhang¹, S. Singh¹, B. McCullian¹ and P. Hammel¹ *1. Ohio State University, Columbus, OH, United States*
- B3-09. Ultra-Fast Spectrum Analysis at GHz Frequencies Using Spin-Torque Nano-Oscillators.** A. Litvinenko¹, A. Sidi El Valli¹, V. Iurchuk¹, P. Sethi¹, S. Louis², V. Tyberkevych², A. Jenkins³, R. Ferreira³, R. Sousa¹, L. Vila¹, S. Auffret¹, L. Prejbeanu¹, B. Dieny¹, A.N. Slavin² and U. Ebels¹ *1. Spintec, University Grenoble Alpes, CEA, CNRS, IRIG, Grenoble, France; 2. Oakland University, Rochester, MI, United States; 3. International Iberian Nanotechnology Laboratory, Braga, Portugal*
- B3-10. Physical Reservoir Computing by Spin-Torque Oscillator at the Edge of Chaos.** A. Kamimaki¹, S. Tsunegi¹, T. Taniguchi¹, N. Akashi², K. Nakajima², A. Fukushima¹, S. Yuasa¹, V. Cros³, J. Grollier³ and H. Kubota¹ *1. Spintronics Research Center, AIST, Tsukuba, Japan; 2. Graduate School of Information Science and Technology, University of Tokyo, Tokyo, Japan; 3. Unité Mixte de Physique, CNRS/Thales, Palaiseau, France*

Session B4
COMPLEX OXIDE, HEUSLER ALLOY, AND 2D
SYSTEMS
(Poster Session)

Christianne Beekman, Chair
Florida State University/NHMFL, Tallahassee, FL, United States

- B4-01. Bose-Einstein Condensation of Triplons Close to the Quantum Critical Point in the Quasi-One-Dimensional Spin-1/2 Antiferromagnet NaVOPO₄.** P.K. Mukharjee¹, K. Ranjith², B. Koo², J. Sichelschmidt², M. Baenitz², Y. Skourski³, Y. Inagaki^{4,5}, Y. Furukawa⁵, A. Tsirlin⁶ and R. Nath¹ 1. *Physics, Indian Institute of Science Education Research Thiruvananthapuram, Thiruvananthapuram, India;* 2. *Physics of Quantum Materials, Max-Planck-Institut für Chemische Physik fester Stoffe, Dresden, Germany;* 3. *Dresden High Magnetic Field laboratory, Dresden, Germany;* 4. *Department of Applied Quantum Physics, Faculty Of Engineering, Kyushu Daigaku, Fukuoka, Japan;* 5. *Ames Laboratory, Iowa State University, Ames, IA, United States;* 6. *Experimental physics VI, Centre for Electronic Correlations and Magnetism, Institute of Physics, University Of Augsburg, Augsburg, Germany*
- B4-02. First-Principles Studies of Quantum Magnetism in Mo₃O₈ Cluster Systems.** S.A. Nikolaev², I. Solovyev¹ and S. Streltsov³ 1. *Busshitsu Zairyo Kenkyu Kiko Kokusai Nanoarchitectonics Kenkyu Kyoten, Tsukuba, Japan;* 2. *Tokyo Kogyo Daigaku, Meguro-ku, Japan;* 3. *Institut fiziki metallov imeni M N Miheeva Ural'skogo otdelenia Rossijskoj akademii nauk, Ekaterinburg, Russian Federation*
- B4-03. Withdrawn**
- B4-04. Study of Structural, Transport and Magneto-Crystalline Anisotropic Properties in La_{1-x}Sr_xMnO₃ (0.30 ≤ x ≤ 0.40) Perovskite Manganite.** G. Channagoudra¹, S. Gupta², V.K. Pecharsky² and V. Dayal¹ 1. *Department of Physics, Maharaja Institute of Technology Mysore, Mandya, India;* 2. *Division of Materials Science and Engineering, Ames Laboratory, US Dept. of Energy, Ames, IA, United States*
- B4-05. Withdrawn**
- B4-06. Effect of the Y Element on the Structural, Electronic and Magnetic Properties of Heusler Compounds Co₂YIn (Y=Nb, Ti). an *ab Initio* Study.** Z.W. Muthui¹, R.J. Musembi², J.M. Mwabora² and A. Kashyap³ 1. *Physical Sciences, Chuka University, Chuka, Kenya;* 2. *Physics, University of Nairobi, Nairobi, Kenya;* 3. *Basis Sciences, Indian Institute of Technology, Mandi, Mandi, India*

B4-07. Evidence for Slow Magnetic Relaxation and Memory Effects in the Spin Glass Phase of a BiFeO₃-Based Multiferroic Solid Solution System Having Aquasi-2D Magnetic Correlations. *P. Singh*¹ and *D. Pandey*¹ *1. School of Materials Science and Technology, Indian Institute of Technology Banaras Hindu University, Varanasi, India*

B4-08. Magnetic and Structural Properties of MnCoNiSn. *Y. Khatri*¹, *R. Skomski*², *D.J. Sellmyer*² and *A. Kashyap*¹
1. Indian Institute of Technology Mandi, Mandi, India;
2. Department of Physics and Astronomy & NCMN, University of Nebraska, Lincoln, NE, United States

B4-09. Withdrawn

MONDAY
EVENING
7:00

LIVE Q&A 3

Session C1 FERRITES AND GARNETS I

Tianxiang Nan, Chair
Institute of Microelectronics, Tsinghua University, Beijing, China

C1-01. A new way to Determine the Magneto-Crystalline Anisotropy of Li-Zn Ferrites. *J. Saied*^{1,2}, *R. Lebourgeois*¹ and *V. Laur*² *1. Thales Research and Technology France, Palaiseau, France; 2. LABSTICC, Universite de Bretagne Occidentale, Brest, France*

C1-02. Low Damping BiYIG and BiYIG/TmIG Heterostructures for Spintronics. *T. Fakhrul*¹, *G.A. Riley*², *E. Rosenberg*¹, *S. Huang*¹, *L.M. Caretta*¹, *J. M. Shaw*², *G. Beach*¹, *H. Nembach*² and *C. Ross*¹ *1. Massachusetts Institute of Technology, Cambridge, MA, United States; 2. National Institute of Standards and Technology, Gaithersburg, MD, United States*

C1-03. Nanoscale U-Type Hexaferrites as Microwave Absorbers. (Invited) *R. Chatterjee*¹ and *S. Kumar*² *1. Physics, Indian Institute of Technology Delhi, New Delhi, India; 2. Physics, University of Delhi, New Delhi, India*

C1-04. Permeability Spectra of Planar M-Type Barium Hexaferrites With High Snoek's Product by Two-Step Sintering. *Q. Li*¹, *Y. Chen*², *C. Yu*¹, *K. Qian*¹ and *V. Harris*¹
1. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA, United States;
2. Innovation Center, Rogers Corporation, Burlington, MA, United States

C1-05. Epsilon Iron Oxide Based Nanomagnets Exhibiting Large Magnetic Hysteresis Loop. *M. Yoshikiyo*¹, *A. Namai*¹ and *S. Ohkoshi*¹ *1. Department of Chemistry, The University of Tokyo, Tokyo, Japan*

C1-06. Hexagonal Nano-Ferrites Used on a v-Band Self-Bias on-Chip Circulator for CMOS. *W. Quan*¹, *M.N. Afsar*¹ and *V. Koomson*¹ *1. Tufts University, Medford, MA, United States*

- C1-07. Origin of Magnetic Anisotropy and Damping in Spinel Ferrites.** *J. Lumetzberger*¹, *M. Buchner*¹, *S. Pile*¹, *V. Ney*¹, *W. Gaderbauer*², *N. Daffe*³, *M.V. Moro*⁴, *D. Primetzhofer*⁴, *K. Lenz*⁵ and *A. Ney*¹. *1. Institute of Semiconductor and Solid State Physics, Johannes Kepler University Linz, Linz, Austria; 2. Center for Surface and Nanoanalytics, Christian Doppler Laboratory for Nanoscale Phase Transformations, Johannes Kepler University Linz, Linz, Austria; 3. Paul Scherrer Institut, Swiss Light Source (SLS), Villigen, Switzerland; 4. Department of Physics and Astronomy, Angström Laboratory, Uppsala University, Uppsala, Sweden; 5. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*
- C1-08. Switching Field, Orientation and Shape Anisotropy Contribution on the Magnetic Heating of Fe₃O₄ Nanodisc.** *G. Niraula*¹, *J.A. Antonio Coaquira*³, *F.H. Aragon*³, *F. Garcia*², *A. Mello*², *A.F. Bakuzis*⁴, *D. Muraca*⁵ and *S.K. Sharma*¹. *1. Physics, Federal University of Maranhao, Sao Luiz, Brazil; 2. Brazilian Center for Physics Research, Rio de Janeiro, Brazil; 3. Physics, University of Brasilia, Brasilia, Brazil; 4. Physics, Federal University of Goais, Goiania, Brazil; 5. Institute of Physics "Gleb Wataghin" (IFGW), Physics, University of Campinas, Campinas, Brazil*
- C1-09. Improved Residual Flux Measurement Method Based on Transient Current Characteristics Used in Single-Phase Power Transformer.** *S. Wu*¹, *Y. Wang*¹, *H. Cailing*¹ and *C. Liu*¹. *1. Hebei University of Technology, Tianjin, China*
- C1-10. Narrow Ferromagnetic Resonance Linewidth in Perpendicularly Magnetized Tm₃Fe₅O₁₂ Thin Films Grown by Pulsed Laser Deposition.** *D. Gouéré*¹, *H. Merbouche*¹, *C. Carrétero*¹, *R. Lebrun*¹, *P. Bortolotti*¹, *V. Cros*¹ and *A. Anane*¹. *1. Unité Mixte de Physique CNRS, Thales, Université Paris-Saclay, 91767 Palaiseau, France., Palaiseau, France*
- C1-11. Cation-Specific Magnetic Depth Profiles of Ultrathin Fe₃O₄ Films Obtained by X-Ray Resonant Magnetic Reflectivity (XRMR).** *T. Pohlmann*^{1,2}, *T. Kuschel*³, *J. Rodewald*¹, *J. Thien*¹, *K. Ruwisch*¹, *F. Bertram*², *E. Weschke*⁴, *P. Shafer*⁵, *J. Wollschläger*¹ and *K. Küpper*¹. *1. Physics, University of Osnabruck, Osnabruck, Germany; 2. Photon Science, DESY, Deutsches Elektronen-Synchrotron, Hamburg, Germany; 3. Center for Spintronic Materials and Devices, Department of Physics, Universitat Bielefeld, Bielefeld, Germany; 4. Wilhelm-Conrad-Röntgen-Campus BESSY II, Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany; 5. Lawrence Berkeley National Laboratory, Berkeley, CA, US, Berkeley, CA, United States*
- C1-12. Magnetic Properties of PLD-Grown TmYIG Thin Films.** *E.R. Rosenberg*¹, *J. M. Shaw*², *G.A. Riley*², *S. Ngo*¹, *H. Nembach*² and *C. Ross*¹. *1. Massachusetts Institute of Technology, Cambridge, MA, United States; 2. National Institute of Standards and Technology, Boulder, CO, United States*

- C1-13. The Impact of the Solvent $\tan\delta$ on the Magnetic Characteristics of Nanostructured NiZn-Ferrite Film Deposited by Microwave-Assisted Solvothermal Technique.**
R.R. Kahmei¹, S. Arackal¹, S. Shivashankar¹, N. Bhat¹ and R. Sai¹ 1. Centre for Nanoscience and Engineering, Indian Institute of Science, Bangalore, India

MONDAY
EVENING
7:00

LIVE Q&A 3

Session C2

RARE EARTH TRANSITION METAL BORIDES I

Tanjore Jayaraman, Chair
University of Michigan, Dearborn, MI, United States

- C2-01. Finite-Temperature Dynamical and Static Properties of the Nd Magnet Studied by an Atomistic Modeling. (Invited)**
M. Nishino^{1,2}, I.E. Uysal², T. Hinokihara^{3,2} and S. Miyashita^{3,2}
1. Research Center for Advanced Measurement and Characterization, National Institute for Materials Science, Tsukuba, Japan; 2. Elements Strategy Initiative Center for Magnetic Materials, National Institute for Materials Science, Tsukuba, Japan; 3. Institute for Solid State Physics, the University of Tokyo, Kashiwanoha, Japan
- C2-02. Revisiting, Understanding, and Predicting Magnetism and Magnetic Anisotropy of $RE_2Fe_{14}B$ (RE = Rare Earth) From Electronic Structure.** H. Ucar¹, R. Choudhary² and D. Paudyal²
1. Chemical and Materials Engineering, California State Polytechnic University Pomona, Pomona, CA, United States; 2. Ames Laboratory, Ames, IA, United States
- C2-03. Application of Systems Level Modeling for Addressing Criticality in Rare Earth Permanent Magnets.**
I.C. Nlebedim¹, X. Liu¹ and A. Sarkar¹ 1. Critical Materials Institute, Ames Laboratory, Ames, IA, United States
- C2-04. Nucleation and Coercivity Analyses on the Atomistic Spin Model of Permanent Magnets. (Invited)** Y. Toga^{1,2}
1. Institute for Solid State Physics, The University of Tokyo, Kashiwa, Japan; 2. Elements Strategy Initiative Center for Magnetic Materials (ESICMM), Tsukuba, Japan
- C2-05. Cold Spray Additive Manufacturing of Permanent Magnets.**
A. Baker¹, R. Thuss², N. Woollett¹, E. Stavrou¹, S. McCall¹ and H. Radousky¹ 1. Lawrence Livermore National Laboratory, Livermore, CA, United States; 2. TTEC LLC, Berryville, VA, United States

- C2-06. Upscaling of the Novel 2 Powder Method for the Manufacturing of Heavy Rare Earth-Lean Permanent Magnets.** K. Opelt¹, T. Ahmad¹, O. Diehl¹, M. Schönfeldt¹, E. Brouwer¹, J.D. Rossa¹, J. Gassmann¹ and O. Gutfleisch^{1,2}
1. Magnetic Materials, Fraunhofer-Einrichtung für Wertstoffkreislaufe und Ressourcenstrategie IWKS, Hanau, Germany; 2. Functional Materials, Technische Universität Darmstadt Fachbereich Material- und Geowissenschaften, Darmstadt, Germany
- C2-07. Nd-Fe-B Based Permanent Magnetic Materials Design for Additive Manufacturing: 3DREMAG.** S. Riegg¹, J. Reijonen², O. Tosoni³, J. Gassmann⁴, K. Skokov¹ and O. Gutfleisch¹
1. Material and Geo science, Functional Materials, Technische Universität Darmstadt Fachbereich Material- und Geowissenschaften, Darmstadt, Germany; 2. VTT Technical Research Centre of Finland Ltd, Espoo, Finland; 3. Commissariat à l'énergie atomique et aux énergies alternatives Laboratoire d'Innovation pour les Technologies des Energies Nouvelles et les Nanomateri, Grenoble, France; 4. Fraunhofer-Einrichtung für Wertstoffkreislaufe und Ressourcenstrategie IWKS, Hanau, Germany
- C2-08. Understanding the Enhancement in Hard Magnetic Properties of Rapidly Solidified (Nd, Pr)-Fe-B Melt-Spun Ribbons.** K. Gandha¹, X. Liu¹, W. Tang² and I.C. Nlebedim¹
1. Critical Materials Institute, Ames Laboratory, Ames, IA, United States; 2. Ames Laboratory, Ames, IA, United States
- C2-09. Magnetic Properties of R₂Fe₁₄B Sintered Magnets Substituted 50 at Substitution of Nd With Y and Ce.** Y. Enokido¹, A. Koda¹, Y. Umeda¹, D. Tanaka² and Y. Kitamoto³
1. Technology and Intellectual Property HQ, TDK Corporation, Chiba, Japan; 2. Production Engineering HQ, TDK Corporation, Chiba, Japan; 3. Department of Materials Science and Engineering, Tokyo Institute of Technology, Yokohama, Japan
- C2-10. Manifestation of Initial Crystallization and c-Axis Texture in Pr-Fe-B Thin Films Grown on Glass Substrates.** L.T. Tran¹, C. Chang¹ and A. Sun¹ *1. Yuan Ze University, Chung-Li, Taiwan*

MONDAY
 EVENING
 7:00

LIVE Q&A 3

Session C3
INTERDISCIPLINARY APPLICATIONS II
(Poster Session)

Feodor Ogrin, Chair
 University of Exeter, Exeter, United Kingdom

- C3-01. Intrinsic Magnetic Properties of Individual Magnetite Nanoparticles With Different Sizes and Shapes.** H. Mamiya², H. Fukumoto¹, J. Cuya Huaman¹, K. Suzuki¹, H. Miyamura¹ and B. Jeyadevan¹ *1. Shiga Kenritsu Daigaku Kobakugy Daigakuin Kogaku Kenkyuka, Hikone, Japan; 2. National Institute for Materials Science, Tsukuba, Japan*

- C3-02. Ab Initio Calculation of Hubbard Parameter (U) for Alpha-MnO₂.** *R. Mahajan¹ and A. Kashyap¹ I. Indian Institute of Technology Mandi, Mandi, India*
- C3-03. Oleic Acid Functionalized Fe₃O₄ Magnetic Nanoparticles and its Adsorption Capability of oil for Potential Biomedical Applications.** *G.C. Hermosa¹, K. Chen¹ and A. Sun¹ I. Yuan Ze University, Chung-Li, Taiwan*
- C3-04. Weak Magnetic Anomaly Signal Detection Based on Entropy of Coherent Differential Signal.** *Z. Wang¹, J. Qiu¹, D. Xie¹, J. Ou¹ and Q. Xu¹ I. Key Laboratory of Optoelectronic Technology & System of Ministry of Education, College of Optoelectronic Engineering, Chongqing University, Chongqing, China, Chongqing, China*
- C3-05. Conceptual Design of Magnetic Force Control System Using Wedge Mechanism.** *A. Wang¹, S. Park¹, M. Noh¹ and Y. Park¹ I. Chungnam National University, Daejeon, The Republic of Korea*
- C3-06. Investigation of the Graphitization Process of a Highly Oriented Graphite Precursor by a Magnetic Field.** *A. Hamasaki¹, A. Sadohara¹, Y. Takeuchi³, A. Katsuki² and S. Ozeki¹ I. Faculty of Science, Shinshu University, Matsumoto, Japan; 2. School of General Education, Shinshu University, Matsumoto, Japan; 3. Muroran Institute of Technology, Muroran, Japan*
- C3-07. Withdrawn**
- C3-08. Sensorless Control Scheme for PMSM Based on High-Frequency Square-Wave Voltage Injection Considering Non-Linear Change of Inductance in D-Q Axis.** *W. Cui¹, S. Zhang¹ and Y. Feng¹ I. Department of Automation, Shanghai University, Shanghai, China*
- C3-09. Regeneration and Reuse of Magnetic Particles for Wastewater Treatment.** *L. Hernández García², P.A. Augusto², T. Castelo-Grande¹ and D. Barbosa¹ I. Laboratory for Process Engineering, Environment, Biotechnology and Energy, Universidade de Porto, Faculdade de Engenharia, Porto, Portugal; 2. Ingeniería Química y Textil, Universidad de Salamanca, Facultad de Ciencias Químicas, Salamanca, Spain*
- C3-10. Micromagnetic Analysis of Exchange-Coupled Nd₂Fe₁₄B/ α -Fe Multilayers and Their Applications in Micro-Scale Devices.** *P. Pathak¹, V.K. Yadav¹ and D. Mallick¹ I. Department of Electrical Engineering, Indian Institute of Technology Delhi, New Delhi, India*
- C3-11. Effect of Direct Exchange Coupling via the Insulator on the Magnetic Tunnel Junction Based Molecular Spintronics Devices With Pre-Existing Strong Molecule Induced Antiferromagnetic Coupling.** *H. Brown¹, A. Grizzle¹, C. D'Angelo¹ and P. Tyagi^{1,2} I. Center for Nanotechnology Research and Education, University of the District of Columbia, Washington, DC, United States; 2. Mechanical Engineering, University of the District of Columbia, Washington, DC, United States*

- C3-12. Monte Carlo Simulation Study of the Effect of Inter-Molecular Coupling on the Magnetic Properties of Magnetic Tunnel Junction Based Molecular Spintronics Devices.**
P. Suh¹ and P. Tyagi¹ 1. Center for Nanoscale Research and Education (CNRE), University of the District of Columbia, Washington, DC, United States
- C3-13. Influence of Cerium Dioxide Content on Degradation Efficiency and Iron Oxide Transformations in CeO₂/Fe₂O₃ Sorbents.** *O. Zivotsky¹, J. Lunacek¹, Y. Jiraskova², J. Ederer³, P. Janos³ and K. Cabanova⁴ 1. Department of Physics, Vysoka skola banska-Technicka univerzita Ostrava Fakulta elektrotechniky a informatiky, Ostrava, Czechia; 2. Ustav fyziky materialu Akademie ved Ceske republiky, Brno, Czechia; 3. Univerzita Jana Evangelisty Purkyne v Usti nad Labem Fakulta zivotniho prostredi, Usti nad Labem, Czechia; 4. Vysoka skola banska-Technicka univerzita Ostrava, Ostrava, Czechia*
- C3-14. Magneto-Elastic Coupling in Multiferroic Metal-Organic Framework [(CH₃)₂NH₂]Co(HCOO)₃ Complex.**
K. Thirunavukkuarasu^{1,2}, R. Richardson¹, Z. Lu², N. Huang³, D. Smirnov² and D. Mandrus³ 1. Department of Physics, Florida Agricultural and Mechanical University, Tallahassee, FL, United States; 2. National High Magnetic Field Laboratory, Tallahassee, FL, United States; 3. University of Tennessee Knoxville, TN, US, Knoxville, TN, United States

MONDAY
 EVENING
 7:00

LIVE Q&A 3

Session C4
MAGNETIC NANOSTRUCTURED MATERIALS
(Poster Session)

Karine Chesnel, Chair
 Brigham Young University, Provo, UT, United States

- C4-01. Subharmonic Return Point Memory in Artificial Spin Ice.**
A. Vanstone¹, J.C. Gartside¹, K. Stenning¹, D. Arroo² and W. Branford¹ 1. Imperial College London, Imperial College London, London, London, GB, London, United Kingdom; 2. University College London, London, United Kingdom
- C4-02. Magnetic Hysteresis of Blocked Ferrihydrite Nanoparticles.**
S. Komogortsev¹, D. Balaev¹, A. Krasikov¹, S. Stolyar¹, R. Yaroslavtsev¹, V. Ladygina¹ and R. Iskhakov¹ 1. Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russian Federation
- C4-03. Evidence of Two Dimensional Dilute Antiferromagnet Mediated Exchange Bias and Giant Vertical Shift in LaFeO₃ - NiO Nanocomposite.** *P. Sharma¹ and R. Chatterjee¹ 1. Physics, Indian Institute of Technology, Delhi, Hauz Khas, India*
- C4-04. Withdrawn**

- C4-05. Magnetic Hysteresis Scaling of Fe₃O₄ Nanoparticles With Controlled Interparticle Distance.** *K. Oyanagi*¹, *S. Kobayashi*¹ and *J. Choi*² *1. Faculty of Science and Engineering, Iwate University, Morioka, Japan; 2. Hanbat National University, Daejeon, The Republic of Korea*
- C4-06. Directional Dependence of Magnetic Nanodiscs Placed on a Square Lattice.** *N. Strandqvist*¹, *B. Skovdal*¹, *H. Stopfel*², *R. Rowan-Robinson*³, *V. Kapaklis*¹ and *B. Hjörvarsson*¹ *1. Physics and Astronomy, Uppsala Universitet, Uppsala, Sweden; 2. Engineering Sciences, Uppsala Universitet, Uppsala, Sweden; 3. Materials Science and Engineering, The University of Sheffield, Sheffield, United Kingdom*
- C4-07. Magnetization Reversal Mechanism of Magnetic Ring Nanostructures With Varying Widths Under Different Magnetic Field Directions.** *T. Huang*¹, *K. Wu*¹, *Y. Lin*¹, *W. Peng*¹, *P. Chen*¹ and *M. Chen*¹ *1. National Applied Research Laboratories, Hsinchu, Taiwan*
- C4-08. Magnetic Configurations in Nanoscale Epitaxial Iron Cuboids.** *S. Guo*¹, *M. Henschel*¹, *V. Neu*¹, *T. Blon*² and *K. Leistner*¹ *1. Leibniz IFW Dresden, Dresden, Germany; 2. Laboratoire de Physique et Chimie des Nano-Objets, UMR 5215 INSA, CNRS, UPS, Université de Toulouse, Toulouse, France*
- C4-09. Effects of Infill Orientation and Percentage on the Mechanical and Magnetoactive Properties of 3D-Printed Magnetorheological Elastomer Structures.** *H. Thatcher*¹, *T. Calascione*¹, *N.A. Fischer*¹, *A. Robinson*¹ and *B. Nelson-Cheeseman*¹ *1. Mechanical Engineering, University of Saint Thomas, Saint Paul, MN, United States*
- C4-10. Use of two-Photon Lithography With a Negative Resist and Processing to Realise Cylindrical Magnetic Nanowires.** *J. Askey*¹, *M.O. Hunt*¹, *W. Langbein*¹ and *S. Ladak*¹ *1. School of Physics and Astronomy, Cardiff University, Cardiff, United Kingdom*
- C4-11. Fabrication of 3D Magnetic Nanocomposite Materials Using Inkjet Printing.** *M. Cannamela*^{1,2}, *J. Stasiak*³ and *P. Dhagat*⁴ *1. School of Mechanical, Industrial and Manufacturing Engineering, Oregon State University, Corvallis, OR, United States; 2. HP, Inc., Corvallis, OR, United States; 3. HP Labs, HP, Inc., Corvallis, OR, United States; 4. School of Electrical Engineering and Computer Science, Oregon State University, Corvallis, OR, United States*
- C4-12. Fabrication of Hydroelectric Cells Using Ferrites and Stannic Oxide for the Production of Green Energy.** *P. Kumar*^{1,2} and *V.K. Verma*² *1. Department of Physics and Astrophysics, University of Delhi, New Delhi, India; 2. Department of Physics, Hindu College New Delhi, New Delhi, India*

Session C5
SPIN INJECTION AND NEUROMORPHIC
COMPUTING
(Poster Session)

Rahul Mishra, Chair
National University of Singapore, Singapore, Singapore

- C5-01. Spin Injection Characteristics of Py/Graphene/Pt by Means of THz Measurement and Spin Pumping.** *H. Idzuchi^{1,2}, S. Iihama¹, M. Shimura¹, A. Kumatani^{1,3}, S. Mizukami¹ and Y.P. Chen^{2,1}* *1. Tohoku University, Sendai, Japan; 2. Purdue University, West Lafayette, IN, United States; 3. National Institute for Material Science, Tsukuba, Japan*
- C5-02. Efficient Control of Magnon Population by Injecting Spin Current Generated Using Naturally-Oxidized Copper Film.** *G. Okano¹ and Y. Nozaki²* *1. CEMS, RIKEN, Wako, Japan; 2. Dept. of Physics, Keio University, Yokohama, Japan*
- C5-03. Sensing Stray Fields From Magnetic Nanocircuits With Nitrogen-Vacancy Defects.** *A. Solyom¹, M. Caouette-Mansour¹, B. Ruffolo¹, P.M. Braganca², M. Pioro-Ladrière^{3,4}, L. Childress¹ and J. Sankey¹* *1. Physics, McGill University, Montreal, QC, Canada; 2. Western Digital Corp, San Jose, CA, United States; 3. Institut Quantique and Département de Physique, Université de Sherbrooke, Sherbrooke, QC, Canada; 4. Quantum Information Science Program, Canadian Institute for Advanced Research, Toronto, ON, Canada*
- C5-04. The Structure and Dynamics of Magnetic Vortices and Solitons in Multilayer Ferromagnetic Nanostructures.** *K. Samsonov¹, S. Stepanov³, G. Antonov⁵, A. Ekomasov³, R. Kudryavtsev², A. Gumerov³, K. Zvezdin⁴ and E. Ekomasov^{3,1}* *1. Department of Physical Processes and Systems Modeling, University of Tyumen, Tyumen, Russian Federation; 2. Institute of Molecule and Crystal Physics UFRC RAS, Ufa, Russian Federation; 3. Department of theoretical physics, Baskirskij Gosudarstvennyj Universitet, Ufa, Russian Federation; 4. Institut obsej fiziki imeni A M Prohorova RAN, Moskva, Russian Federation; 5. Baskirskij Gosudarstvennyj Universitet, Ufa, Russian Federation*
- C5-05. Mutual Synchronization of Spin-Torque Oscillators With a Perpendicular Polarizer.** *M. Castro^{1,2}, D. Mancilla¹, N. Strelkov², A. Litvinenko², M. Ibarra², S. Allende¹, B. Dieny², U. Ebels² and L. Buda-Prejbeanu²* *1. Universidad de Santiago de Chile, Santiago de Chile, Chile; 2. Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, IRIG-SPINTEC, 38000, Grenoble, France*

- C5-06. Numerical Simulation of Artificial Spin ice for Reservoir Computing.** *K. Hon*¹, *Y. Kuwabiraki*², *M. Goto*^{1,3}, *H. Nomura*^{1,3}, *R. NAKATANI*² and *Y. Suzuki*^{1,3} *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 2. Department of Materials Science and Engineering, Graduate School of Engineering, Osaka University, Suita, Japan; 3. Center for Spintronics Research Network (CSRN), Osaka University, Toyonaka, Japan*
- C5-07. A Spintronic Neuron Based on Spin-Orbit Torque Induced Stochastic Switching of a Nanomagnet.** *S. Zhang*¹, *J. Zhang*¹, *S. Li*¹, *J. Hong*¹ and *L. You*¹ *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China*
- C5-08. Spike Time Dependent Plasticity Based Spin-Neuromorphic Computing for Pattern Recognition Application.** *A. Lone*¹, *S. Amara*¹ and *H. Fariborzi*¹ *1. Computer, Electrical and Mathematical Science and Engineering Division, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

MONDAY
EVENING
7:30

LIVE Q&A 4

Session D1

EXCHANGE BIAS AND OTHER NOVEL EXCHANGE IN THIN FILMS

Patrick Quarterman, Chair

NIST Center for Neutron Research, Gaithersburg, MD, United States

- D1-01. Exchange Bias due to Dipolar Interactions in Heterostructures. (Invited)** *F. Torres*^{1,2}, *I. Montoya*⁴, *C. Redondo*⁴, *M. Kiwi*¹, *R. Morales*⁴ and *I.K. Schuller*³
1. Physics, Universidad de Chile, Santiago de Chile, Chile; 2. CEDENNA, Centro para el Desarrollo de la Nanociencia y la Nanotecnología CEDENNA, Santiago, Chile; 3. Physics, University of California San Diego, La Jolla, CA, United States; 4. Department of Physical-Chemistry, Universidad del Pais Vasco, Bilbao, Spain
- D1-02. Exchange Bias in Fe/Ir₂₀Mn₈₀ Bilayers: Role of Spin-Glass Like Interface and ‘Bulk’ Antiferromagnet Spins.** *S. Nayak*¹, *P.K. Manna*¹, *V. Thiruvengadam*¹, *B.B. Singh*¹, *J.A. Chelvane*² and *S. Bedanta*¹ *1. National Institute of Science Education and Research, Bhubaneswar, India; 2. Advanced Magnetism Group, Defence Metallurgical Research Laboratory (DMRL), Hyderabad, India*
- D1-03. Demonstration and Characterization of Effective Random Exchange Fields in Ferromagnet/Antiferromagnet Bilayers.** *G. Chen*¹, *D. Collette*¹ and *S. Urazhdin*¹ *1. physics, Emory University, Atlanta, GA, United States*

- D1-04. Microscopic Origin of Magnetization Reversal in Exchange-Coupled Ferro-/Ferrimagnetic Bilayers.** *M. Heigl*¹, *C. Vogler*², *A. Mandru*³, *X. Zhao*³, *H.J. Hug*^{3,4}, *D. Suess*² and *M. Albrecht*¹ *1. Institute of Physics, University of Augsburg, Augsburg, Germany; 2. Faculty of Physics, University of Vienna, Vienna, Austria; 3. Empa-Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland; 4. Department of Physics, University of Basel, Basel, Switzerland*
- D1-05. Tuning of the Magnetization Direction in Cr₂O₃-Based Exchange-Coupled Systems.** *I. Hontecillas*¹ and *R. Ranchal*^{1,2} *1. Universidad Complutense de Madrid, Madrid, Spain; 2. Universidad Complutense de Madrid Instituto de Magnetismo Aplicado, Madrid, Spain*
- D1-06. Atomistic Spin Dynamics Simulations of Exchange Bias in Polygranular IrMn/CoFe Bilayers and the Origin of the Athermal Training Effect.** *S. Jenkins*¹, *R.F. Evans*¹ and *R. Chantrell*¹ *1. Department of Physics, University of York, York, United Kingdom*
- D1-07. π – Anisotropy: a Magneto-Electric Explanation for Molecular Exchange Bias.** *T. Moorsom*^{3,1}, *S. Alghamdi*^{1,2}, *S. Stansill*¹, *E. Poli*⁴, *G. Teobaldi*^{4,5}, *M. Beg*⁶, *H. Fangohr*⁶, *M.D. Rogers*¹, *Z. Aslam*¹, *M. Ali*¹, *B. Hickey*¹ and *O. Cespedes*¹ *1. University of Leeds, Leeds, United Kingdom; 2. Taibah University, Madinah, Saudi Arabia; 3. University of Glasgow College of Science and Engineering, Glasgow, United Kingdom; 4. Science and Technology Facilities Council, Swindon, United Kingdom; 5. University of Liverpool, Liverpool, United Kingdom; 6. European XFEL GmbH, Schenefeld, Germany*
- D1-08. Is Exchange Bias at the Hybrid Organic/Ferromagnet Interface an Intrinsic Effect?** *G. Avedissian*¹, *J. Arabski*¹, *J. Wytko*², *J. Weiss*², *V. Papaefthimiou*³, *E. Beaurepaire*¹ and *C. Meny*¹ *1. Institut de Physique et Chimie des Matériaux de Strasbourg, Strasbourg, France; 2. Institut de Chimie de Strasbourg, Strasbourg, France; 3. Institut de Chimie et Procédés pour l'Énergie, l'Environnement et la Santé, Université De Strasbourg, Strasbourg, France*
- D1-09. Emergence and Disappearance of Exchange Bias in Ni-Mn/Fe-Ni Thin Films Due to Structural Transformations.** *M. Moskalev*¹, *E. Kudyukov*¹, *E. Kravtsov*^{2,1}, *V. Lepalovskij*¹ and *V. Vas'kovskiy*^{1,2} *1. Department of magnetism and magnetic nanomaterials, Ural'skij federal'nyj universitet imeni pervogo Prezidenta Rossii B N El'cina, Ekaterinburg, Russian Federation; 2. Institut fiziki metallov imeni M N Miheeva Ural'skogo otdelenia Rossijskoj akademii nauk, Ekaterinburg, Russian Federation*
- D1-10. Mini Magnetic Propellers: Stability Considerations in Twisted Magnetic Structures.** *B.R. McGrath*¹, *K. Livesey*^{1,2} and *R. Camley*¹ *1. Physics, University of Colorado at Colorado Springs, Colorado Springs, CO, United States; 2. School of Mathematical and Physical Sciences, The University of Newcastle, Callaghan, NSW, Australia*

- D1-11. Ferromagnetic SmN/GdN Superlattices.** *E.M. Anton*¹, W. Holmes-Hewett¹, J. McNulty¹, F. Natali¹, S. Granville², F. Bramley¹, B. Ruck¹ and H. Trodahl¹ *1. School of Chemical and Physical Sciences, Victoria University of Wellington, Wellington, New Zealand; 2. Robinson Research Institute, Victoria University of Wellington, Lower Hutt, New Zealand*
- D1-12. Critical Magnetic Behavior in [Ag₈/Co_{0.5}]_x64, [Ag₁₆/Co₁]_x32 and [Ag₈/Co₁]_x32 Epitaxial Multilayers.** E. Navarro², M. Alonso², A. Ruiz², C. Magen³, U. Urdirroz², F. Cebollada¹, L. Balcells⁴, B. Martínez⁴, J.M. González² and F. Palomares² *1. Universidad Politécnica de Madrid, Madrid, Spain; 2. Instituto de Ciencia de Materiales de Madrid - CSIC, Madrid, Spain; 3. Instituto de Ciencia de Materiales de Aragón - CSIC, Zaragoza, Spain; 4. Instituto de Ciencia de Materiales de Barcelona - CSIC, Barcelona, Spain*
- D1-13. Investigation of the Spin Glass Density of States Using a Combination of Monte Carlo Method and Neural Network.** A.O. Korol¹, K. Makarova^{1,2}, D. Kapitan^{1,2}, A. Rybin^{1,2}, E. Vasiliev^{1,2}, A. Makarov^{1,2}, K. Soldatov^{1,2}, Y. Shevchenko^{1,2} and V.Y. Kapitan^{1,2} *1. Computer Systems, Dal'nevostocnyj federal'nyj universitet, Vladivostok, Russian Federation; 2. Institut prikladnoj matematiki DVO RAN, Vladivostok, Russian Federation*
- D1-14. The Effect of x-ray Illumination on Magnetic Domain Memory in [Co/Pd] / IrMn Multilayers.** C.S. Walker¹, M. Parkes¹, D. Keavney², E. Fullerton³ and K. Chesnel¹ *1. Physics, Brigham Young University, Provo, UT, United States; 2. Argonne National Laboratory Advanced Photon Source, Lemont, IL, United States; 3. Center for Memory and Recording Research, UCSD, San Diego, CA, United States*

MONDAY
EVENING
7:30

LIVE Q&A 4

Session D2

MAGNETIC INTERACTIONS AND STRUCTURES

Kirrily Rule, Chair

Australian Nuclear Science and Technology Organisation, Kirrawee
DC, NSW, Australia

- D2-01. Unveiling Phonons in a Molecular Qubit With Four-Dimensional Inelastic Neutron Scattering and Density Functional Theory.** E. Garlatti^{1,2}, L. Tesi^{3,4}, A. Lunghi⁵, M. Atzori^{3,6}, D. Voneshen⁷, P. Santini^{1,2}, S. Sanvito⁵, T. Guidi⁷, R. Sessoli^{3,2} and S. Carretta^{1,2} *1. Department of Mathematical, Physical and Computer Sciences, Università degli Studi di Parma, Parma, Italy; 2. Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Firenze, Italy; 3. Department of Chemistry U. Schiff, Università degli Studi di Firenze, Firenze, Italy; 4. Institute of Physical Chemistry, Universität Stuttgart, Stuttgart, Germany; 5. School of Physics, CRANN and AMBER, University of Dublin Trinity College, Dublin, Ireland; 6. Laboratoire National des Champs Magnétiques Intenses, Grenoble, France; 7. ISIS Neutron and Muon Source, Science and Technology Facilities Council, Didcot, United Kingdom*

- D2-02. Molecular Nanomagnets as Qubits With Embedded Quantum-Error Correction.** *A. Chiesa*^{1,2}, *E. Macaluso*¹, *F. Petiziol*^{1,2}, *S. Wimberger*^{1,3}, *P. Santini*^{1,2} and *S. Carretta*^{1,2}
1. Universita degli Studi di Parma, Parma, Italy; 2. UdR Parma, INSTM, Parma, Italy; 3. Istituto Nazionale di Fisica Nucleare Sezione di Trieste, Sezione Milano Bicocca, Gruppo Collegato di Parma, Italy
- D2-03. A Heterometallic [LnLn'Ln] Lanthanide Complex as a Qubit With Embedded Quantum Error Correction.** *E. Macaluso*^{3,4}, *M. Rubin*^{1,2}, *D. Aguilà*^{5,6}, *A. Chiesa*^{3,4}, *L. Barrios*^{5,6}, *J. Martínez*^{1,2}, *P. Alonso*^{1,2}, *O. Roubeau*^{1,2}, *F. Luis*^{1,2}, *G. Aromi*^{5,6} and *S. Carretta*^{3,4}
1. Instituto de Ciencia de Materiales de Aragón (ICMA), CSIC and Universidad de Zaragoza, Zaragoza, Spain; 2. Departament de Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain; 3. Dipartimento di Scienze Matematiche, Fisiche e Informatiche, Università degli Studi di Parma, Parma, Italy; 4. UdR Parma, INSTM, Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Parma, Italy; 5. Departament de Química Inorgànica, Universitat de Barcelona, Barcelona, Spain; 6. Institute of Nanoscience and Nanotechnology of the University of Barcelona (IN2UB), Barcelona, Spain
- D2-04. Observation of a Superparamagnetic Breakdown in Gadolinium Chloride Filled Double-Walled Carbon Nanotubes.** *S. Ncube*¹, *C. Coleman*², *E. Flahaut*³, *S. Bhattacharyya*², *A. Prinsloo*¹ and *C. Sheppard*¹
1. Physics, University of Johannesburg, Auckland Park, South Africa; 2. Physics, University of the Witwatersrand, Johannesburg-Braamfontein, South Africa; 3. Materials Science and Engineering, Université Paul Sabatier Toulouse III Faculté de Chirurgie Dentaire, Toulouse, France
- D2-05. Coupling Nanostructured CsNiCr Prussian Blue Analogue to Resonant Microwave Fields.** *A. Ghirri*¹, *T. Mallah*³ and *M. Affronte*^{2,1}
1. Istituto Nanoscienze - Consiglio Nazionale delle Ricerche, Modena, Italy; 2. Dipartimento di Scienze Fisiche, Informatica e Matematica, Università di Modena e Reggio Emilia, Modena, Italy; 3. Institut de Chimie Moléculaire et des Matériaux d'Orsay CNRS, Université Paris Sud, Université Paris Saclay, Orsay, France
- D2-06. Realization of Random Exchange Interactions and Spin on a Square Lattice With Entropy Stabilization Synthesis.** *A.R. Mazza*¹, *E. Skoropata*¹, *T.R. Charlton*¹ and *T.Z. Ward*¹
1. Oak Ridge National Laboratory, Oak Ridge, TN, United States
- D2-07. Withdrawn**
- D2-08. Orbital Magnetization in Magnetic Neutron Scattering.** *H. Chen*^{1,2}
1. Physics, Colorado State University, Fort Collins, CO, United States; 2. School of Advanced Materials Discovery, Colorado State University, Fort Collins, CO, United States
- D2-09. Antiferromagnetic Fluctuations in One-Dimensional Hubbard Model.** *V. Janiš*¹, *A. Klíč*¹ and *J. Yan*¹
1. Institute of Physics, The Czech Academy of Sciences, Praha, Czechia

- D2-10. Theoretical Framework for Calculating Heisenberg Exchange and Dzyaloshinskii-Moriya Interaction in Correlated Magnetic Materials With Significant Spin-Orbit Coupling.** *V. Borisov*¹, *Y. Kvashnin*¹, *D. Thonig*², *P. Thunström*¹, *M. Pereiro*¹, *A. Bergman*¹, *E. Sjöqvist*¹, *A. Delin*^{1,3}, *L. Nordström*¹ and *O. Eriksson*^{1,2} *1. Department of Physics and Astronomy, Uppsala University, Box 516, SE-75120 Uppsala, Sweden; 2. School of Science and Technology, Örebro University, SE-70182 Örebro, Sweden; 3. Department of Applied Physics, School of Engineering Sciences, KTH Royal Institute of Technology, Electrum 229, SE-16440 Kista, Sweden*
- D2-11. Atomic Cooperation in Enhancing Magnetism: (Fe, Cu)-Doped CeCo₅.** *R. Choudhary*¹ and *D. Paudyal*¹ *1. Iowa State University, Ames Laboratory, Ames, IA, United States*
- D2-12. Withdrawn**
- D2-13. Is it Time to Sideline the Renowned Heisenberg Hamiltonian?** *N. Bykovetz*¹ *1. Physics, Temple University, Philadelphia, PA, United States*
- D2-14. Helimagnetic Correlations Close to the Quantum Critical Points of MnSi Under Mechanical and Chemical Pressure. (Invited)** *C. Pappas*¹, *A.O. Leonov*², *L.J. Bannenberg*¹, *R. Sadykov*³, *R.M. Dalgliesh*⁴, *C. Goodway*⁴, *D.L. Schlagel*⁵, *T.A. Lograsso*⁵, *E. Lelièvre-Berna*⁶, *P. Falus*⁶, *P. Fouquet*⁶, *T. Wolf*⁷ and *F. Weber*⁷ *1. Technische Universiteit Delft Faculteit Technische Natuurwetenschappen, Delft, Netherlands; 2. Chiral Research Center, Hiroshima Daigaku, Higashihiroshima, Japan; 3. Institut adernyh issledovanij RAN, Moskva, Russian Federation; 4. ISIS, Rutherford Appleton Laboratory, Didcot, United Kingdom; 5. Ames Laboratory, Iowa State University, Ames, IA, United States; 6. Institut Laue-Langevin, Grenoble, France; 7. Karlsruher Institut für Technologie, Karlsruhe, Germany*
- D2-15. Withdrawn**
- D2-16. Ab Initio Study of Magnetocrystalline Anisotropy in Antiferromagnetic Fe₂As.** *K. Kang*¹, *K. Yang*², *D. Cahill*¹ and *A. Schleife*¹ *1. Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign College of Engineering, Urbana, IL, United States; 2. Department of Physics, University of Illinois at Urbana-Champaign College of Engineering, Urbana, IL, United States*

Session D3
APPLIED AND POWER MAGNETICS
(Poster Session)

Christopher Olson, Chair
NVE Corporation, Eden Prairie, MN, United States

- D3-01. Cryogenic Motor With Two Radial AMBs in Liquid Nitrogen.** *M. Komori¹, H. Kato¹, K. Asami¹ and N. Sakai¹*
1. Electrical and Electronic Engineering, Kyushu Institute of Technology, Kitakyushu, Japan
- D3-02. Withdrawn**
- D3-03. Detailed Analytical Technique for Characteristic Analysis of Actively Shielded Superconducting Machine.** *K. Shin¹, T. Bang², H. Cho², J. Choi² and K.S. Haran³*
1. Chonnam National University, Yeosu, The Republic of Korea; 2. Chungnam National University, Daejeon, The Republic of Korea; 3. University of Illinois at Urbana-Champaign, Urbana, IL, United States
- D3-04. Analysis and Comparison of Magnetic Planetary Gear With Halbach Permanent Magnet Arrays.** *L. Quan¹, K. Zhang¹, Y. Du¹ and X. Zhu¹*
1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China
- D3-05. An Improved Jiles-Atherton Hysteresis Model With a Sixth Parameter to Represent the Frequency-Dependent Characteristics.** *S. He¹, J. Li¹ and J. Zhu²*
1. electrical engineering, xian jiaotong university, XIAN, China; 2. School of Electrical and Information Engineering, University of Sydney, Sydney, NSW, Australia
- D3-06. Withdrawn**
- D3-07. A Study on Leakage Magnetic Field Reduction Configuration for High Power Contactless Power Transfer for Industrial Moving Systems.** *T. Abe¹, M. Yokosawa¹, S. Miyahara¹, f. sato¹, H. Matsuki² and K. Inada³*
1. Electrical Engineering, Tohoku gakuin University, Tagajo, Japan; 2. Tohoku University, Sendai, Japan; 3. NITTOKU Co., Ltd., Saitama, Japan
- D3-08. Development of a Position-Based Precise Magnetic Torque and Force Generation Method Using a Triad of Electromagnetic Coils for Biomedical Magnetic Robot Applications.** *H. Lee¹, B. Kim¹, J. Shin¹ and S. Jeon¹*
1. Kongju National University, Gongju, The Republic of Korea

D3-09. Magnetization and Thickness Dependent Microwave Attenuation Behavior of Ferrite-PANI Composites and Embedded Composite-Fabrics Prepared by in-Situ Polymerization. *S. Kumar*¹, *V. Verma*² and *R. Walia*³
1. Department of Physics and Astrophysics, University of Delhi, New Delhi, India; 2. Department of Physics, Hindu College, University of Delhi, New Delhi, India; 3. Department of Physics, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur, India

D3-10. Construction of Wireless Power Transfer System Assuming Drone Operation and Examination of Booster Coil Size. *T. Sawa*¹, *f. sato*¹, *S. Miyahara*¹, *H. Matsuki*² and *S. Sasaki*³
1. Division of Engineering, Program in Electrical Engineering, Tohoku Gakuin University, Tagajo, Japan; 2. Tohoku University, Sendai, Japan; 3. Hikaridenshi Corporation, Osaki, Japan

MONDAY
EVENING
7:30

LIVE Q&A 4

Session D4
HARD MAGNETIC MATERIALS: NANOSTRUCTURES
AND OTHERS
(Poster Session)

Bin Ma, Chair
University of Minnesota, Minneapolis, MN, United States

D4-01. Magnetic Properties of Ternary Fe₄₉Ni₄₉X₂ (X = Ti, Al) Alloys After Severe Plastic Deformation. *M.N. Ulyanov*^{1,2}, *S.V. Taskaev*², *M.Y. Bogush*² and *M.A. Gavrilova*² *1. Immanuel Kant Baltic Federal University, Baltijskij federal'nyj universitet imeni Immanuila Kanta, Kaliningrad, Russian Federation; 2. Chelyabinsk State University, Chelyabinsk, Russian Federation*

D4-02. Structural and Magnetic Properties of Iodide-Mediated Chemically Synthesized FePt₃ Nanoparticles. *V. Deepchand*¹, *V. Tzitzios*² and *G.C. Hadjipanayis*¹ *1. Physics and Astronomy, University of Delaware, Newark, DE, United States; 2. Institute of Nanoscience and Nanotechnology National Centre for Scientific Research Demokritos, Athens, Greece*

D4-03. Withdrawn

D4-04. Critical Particle Size of α'' -Fe₁₆N₂ Nanoparticles Prepared by Low-Temperature Nitriding. *B. Ma*¹, *J. Liu*¹, *G. Guo*¹ and *J. Wang*¹ *1. University of Minnesota, Minneapolis, MN, United States*

D4-05. Magnetocrystalline Anisotropy of Fe₁₆N₂ Under Various DFT Approaches. *P. Stoeckl*¹, *P. Swatek*² and *J. Wang*²
1. Department of Physics, University of Minnesota Twin Cities, Minneapolis, MN, United States; 2. Department of Electrical and Computer Engineering, University of Minnesota Twin Cities, Minneapolis, MN, United States

D4-06. Withdrawn

D4-07. Size-Dependent Magnetic Properties of Barium Hexaferrite Platelets Synthesized Using a Salt Assisted Sol-Gel Technique. *N. Joseph*¹ and *S. Thomas*¹ *1. Department of Physics, Cochin University of Science and Technology, Kochi, India*

D4-08. Local Inspection of Magnetic Properties in GdMnIn by Measuring Hyperfine Interactions. *G. Cabrera-Pasca*¹, *J.F. Magno*¹, *W. Ferreira*², *A.C. Campos*², *B. Bosch-Santos*³, *T.S. Sales*², *L.F. Pereira*², *A. Burimova*², *R.N. Saxena*², *R.S. Freitas*⁴ and *A.W. Carbonari*² *1. Faculdade de Ciências Exatas e Tecnologia (FACET), Universidade Federal do Para, Abaetetuba, Brazil; 2. CERPQ, Instituto de Pesquisas Energeticas e Nucleares - IPEN-CNEN/SP, Sao Paulo, Brazil; 3. Material Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, United States; 4. Instituto de Física, Universidade de Sao Paulo, Sao Paulo, Brazil*

D4-09. Crystallographic Texture and Magnetic Anisotropy of CeCo₅ Nanomagnets With Functional Gradient Prepared via a Simple Melt-Spinning Route. *L. Zha*¹, *F. Wang*¹, *Z. Lin*¹ and *J. Yang*¹ *1. Department of Physics, Peking University, Beijing, China*

D4-10. First-Principles Prediction of the Enhanced Uniaxial Magnetic Anisotropy and Thermal Stability in α'' -Fe₁₆N₂. *T. Ochirkhuyag*¹, *S. Cheol Hong*² and *D. Odkhuu*¹ *1. Department of Physics, Incheon National University, Incheon, The Republic of Korea; 2. Department of Physics, University of Ulsan, Ulsan, The Republic of Korea*

D4-11. Improved Stability and Magnetic Anisotropy in L1₀-FeNi by Interstitial Doping: a First-Principles Prediction. *T. Dorjsuren*¹, *S. Cheol Hong*² and *D. Odkhuu*¹ *1. Department of Physics, Incheon National University, Incheon, The Republic of Korea; 2. Department of Physics, University of Ulsan, Ulsan, The Republic of Korea*

D4-12. Artificially Produced Rare Earth Free L1₀-FeNi Phase Through Annealing of the FeNiPC Amorphous Alloy. *J. Han*¹ and *H.C. Yim*¹ *1. Physics, Sookmyung Women's University, Yongsan-gu, The Republic of Korea*

D4-13. Magnetic Properties of (Sm,Zr)Fe₅ Alloys and Their Nitrides. *T. Saito*¹ *1. Chiba Institute of Technology, Narashino, Japan*

D4-14. In-Situ Crystallization and Magnetic Measurement of Hexaferrite Glass-Ceramics. *A.J. Lere-Adams*¹, *M. Ahmadzadeh*¹, *N. Smith-Gray*¹ and *J. McCloy*¹ *1. Washington State University, Pullman, WA, United States*

Session S1

WEYL SEMIMETALS FOR SPINTRONICS

Axel Hoffmann, Chair

University of Illinois at Urbana-Champaign, Urbana, IL, United States

8:00

- S1-01. Fermi-arc Diversity on Surface Terminations of the Magnetic Weyl Semimetal $\text{Co}_3\text{Sn}_2\text{S}_2$. (Invited) N. Avraham¹, N. Morali¹, R. Batabyal¹, P. Kumar Nag¹, E. Liu², Q. Xu², Y. Sun², B. yan¹, C. Felser² and H. Beidenkopf¹** *1. Condensed matter physics, The Weizmann Institute of Science, Rehovot, Israel; 2. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

8:36

- S1-02. Spin-to-Charge Conversion in Magnetic Weyl Semimetals. (Invited) S. Zhang^{1,3}, A. Burkov², I. Martin¹ and O. Heinonen¹** *1. Argonne National Laboratory Materials Science Division, Lemont, IL, United States; 2. Department of Physics and Astronomy, University of Waterloo, Waterloo, ON, Canada; 3. Department of Physics, Case Western Reserve University, Cleveland, OH, United States*

9:12

- S1-03. Evidence for Pseudogravitational Fields in Antiferromagnetic FeRh. (Invited) J. Sklenar¹, J.S. Shim², H. Saglam³, J. Oh², A. Hoffmann², B. Bradlyn², N. Mason² and M. Gilbert²** *1. Wayne State University, Detroit, MI, United States; 2. University of Illinois at Urbana-Champaign, Urbana, IL, United States; 3. Yale University, New Haven, CT, United States*

9:48

- S1-04. Large and Robust Charge-to-Spin Conversion in Sputtered Disordered WTe_x . (Invited) X. Li¹, P. Li¹, V.D. Hou², M. DC¹, C. Nien², F. Xue¹, D. Yi¹, C. Bi¹, C. Lee², S. Lin², W. Tsai², Y. Suzuki¹ and S. Wang¹** *1. Stanford University, Stanford, CA, United States; 2. Taiwan Semiconductor Manufacturing Co Ltd, Hsinchu, Taiwan*

10:24

- S1-05. Electrical Manipulation of a Topological Weyl Antiferromagnet. (Invited) S. Nakatsuji^{1,2}** *1. Department of Physics, University of Tokyo, Tokyo, Japan; 2. Trans-scale Quantum Science Institute, University of Tokyo, Tokyo, Japan*

Session S2
**ADVANCED STATIC AND DYNAMIC SPIN DEPTH
PROFILING**

Timo Kuschel, Co-Chair
Bielefeld University, Bielefeld, Germany
Christoph Klewe, Co-Chair
Lawrence Berkeley National Laboratory, Berkeley, CA, United States

9:00

- S2-01. Surface Versus Bulk Characterization of 3D Skyrmion Lattices in Chiral Magnets. (Invited) G. van der Laan¹, S. Zhang² and T. Hesjedal³** *1. Diamond Light Source Ltd, Didcot, United Kingdom; 2. ShanghaiTech University, Shanghai, China; 3. University of Oxford, Oxford, United Kingdom*

9:36

- S2-02. Coherent AC Spin Transport Across Antiferromagnetic Insulators Detected by Element-Resolved and Time-Resolved x-ray Magnetic Dichroism. (Invited) Z.Q. Qiu¹** *1. Physics, Univ. of California at Berkeley, Berkeley, CA, United States*

10:12

- S2-03. Scaling of Proximity Induced Magnetism in Pt With Magnetism of Ferromagnet Using Pt/CoFeTaB/Pt. (Invited) O.A. Inyang^{1,2}, L. Bouchenoire^{3,4}, M. Tokac¹, R. Rowan-Robinson¹, B. Nicholson¹, C. Kinane⁵ and A. Hindmarch¹** *1. Department of Physics, Durham University, Durham, United Kingdom; 2. Department of Physics, Akwa Ibom State University, Mkpato Enin, Nigeria; 3. XMaS beam line, ESRF, Grenoble, France; 4. Department of Physics, University of Liverpool, Liverpool, United Kingdom; 5. ISIS Neutron Facility, Rutherford Appleton Laboratory, Didcot, United Kingdom*

10:48

- S2-04. Probing Quantum Materials and Devices With Next-Generation Neutron Reflectometry. (Invited) A.J. Grutter¹** *1. NIST Center for Neutron Research, Gaithersburg, MD, United States*

11:24

- S2-05. Enabling Atomic Resolution in Electron Magnetic Circular Dichroism (EMCD) Measurements. (Invited) J. Ruzs¹, D. Negi², E. Rotunno³, P. Zeiger¹, L. Jones⁴, M. Zanfagnini³, J. Idrobo⁵, V. Grillo³ and P. van Aken²** *1. Department of Physics and Astronomy, Uppsala Universitet, Uppsala, Sweden; 2. Max Planck Institute for Solid State Research, Stuttgart, Germany; 3. CNR-NANO, Modena, Italy; 4. University of Dublin Trinity College, Dublin, Ireland; 5. Oak Ridge National Laboratory, Oak Ridge, TN, United States*

Session E1
HALF-METALLIC MATERIALS

Peter Wadley, Co-Chair
University of Nottingham, Nottingham, United Kingdom

Arjun Pathak, Co-Chair
Ames National Laboratory, Ames, IA, United States

- E1-01. Magneto-Thermal Transport in Weyl Semimetal Co_2MnGa Thin Films. (Invited)** H. Reichlova¹, G. Park³, P. Ritzinger¹, A. Markou², R. Schlitz¹, M. Lammel³, K. Vyborny⁴, D. Kriegner^{2,4}, P. Swekis², J. Noky², Y. Sun², J. Gayles², A. Thomas³, C. Felser² and S. Goennenwein¹ 1. Technische Universität Dresden, Dresden, Germany; 2. MPI Dresden, Dresden, Germany; 3. Leibniz-Institut für Festkörper- und Werkstofforschung Dresden eV, Dresden, Germany; 4. FZU, Academy of Science, Prague, Czechia
- E1-02. Investigation of non-Collinearity in $\text{Mn}_2\text{Ru}_x\text{Ga}$ Compensated Ferrimagnetic Half-Metallic Thin Films.** K.E. Siewierska¹, D. Betto², N. Teichert¹, Z. Gercsi¹, G. Atcheson¹, N.B. Brookes³, M. Coey¹ and K. Rode¹ 1. Physics, University of Dublin Trinity College, Dublin, Ireland; 2. Max Planck Institute for Solid State Research, Stuttgart, Germany; 3. ESRF, Grenoble, France
- E1-03. Possible Half-Metallic Behavior of $\text{Co}_{2-x}\text{Cr}_x\text{FeGe}$ Heusler Alloys: Theory and Experiment.** R. Mahat¹, S. KC¹, D. Wines², S. Regmi¹, U. Karki¹, F. Ersan^{2,3}, J. Law⁴, C. Ataca², V. Franco⁴, A. Gupta⁵ and P. LeClair¹ 1. Physics and Astronomy, The University of Alabama, Tuscaloosa, AL, United States; 2. Physics, University of Maryland Baltimore County, Baltimore, MD, United States; 3. Physics, Aydin Adnan Menderes University, Aydin, Turkey; 4. Dpto. Física de la Materia Condensada ICMSE-CSIC, Universidad de Sevilla, Sevilla, Spain; 5. Chemistry and Biochemistry, The University of Alabama, Tuscaloosa, AL, United States
- E1-04. Manipulation of Gilbert Damping in Ultrathin Half-Metallic $\text{Co}_2\text{FeAl}_{1+x}$ by Composition-Deficiency-Compensation.** Y. Xu¹, Q. Gao¹, X. Lu¹ and L. He¹ 1. York-Nanjing Joint Center, Nanjing University, Nanjing, China
- E1-05. Prediction of Structural, Electronic and Magnetic Properties of Full Heusler Alloys Ir_2YSi (Y= Sc, Ti, v, Cr, Mn, Fe, Co & Ni) via First -Principles Calculation.** R. Prakash¹ and G. Kalpana¹ 1. Physics, Anna University Chennai, Chennai, India
- E1-06. Interplay Between Mn, Fe, and Co in the Co_2FeGe Alloy to Design Novel Single-Phase Compounds With Potential Spintronic Application.** S. KC¹, R. Mahat¹, S. Budhathoki¹, J. Law², V. Franco², W.H. Butler¹, A. Gupta³ and P. LeClair¹ 1. Physics and Astronomy, The University of Alabama, Tuscaloosa, AL, United States; 2. Departamento de Física de la Materia Condensada ICMSE-CSIC, Universidad de Sevilla, Sevilla, Spain; 3. Department of Chemistry and Biochemistry, The University of Alabama, Tuscaloosa, AL, United States

- E1-07. Direct Light-Induced Spin Transfer Between Different Elements in a Spintronic Heusler Material via Femtosecond Laser Excitation. (Invited)** P.M. Tengdin^{2,1}, C. Gentry², D. Zusin², M. Gerrity², L. Hellbrück³, M. Hofherr³, J. M. Shaw⁴, Y. Kvashnin⁵, E.K. Delczeg-Czirjak⁵, H. Nembach⁴, T. Silva⁴, S. Mathias³, M. Aeschlimann³, H. Kapteyn², D. Thonig⁵, K. Kompouras⁵, O. Eriksson⁵ and M. Murnane² 1. Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland; 2. University of Colorado Boulder, Boulder, CO, United States; 3. Research Center OPTIMAS, University of Kaiserslautern, Kaiserslautern, Germany; 4. Quantum Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO, United States; 5. Uppsala Universitet, Uppsala, Sweden
- E1-08. Probing Dynamic Magnetization in Ferrimagnetic Sr₂FeMoO₆ With a Lock-in Broadband Spectrometer.** R. Das¹, U. Chaudhuri¹ and R. Mahendiran¹ 1. Physics, National University of Singapore, Singapore, Singapore
- E1-09. Creating Half-Metallicity in two-Dimensional Magnetolectric Materials.** C. Gong¹, S. Gong^{2,3}, A. Rappe⁴ and X. Zhang^{5,6} 1. University of Maryland, College Park, College Park, MD, United States; 2. East China Normal University, Shanghai, China; 3. Fudan University, Shanghai, China; 4. University of Pennsylvania, Philadelphia, PA, United States; 5. University of California, Berkeley, Berkeley, CA, United States; 6. University of Hong Kong, Hong Kong, China
- E1-10. Anomalous Nernst Effect in Co₂MnSi Thin Films.** C. Cox¹, A. Caruana², m. cropper¹ and K. Morrison¹ 1. Physics, Loughborough University, Loughborough, United Kingdom; 2. ISIS Neutron and Muon Source, Didcot, United Kingdom
- E1-11. Scaling of Quadratic and Linear Magneto-Optic Kerr Effect Spectra With L₂₁ Ordering of Co₂MnSi Heusler Compound.** R. Silber^{2,1}, D. Král³, O. Stejskal³, T. Kubota⁴, Y. Ando⁶, J. Pištora^{2,1}, M. Veis³, J. Hamrle³ and T. Kusche⁵ 1. IT4Innovations, VSB-Technical University of Ostrava, Ostrava, Czechia; 2. Nanotechnology Centre, VSB-Technical University of Ostrava, Ostrava, Czechia; 3. Faculty of Mathematics and Physics, Charles University, Praha, Czechia; 4. Institute for Materials Research, Tohoku University, Sendai, Japan; 5. Center for Spinelectronic Materials and Devices, Department of Physics, Bielefeld University, Bielefeld, Germany; 6. Department of Applied Physics, Tohoku University, Sendai, Japan
- E1-12. Giant Enhancement of Perpendicular Magnetic Anisotropy and Induced Quantum Anomalous Hall Effect in the Graphene/NiI₂ Heterostructure via Tuning the van der Waals Interlayer Distance.** Q. Cui^{1,2}, J. liang¹ and H. Yang¹ 1. Ningbo Institute of Materials Technology and Engineering, Ningbo, China; 2. University of Nottingham Ningbo China, Ningbo, China
- E1-13. Co₂Mn-Based Heusler Compounds in Thin Films for Spintronic Applications.** C. Guillemard^{1,2}, S. Petit-Watelot¹, P. Le Fevre², F. Bertran² and S. Andrieu¹ 1. institut jean lamour, universite de lorraine, Nancy, France; 2. synchrotron SOLEIL, Gif-sur-Yvette, France

Session E2
NANOPARTICLE AND NANOWIRE ARRAYS AND
SELF-ASSEMBLY

Dedalo Sanz-Hernandez, Chair
Unité Mixte de Physique CNRS/Thales, Palaiseau, France

- E2-01. Multi-Shaped Individual Nanoparticles Investigated by NanoSQUID Magnetometry at Variable Temperature.** *(Invited)* M. Martinez-Perez^{1,2}, J. Pablo Navarro¹, B. Mueller^{3,4}, J. Lin^{3,4}, R. Kleiner^{3,4}, C. Magen¹, J. de Teresa¹, J. Sese¹ and D. Koelle^{3,4} *1. ICMA, CSIC - Universidad de Zaragoza, Zaragoza, Spain; 2. ARAID foundation, Zaragoza, Spain; 3. Physikalisches Institut, Universität Tübingen, Tübingen, Germany; 4. LISA+, Universität Tübingen, Tübingen, Germany*
- E2-02. Spin Ordering in Bi-Magnetic (Core / Shell) Nanoparticles With Varying Anisotropy.** C. Kons¹, K.L. Krycka², J.A. Borchers², N. Ntallis³, M. Pereiro³, E. Sjöqvist³, A. Delin⁴, D. Thonig⁵, O. Eriksson³, A. Bergman³, J. Robles¹, M. Phan¹, H. Srikanth¹ and D.A. Arena¹ *1. Univ. of South Florida, Tampa, FL, United States; 2. National Institute of Standards and Technology, Gaithersburg, MD, United States; 3. Uppsala University, Uppsala, Sweden; 4. KTH Royal Institute of Technology, Stockholm, Sweden; 5. Örebro Universitet, Örebro, Sweden*
- E2-03. Quantitative Understanding of Superparamagnetism in Ni Nanoparticle Assemblies.** B. Das¹, J. Batley¹, C. Korostynski¹, M. Nguyen¹, I. Kamboj¹, E.S. Aydil^{1,2} and C. Leighton¹ *1. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, United States; 2. Department of Chemical and Biomolecular Engineering, New York University Tandon School of Engineering, Brooklyn, NY, United States*
- E2-04. Magnetic Correlations and Time Fluctuations in Assemblies of Fe₃O₄ Nanoparticles.** K. Chesnel¹, J. Rackham¹, D. McPhearson¹, B. Newbold¹, D. Griner¹, M. Transtrum¹, R. Harrison¹, A. Reid² and J. Kortright³ *1. Brigham Young University, Provo, UT, United States; 2. SLAC, SIMES, Menlo Park, CA, United States; 3. E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States*
- E2-05. Modeling Magnetic Correlations in Magnetite Nanoparticle Assemblies Using x-ray Magnetic Scattering Data.** J. Rackham¹, B. Newbold¹, S. Kotter¹, D. Smith¹, D. Griner¹, A. Reid³, R. Harrison², M. Transtrum¹ and K. Chesnel¹ *1. Physics and Astronomy, Brigham Young University, Provo, UT, United States; 2. Chemistry and Biochemistry, Brigham Young University, Provo, UT, United States; 3. SIMES, SLAC National Accelerator Laboratory, Menlo Park, CA, United States*
- E2-06. Berry Curvature and Topological Hall Effect in Quasi-Coherent Nanoparticles.** A. Ullah¹, B. Balasubramanian¹, R. Pahari¹, D.J. Sellmyer¹ and R. Skomski¹ *1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE, United States*

- E2-07. Grain Growth Study in Sequentially-Sputtered Co-HfO₂ Granular Films.** A.K. Toh¹ and V. Ng¹ *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*
- E2-08. Fabrication of Thick and Stable Nanoparticle Films via Electrophoretic Deposition on Substrates Functionalized With Chelating Agents.** S.C. Mills¹, N.E. Starr¹, N.J. Bohannon¹ and J. Andrew¹ *1. University of Florida, Gainesville, FL, United States*
- E2-09. Withdrawn**
- E2-10. Atomic-Level Analysis of Oxidation Pathways in Fe/Fe Oxide Magnetic Nanoparticles.** T. Bird¹, S. Aktas^{2,1}, S. Alotaibi¹, L. Lari^{3,1}, D. Kepaptsoglou^{4,1}, R. Kröger¹ and A. Pratt¹ *1. Department of Physics, University of York, York, United Kingdom; 2. Mechanical Engineering, Giresun Universitesi, Giresun, Turkey; 3. York JEOL Nanocentre, University of York, York, United Kingdom; 4. SuperSTEM, Warrington, United Kingdom*
- E2-11. Withdrawn**
- E2-12. Size-Dependent Magnetism and Skyrmionic Properties in CoSi Nanoclusters.** R. Pahari¹, B. Balasubramanian¹, P. Manchanda², A. Ullah¹, P. Dev², R. Skomski¹ and D.J. Sellmyer¹ *1. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE, United States; 2. Department of Physics and Astronomy, Howard University, Washington DC, DC, United States*
- E2-13. Colossal Heating Efficiency for Nearly Zero Magnetostrictive Amorphous Microwires via Eddy Currents at Radiofrequency Fields.** I. Morales¹, D. Archilla¹, P. de la Presa^{1,3}, A. Hernando^{1,2} and P. Marin^{1,3} *1. Instituto de Magnetismo Aplicado, Universidad Complutense de Madrid, Madrid, Spain; 2. Nanoscience, Instituto Madrilenio de Estudios Avanzados, Madrid, Spain; 3. Materials Physics, Universidad Complutense de Madrid, Madrid, Spain*
- E2-14. Insights on the Heating Characteristics of Mn and Co-Doped Fe₃O₄.** S. J¹ and R.J. Joseyphus¹ *1. Department of Physics, National Institute of Technology Tiruchirappalli, Tiruchirappalli, India*

Session E3

NEW PROBING TECHNIQUES FOR SPIN TORQUES

Shawn Pollard, Chair

University of Memphis, Memphis, TN, United States

- E3-01. Real-Time Measurements of Field-Free Spin-Orbit Torque Switching in 3-Terminal Magnetic Tunnel Junctions.** *(Invited)* V. Krizakova¹, E. Grimaldi¹, G. Sala¹, F. Yasin², S. Couet², G.S. Kar², K. Garello² and P. Gambardella¹ *1. ETH Zurich, Zurich, Switzerland; 2. imec, Leuven, Belgium*
- E3-02. All-Optical Probe of Magnetization Precession Frequency Modulated by Spin-Orbit Torque.** K. Ishibashi^{1,2}, S. Iihama^{3,4}, Y. Takeuchi⁵, K. Furuya⁵, S. Kanai^{5,4}, S. Fukami^{5,4} and S. Mizukami^{2,4} *1. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 3. Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Sendai, Japan; 4. Center for Spintronics Research Network, Tohoku University, Sendai, Japan; 5. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*
- E3-03. Optical Spin-Torque in FeCo / Pt Bilayer Thin Films.** S. Iihama^{1,2} and S. Mizukami^{3,2} *1. Frontier Research Institute for Interdisciplinary Sciences (FRIS), Tohoku University, Sendai, Japan; 2. Center for Spintronics Research Network (CSRN), Tohoku University, Sendai, Japan; 3. Advanced Institute for Materials Research (AIMR), Tohoku University, Sendai, Japan*
- E3-04. Magneto-Optical Detection of Spin-Orbit Torque Phenomena Using Sagnac Interferometer Microscope.** Z. Huang¹, E. Vetter^{1,2}, Y. Xiong³, W. Zhang³ and D. Sun^{1,4} *1. Department of Physics, North Carolina State University, Raleigh, NC, United States; 2. Department of Materials Science and Engineering, North Carolina State University, Raleigh, NC, United States; 3. Department of Physics, Oakland University, Rochester, MI, United States; 4. Organic and Carbon Electronics Lab (ORaCEL), North Carolina State University, Raleigh, NC, United States*
- E3-05. Sensing Stray Fields From Spin-Hall-Controlled Magnetic Nanowires With Nitrogen-Vacancy Centers in Diamond.** *(Invited)* J. Sankey¹, A. Solyom¹, M. Caouette-Mansour¹, B. Ruffolo¹ and L. Childress¹ *1. Physics, McGill University, Montreal, QC, Canada*
- E3-06. Withdrawn**
- E3-07. Spin-Orbit Torque in a Low Moment Ferrimagnet at High Current Density.** A. Jha¹, S. Lenne¹, G. Atcheson¹, K. Rode¹ and P.S. Stamenov¹ *1. School of Physics and CRANN, University of Dublin Trinity College, Dublin, Ireland*

- E3-08. Helium Ion Microscopy for Reduced Spin Orbit Torque Switching Currents.** P. Dunne^{1,2}, C. Fowley³, G. Hlawacek³, J. Kurian¹, G. Atcheson⁴, S. Colis¹, N. Teichert⁴, B. Kundys¹, M. Venkatesan⁴, J. Lindner³, A. Deac³, T.M. Hermans², M. Coey⁴ and B. Doudin¹ *1. Université de Strasbourg, CNRS, IPCMS UMR 7504, Strasbourg, France; 2. Université de Strasbourg, CNRS, ISIS, Strasbourg, France; 3. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden, Dresden, Germany; 4. AMBER and School of Physics, Trinity College, Dublin, Ireland*

TUESDAY
MORNING
12:00

LIVE Q&A 5

Session E4
SPIN WAVE I: SPATIAL AND NONLINEAR BEHAVIOR

Stefano Bonetti, Co-Chair
Stockholm University, Stockholm, Sweden
Giovanni Finocchio, Co-Chair
University of Messina, Messina, Italy

- E4-01. Magnetization Dynamics in Topological Spin Structures Revealed by Diffractive Ferromagnetic Resonance (DFMR).** *(Invited)* D. Burn¹, S. Zhang^{3,2}, G. van der Laan¹ and T. Hesjedal² *1. Magnetic Spectroscopy Group, Diamond Light Source, Didcot, United Kingdom; 2. Department of Physics, University of Oxford, Oxford, United Kingdom; 3. ShanghaiTech University School of Physical Science and Technology, Shanghai, China*
- E4-02. Demonstration of k -Vector Selective Microscopy for Nanoscale Mapping of Higher Order Spin Wave Modes.** N. Träger¹, P. Gruszecki^{2,3}, F. Lisiecki³, F. Gross¹, J. Förster¹, M. Weigand⁴, H. Glowinski³, P. Kuswik³, J. Dubowik³, M. Krawczyk² and J. Gräfe¹ *1. Modern Magnetic Systems, Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Faculty of Physics, Adam Mickiewicz University, Poznan, Poland; 3. Institute of Molecular Physics, Polish Academy of Sciences, Poznan, Poland; 4. Helmholtz-Zentrum Berlin, Berlin, Germany*
- E4-03. Non-Standing Spin-Waves in Confined Micron-Sized Structures Imaged With Time-Resolved STXM.** S. Pile¹, T. Schaffers^{1,2}, S. Stienen³, M. Buchner¹, S. Wintz⁴, S. Mayr⁵, J. Förster⁴, V. Ney¹, R. Narkowicz³, K. Lenz³, M. Weigand⁶, J. Lindner³ and A. Ney¹ *1. Johannes Kepler Universität Linz, Linz, Austria; 2. Aalto-yliopisto Perustieteiden korkeakoulu, Aalto, Finland; 3. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 4. Max-Planck-Institut für Intelligente Systeme, Stuttgart, Germany; 5. Paul Scherrer Institut, Villigen, Switzerland; 6. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany*

- E4-04. Nonreciprocal Behavior in Ferromagnets With Spatially Varying Exchange.** *R. Macedo*³, *A.S. Kudinoor*^{1,2}, *K. Livesey*^{4,1} and *R. Camley*¹ *1. Physics, University of Colorado at Colorado Springs, Colorado Springs, CO, United States; 2. Physics, Columbia University, New York, NY, United States; 3. James Watt School of Engineering, University of Glasgow, Glasgow, United Kingdom; 4. School of Mathematical and Physical Sciences, The University of Newcastle, Callaghan, NSW, Australia*
- E4-05. Spatially Resolved Magnon Modes in Kagome Artificial Spin Ice With Topological Defects. (Invited)** *V.S. Bhat*^{1,2}, *S. Watanabe*¹, *K. Baumgaertl*¹ and *D. Grundler*^{1,3} *1. Institute of Materials, Laboratory of Nanoscale Magnetic Materials and Magnonics, School of Engineering, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; 2. International Research Centre MagTop, Institute of Physics, Polish Academy of Sciences, Warsaw, Poland; 3. Institute of Microengineering, Laboratory of Nanoscale Magnetic Materials and Magnonics, School of Engineering, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland*
- E4-06. Nonlocal Stimulation of Three-Magnon Splitting in a Magnetic Vortex.** *L. Körber*^{1,2}, *K. Schultheiss*¹, *T. Hula*^{1,3}, *R.V. Verba*⁴, *J. Fassbender*^{1,2}, *A. Kákay*¹ and *H. Schultheiss*^{1,2} *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Fakultät Physik, Technische Universität Dresden, Dresden, Germany; 3. Institut für Physik, Technische Universität Chemnitz, Chemnitz, Germany; 4. Institute of Magnetism, Kyiv, Ukraine*
- E4-07. Emission and Conversion of Ultra-Short Spin Waves.** *F. Gross*¹, *M. Zelent*³, *N. Träger*¹, *U. Sanli*¹, *R. Sauter*¹, *J. Förster*¹, *M. Weigand*², *K. Keskinbora*¹, *M. Krawczyk*³ and *J. Gräfe*¹ *1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany; 3. Adam Mickiewicz University, Poznan, Poland*
- E4-08. Nonreciprocal Propagation of Spin Waves in a Ni Film Excited Using Shear Strain Component of Rayleigh-Type Surface Acoustic Wave.** *S. Tateno*¹ and *Y. Nozaki*^{1,2} *1. Physics, Keio University, Yokohama, Japan; 2. Center for Spintronics Research Network, Keio University, Yokohama, Japan*
- E4-09. Non-Linearities Induced by Surface Acoustic Waves in Magnetization Dynamics.** *L. Thevenard*^{1,2}, *M. Kraimia*^{3,1}, *P. Kuszewski*^{1,2}, *A. Lemaître*^{4,5}, *F. Margaiilan*^{1,2}, *J. Duquesne*^{1,2} and *C. Gourdon*^{1,2} *1. Institut des Nanosciences de Paris, Sorbonne Université, Paris, France; 2. Centre National de la Recherche Scientifique, Paris, France; 3. LR01ES15 Laboratoire de Physique des Matériaux, Faculté des Sciences de Bizerte, Bizerte, Tunisia; 4. Centre de Nanosciences et de Nanotechnologies, CNRS, Palaiseau, France; 5. Université Paris-Saclay, Palaiseau, France*

- E4-10. Generation and Tuning of a Spin Wave Frequency Comb.** T. Hula¹, L. Flacke^{2,3}, M. Copus⁴, L. Liensberger^{2,3}, K. Schultheiss¹, A. Buzdakov¹, F.J. Gonçalves¹, A. Kákay¹, M. Weiler^{2,3}, R. Camley⁴ and H. Schultheiss¹ *1. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Walther-Meißner-Institute, Bayerische Akademie der Wissenschaften, Garching, Germany; 3. Physik-Department, Technische Universität München, Munich, Germany; 4. Center for Magnetism and Magnetic Nanostructures, University of Colorado, Colorado Springs, CO, United States*
- E4-11. Electrical Spectroscopy of Forward Volume Spin Waves in Perpendicularly Magnetized Materials.** M. Sushruth¹, M.G. Grassi², K. Ait-Oukaci^{3,4}, D. Stoeffler², Y. Henry², D. Lacour³, M. Hehn³, U. Bhaskar¹, M. Bailleul², T. Devolder¹ and J. Adam¹ *1. Universite Paris-Saclay, Saint-Aubin, France; 2. Universite de Strasbourg, Strasbourg, France; 3. Institut Jean Lamour, Nancy, France; 4. Synchrotron SOLEIL, Gif-sur-Yvette, France*
- E4-12. Amplification of Propagating Spin Waves by Rapid Cooling.** M. Schneider¹, D. Breitbach¹, B. Lägell¹, C. Dubs², H. Musiienko-Shmarova¹, D.A. Bozhko⁵, A.A. Serga¹, A.N. Slavin³, V. Tyberkevych³, P. Pirro¹, B. Hillebrands¹ and A. Chumak⁴ *1. Fachbereich Physik and Landesforschungszentrum OPTIMAS, TU Kaiserslautern, Kaiserslautern, Germany; 2. Innovent e.V. Technologieentwicklung, Jena, Germany; 3. Department of Physics, Oakland University, Rochester, MI, United States; 4. Faculty of Physics, University of Vienna, Vienna, Austria; 5. Department of Physics and Energy Science, University of Colorado at Colorado Springs, Colorado Springs, CO, United States*
- E4-13. Investigation of Spin Wave - Skyrmion Interactions for Magnonic Information Processing.** Z. Hu¹, Y. Shao¹, V. Lopez Dominguez¹ and P. Khalili Amiri¹ *1. Northwestern University, Evanston, IL, United States*
- E4-14. Magnon Diffusion Lengths in Bulk and Thin Film Fe₃O₄ for Spin Seebeck Applications.** K. Morrison¹, G. Venkat^{1,2}, C. Cox¹, D. Voneshen³, A. Caruana³, A. Piovano⁴ and m. cropper¹ *1. Physics, Loughborough University, Loughborough, United Kingdom; 2. Materials Science and Engineering, The University of Sheffield, Sheffield, United Kingdom; 3. ISIS Neutron and Muon Source, Didcot, United Kingdom; 4. Institut Laue-Langevin, Grenoble, France*

Session E5
DOMAIN WALLS AND THE DZYALOSHINSKII-MORIYA INTERACTION I
(Poster Session)

Jun-young Kim, Co-Chair
Johannes Gutenberg University of Mainz, Mainz, Germany

Luis Lopez-Diaz, Co-Chair
University of Salamanca, Salamanca, Spain

- E5-01. Ultrafast Domain Wall Propagation due to the Interfacial Dzyaloshinskii-Moriya Interaction.** *D. Mancilla¹, R. Jaeschke-Ubiergo², A. Núñez² and S. Allende¹*
1. Universidad de Santiago de Chile, Santiago de Chile, Chile;
2. Universidad de Chile, Santiago de Chile, Chile
- E5-02. Ta/CoFeB/MgO Analysis for Low Power Nanomagnetic Devices.** *F. Riente², S. Mendisch¹, L. Gnoli², V. Ahrens¹, M. Ruo Roch² and M. Becherer¹* *1. Technische Universitat Munchen, Munchen, Germany; 2. Politecnico di Torino, Torino, Italy*
- E5-03. Phase Transitions Induced by Concentration and Thermodynamic Magnetic Fluctuations in Chiral Ferromagnets Fe_{1-x}Co_xSi.** *A. Povzner¹, A. Volkov¹, T. Nogovitsyna¹ and S. Bessonov¹* *1. Ural'skij federal'nyj universitet imeni pervogo Prezidenta Rossii B N El'cina, Ekaterinburg, Russian Federation*
- E5-04. Withdrawn**
- E5-05. Design of Giant DMI and its Microscopic Origin in Magnetic Bilayers.** *P. Jadaun¹, L.F. Register¹ and S.K. Banerjee¹* *1. Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX, United States*
- E5-06. Density Functional Theory and Machine Learning Aided Design of Novel B20 Alloys.** *P. Balachandran^{1,2}* *1. Materials Science and Engineering, University of Virginia, Charlottesville, VA, United States; 2. Mechanical and Aerospace Engineering, University of Virginia, Charlottesville, VA, United States*
- E5-07. Effect of the Temperature Annealing-Driven Structural Modification on the Interfacial Dzyaloshinskii-Moriya Interaction in Ru/Co/W/Ru Films.** *A. Samardak¹, A. Kolesnikov¹, M. Stebliy¹, A. Gerasimenko², A. Sadovnikov³, S. Nikitov⁴, A. Ognev¹ and A.S. Samardak¹* *1. Far Eastern Federal University, Vladivostok, Russian Federation; 2. Institute of Chemistry, Far Eastern Branch of Russian Academy of Sciences, Vladivostok, Russian Federation; 3. Laboratory "Metamaterials", Saratov State University, Saratov, Russian Federation; 4. Kotel'nikov Institute of Radioengineering and Electronics, Russian Academy of Sciences, Moscow, Russian Federation*

- E5-08. Experimental Correlation of Interfacial Dzyaloshinskii-Moriya Interaction Amplitude and Work Function in Magnetic Multilayers.** *F. Ajejas*¹, *W. Legrand*¹, *Y. Sassi*¹, *S. Collin*¹, *A. Vecchiola*¹, *K. Bouzehouane*¹, *S. Pizzini*², *N. Reyren*¹, *V. Cros*¹ and *A. Fert*¹ *1. Unite Mixte de Physique CNRS/Thales, Palaiseau, France; 2. Institut NEEL, Grenoble, France*
- E5-09. Withdrawn**
- E5-10. Investigation of Interfacial Dzyaloshinskii-Moriya Interaction and Ferromagnetic Resonance of MBE Grown W/Co/Pt Heterostructures.** *S.K. Jena*¹, *R. Islam*², *E. Milinska*¹, *M. Jakubowski*¹, *A. Pietruczik*¹, *R. Minikayev*¹, *W. Paszkowicz*¹, *S. Lewinska*¹, *A. Lynnyk*¹, *R. Puzniak*¹, *I. Sveklo*³, *P. Aleshkevych*¹, *C. Autieri*², *A. Maziewski*³ and *A. Wawro*¹ *1. Institute of Physics, Polish Academy of Sciences, Warsaw, Poland; 2. International Research Centre MagTop, Institute of Physics, Polish Academy of Sciences, Warsaw, Poland; 3. Faculty of Physics, University of Bialystok, Bialystok, Poland*
- E5-11. Withdrawn**
- E5-12. Magneto-Transport Studies in Gd-Fe Thin Films.** *H.N. Mohanty*¹, *A.K. Sahoo*¹, *J.A. Chelvane*² and *J.R. Mohanty*¹ *1. Physics, Nanomagnetism and Microscopy Laboratory, Department of Physics, Indian Institute of Technology Hyderabad, Kandi, Sangareddy 502285, Telangana, India, Hyderabad, India; 2. Defence Metallurgical Research Laboratory, Hyderabad 500058, India, Hyderabad, India*
- E5-13. FORC-Based Study of the Magnetization Reversal in Synthetic Antiferromagnets With the Interfacial Dzyaloshinskii-Moriya Interaction.** *A. Ognev*¹, *A. Kolesnikov*¹, *M. Steblyi*¹, *I. Soldatov*² and *A.S. Samardak*¹ *1. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation; 2. Leibniz Institute for Solid State and Materials Research, Dresden, Germany*
- E5-14. Magnetic Properties of Intercalated Transition Metal Dichalcogenides: $v_{1/3}\text{NbS}_2$ and $\text{Cr}_{1/3}\text{NbS}_2$.** *A. Hall*¹, *D. Mayoh*¹, *S.J. Holt*¹, *M. Lees*¹, *O. Petrenko*¹ and *G. Balakrishnan*¹ *1. Department of Physics, University of Warwick, Coventry, United Kingdom*

Session F1

DMI & PROXIMITY EFFECTS IN THIN FILMS

Andoni Lasheras, Chair

University of the Basque Country (UPV/EHU), Bilbao, Spain

- F1-01. Large Dzyaloshinskii–Moriya Interaction Induced by Chemisorbed Species on Ferromagnets. (Invited) G. Chen¹, A. Mascaraque³, H. Jia², B. Zimmermann², M. Robertson¹, R. Lo Conte^{4,5}, C. Ophus⁶, A. Fernandes Cauduro⁶, M. Hoffmann², M.A. Barrio³, H. Ding⁷, R. Wiesendanger⁵, E.G. Michel⁸, S. Bluegel², A.K. Schmid⁶ and K. Liu^{9,1}**
1. Physics Department, University of California, Davis, Davis, CA, United States; 2. Peter Grünberg Institute, Jülich, Germany; 3. Depto. Física de Materiales, Universidad Complutense de Madrid, Madrid, Spain; 4. Department of Materials Science & Engineering, University of California, Berkeley, Berkeley, CA, United States; 5. Department of Physics, University of Hamburg, Hamburg, Germany; 6. Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 7. Department of Physics, Nanjing University, Nanjing, China; 8. Depto. de Física de la Materia Condensada, Universidad Autónoma de Madrid, Madrid, Spain; 9. Physics Department, Georgetown University, Washington, DC, United States
- F1-02. Temperature Dependence of the Dzyaloshinskii–Moriya Interaction in Ultrathin Films. Y. Zhou¹, R. Mansell¹, S. Valencia², F. Kronast² and S. van Dijken¹**
1. NanoSpin, Department of Applied Physics, Aalto University School of Science, P.O. Box 15100, FI-00076 Aalto, Finland; 2. Helmholtz-Zentrum Berlin für Materialien und Energie, Albert-Einstein Str. 15, 12489, Berlin, Germany
- F1-03. Experimental Observation of Interlayer Dzyaloshinskii–Moriya Interaction in Synthetic Antiferromagnets. A. Fernandez-Pacheco^{2,5}, E.Y. Vedmedenko¹, F. Ummelen³, R. Mansell⁴, M. Cascales Sandoval², N. Jaouen⁶, S. Stanescu⁶, D. Petit⁵ and R. Cowburn⁵**
1. Universitat Hamburg, Hamburg, Germany; 2. University of Glasgow, Glasgow, United Kingdom; 3. Technische Universiteit Eindhoven, Eindhoven, Netherlands; 4. Aalto-yliopisto, Aalto, Finland; 5. University of Cambridge, Cambridge, United Kingdom; 6. Synchrotron SOLEIL, Gif-sur-Yvette, France
- F1-04. Temperature Dependence of the Magnetic Proximity Effect in Magnetic Insulator/Platinum Heterostructures by Polarized Neutron Reflectometry. J. Bauer¹, P. Quarterman², A.J. Grutter², B. Kirby², J.A. Borchers² and C. Ross¹**
1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States; 2. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD, United States
- F1-05. Quantitative Determination of the Pt Magnetic Moment in Proximity to Ferromagnetic Material. T. Kuschel¹**
1. Bielefeld University, Bielefeld, Germany

- F1-06. Microscopic Study of Magnetic Anisotropy Modification in Nanoscale Heavy Metal/Ferromagnetic Insulator Heterostructures.** *G. Wu¹, S. White¹, W. Ruane¹, Y. Cheng¹, J. Brangham¹, D. Pelekhov¹, F. Yang¹ and P. Hammel¹*
1. physics, The Ohio State University, Columbus, OH, United States
- F1-07. Withdrawn**
- F1-08. Detection of Interfacial Effects in Rare Earth Metal Doped Ferrimagnet Layer / Heavy Metal Layer Using Magneto-Optical Kerr Effect.** *K. Matsumoto¹, S. Sumi¹, K. Tanabe¹ and H. Awano¹*
1. Toyota Kogyo Daigaku, Nagoya, Japan
- F1-09. Transport and Magnetic Properties of TiN Thin Films.** *M. Roy¹, N. Mucha¹ and D. Kumar¹*
1. Mechanical Engineering, North Carolina Agricultural and Technical State University, Greensboro, NC, United States
- F1-10. Revealing the Morphology and Magnetic Properties of Single Hybrid Interfaces Embedded in Co/ZnTPP and ZnTPP/Co by FNR.** *G. Avedissian¹, J. Arabski¹, J. Wytko², J. Weiss² and C. Meny¹*
1. Institut de Physique et Chimie des Materiaux de Strasbourg, Strasbourg, France; 2. Institut de Chimie de Strasbourg, Strasbourg, France
- F1-11. Magnetic Domain Patterns of Multilayered [Co/Pt] Thin Films.** *A. Gentillon¹, C. Richards¹, H. McGhie¹ and O. Hellwig²*
1. Brigham Young University, Provo, UT, United States; 2. Helmholtz Zentrum Dresden Rossendorf, Dresden, Germany

TUESDAY
AFTERNOON
12:30

LIVE Q&A 6

Session F2
MAGNETO-ELASTIC AND MAGNETO-CALORIC
MATERIALS II

Jia Yan Law, Co-Chair
Sevilla University, Sevilla, Spain

Nirmala R, Co-Chair
Indian Institute of Technology Madras, Chennai, India

- F2-01. Giant Anisotropic Magnetocaloric Effect in all-Sputtered Epitaxial Terbium Thin Films.** *M. El Hadri¹, V. Polewczyk², Y. Xiao¹, S. Mangin² and E. Fullerton¹*
1. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA, United States; 2. Institut Jean Lamour, Universite de Lorraine, Nancy, France

- F2-02. Giant Anisotropy of the Magnetocaloric Effect in the Orthovanadate TbVO₄ Single Crystals.** *M. Balli*^{3,5}, S. Mansouri⁵, D. Dimitrov^{1,2}, P. Fournier^{5,4}, S. Jandl⁵ and J. Juang² *1. Institute of Solid State Physics, Bulgarian Academy of Science, Sofia, Bulgaria; 2. Department of Electrophysics, National Chiao Tung University, Hsinchu, Taiwan; 3. LERMA, ESIE, International University of Rabat, Rabat, Morocco; 4. Canadian Institute for Advanced Research, Toronto, ON, Canada; 5. Institut quantique, Université de Sherbrooke, Sherbrooke, QC, Canada*
- F2-03. Tailoring Magnetocaloric Effect in all-d-Metal Ni-Co-Mn-Ti Heusler Alloys: a Combined Experimental and Theoretical Study.** *A. Taubel*¹, B. Beckmann¹, L. Pfeuffer¹, N. Fortunato¹, F. Scheibel¹, S. Ener¹, T. Gottschall², K. Skokov¹, H. Zhang¹ and O. Gutfleisch¹ *1. Materials Sciences, Technical University of Darmstadt, Darmstadt, Germany; 2. Dresden High Magnetic Field Laboratory, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*
- F2-04. Influence of the Martensite Transformation Dynamics on the Magnetocaloric Effect in NiMn-Based Heusler Compounds.** *L. Pfeuffer*¹, T. Gottschall², T. Fasje¹, A. Taubel¹, F. Scheibel¹, A.Y. Karpenkov^{1,3}, K. Skokov¹ and O. Gutfleisch¹ *1. Department of Materials Sciences, Technical University of Darmstadt, Darmstadt, Germany; 2. High Magnetic Field Laboratory, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 3. National Research South Ural State University, Chelyabinsk, Russian Federation*
- F2-05. Magneto-Transport and Magnetocaloric Properties of Al_{1-x}Fe_{2-x}M_xB₂ (M=Mn, Cr, Co) Intermetallic Compounds.** *D. Malaviya*¹, A.K. Pathak², M. Himel³ and M. Khan³ *1. Department of Computer Information System, SUNY Buffalo State College, Buffalo, NY, United States; 2. Department of Physics, SUNY Buffalo State College, Buffalo, NY, United States; 3. Department of Physics, Miami University, Oxford, OH, United States*
- F2-06. Enhanced Magnetic and Magnetocaloric Properties of Fe Nanoparticles in TiN Thin Film Matrix.** *S. Shaji*¹, N. Mucha¹ and D. Kumar¹ *1. Mechanical Engineering, North Carolina Agricultural and Technical State University, Greensboro, NC, United States*
- F2-07. Combined Pressure and Magnetic Field Induced Caloric Effects in Fe₇Se₈ Single Crystals.** *Y. Konopelnyk*¹, I. Radelytskyi¹, P. Iwanowski¹, D. Gawryluk¹, M. Berkowski¹, R. Diduszko^{2,1}, J. Fink-Finowicki¹, R. Puzniak¹ and H. Szymczak¹ *1. Institute of Physics, Polish Academy of Sciences, Warsaw, Poland; 2. Tele and Radio Research Institute, Warszawa, Poland*
- F2-08. Use of the Scaling Laws of the Magnetocaloric Effect to Deconvolute Overlapping Phase Transitions in Biphasic Composites.** *Á. Díaz-García*¹, J. Law¹, P. Gebara² and V. Franco¹ *1. Condensed Matter Physics, Universidad de Sevilla, Sevilla, Spain; 2. Physics, Czestochowa University of Technology, Czestochowa, Poland*
- F2-09. Withdrawn**

- F2-10. Applying Materials Informatics Insights to Magnetocaloric Materials Screening and Discovery.** *A.N. Tantillo*^{1,2} and *K.G. Sandeman*^{1,2} *1. Physics, The Graduate Center at CUNY, New York, NY, United States; 2. Physics, Brooklyn College, Brooklyn, NY, United States*
- F2-11. Withdrawn**
- F2-12. Bulk-Like First-Order Phase Transition in Mechanochemically Fabricated FeRh Particles.** *D. Clifford*¹, *S. Gupta*², *R. Barua*¹, *A. Biswas*², *R.L. Hadimani*¹, *Y. Mudryk*² and *V.K. Pecharsky*^{2,3} *1. Mechanical and Nuclear Eng., Virginia Commonwealth University, Richmond, VA, United States; 2. Division of Materials Science, Ames Laboratory, Ames, IA, United States; 3. Dept. of Materials Science and Engineering, Iowa State University, Ames, IA, United States*
- F2-13. Withdrawn**
- F2-14. Dysprosium-Yttrium Solid Solutions as Magnetocaloric Materials for Nitrogen gas Liquefaction.** *S.V. Taskaev*^{1,3}, *K. Skokov*⁴, *V. Khovaylo*², *M.N. Ulyanov*¹, *D. Bataev*¹, *D. Plakhotskiy*¹, *M. Kononova*^{1,2} and *Z. Hu*⁵ *1. Chelyabinsk State University, Chelyabinsk, Russian Federation; 2. National University of Science and Technology "MISIS", Moscow, Russian Federation; 3. National Research South Ural State University, Chelyabinsk, Russian Federation; 4. Material Science, Technische Universität Darmstadt, Darmstadt, Germany; 5. University of Science and Technology Beijing, Beijing, China*
- F2-15. Decoupling of Magnetic Sublattices in NiMn-Based Heusler Compounds.** *F. Cugini*^{1,2}, *S. Chicco*¹, *G. Cavazzini*^{1,2}, *F. Orlandi*³, *G. Allodi*¹, *V. Vezzoni*¹, *M. Gruner*⁴, *L. Righi*⁵, *S. Fabbrici*², *F. Albertini*² and *M. Solzi*^{1,2} *1. SMFI Department, Università degli Studi di Parma, Parma, Italy; 2. IMEM-CNR Institute, Parma, Italy; 3. ISIS Facility STFC, Didcot, United Kingdom; 4. Department of Physics, Universität Duisburg-Essen, Duisburg, Germany; 5. SCVSA department, Università degli Studi di Parma, Parma, Italy*
- F2-16. Designing Multicaloric Materials for Novel Multi-Stimuli Cooling Cycle.** *F. Scheibel*¹, *A. Taubel*¹, *L. Pfeuffer*¹, *B. Beckmann*¹, *W. Liu*¹, *T. Gottschall*², *K. Skokov*¹ and *O. Gutfleisch*¹ *1. Materials Sciences, Technical University of Darmstadt, Darmstadt, Germany; 2. Dresden High Magnetic Field Laboratory, elmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*
- F2-17. Withdrawn**
- F2-18. Temperature Dependence of the Magnetic Interactions Taking Place in Monodisperse Magnetite Nanoparticles Having Different Morphologies.** *E. Navarro*¹, *Y. Luengo*¹, *S. Veintemillas-Verdaguer*¹, *M.P. Morales*¹, *F. Palomares*¹, *U. Urdirroz*¹, *F. Cebollada*² and *J.M. González*¹ *1. Instituto de Ciencia de Materiales de Madrid - CSIC, Madrid, Spain; 2. Universidad Politécnica de Madrid, Madrid, Spain*

Session F3
NOVEL SENSORS I

Hendrik Ohldag, Co-Chair

Lawrence Berkeley National Laboratory, Berkeley, CA, United States

Tom Thomson, Co-Chair

University of Manchester, Manchester, United Kingdom

- F3-01. Magnetic Domain Behavior up to the GHz Regime in Magnetic Sensors With PicoTesla Sensitivity – Magnetic Noise and Domain Optimization. (Invited) J. McCord¹, C. Müller¹, M. Jovičević Klug¹, E. Golubeva¹, N. Urs¹ and D. Schiewitz¹ 1. Institute for Materials Science, Kiel University, Kiel, Germany**
- F3-02. Detection Limit Normalization and Study of TMR Magnetic Field Sensors. E. Montebianco¹, C. Chopin¹, J. Moulin¹, P. Belliot², N. Belin², C. Fermon¹, M. pannetier-lecoeur¹ and A. Solignac¹ 1. SPEC, Commissariat a l'energie atomique et aux energies alternatives Institut rayonnement-matiere de Saclay, Gif-sur-Yvette, France; 2. CrivaSense Technologies SAS, 91190 Saint Aubin, France, Saint Aubin, France**
- F3-03. Withdrawn**
- F3-04. Withdrawn**
- F3-05. Magnetic Noise due to Asymmetric Oscillations in Magnetic Tunneling Readers. (Invited) A. Stankiewicz¹ 1. Seagate Recording Head Operations, Bloomington, MN, United States**
- F3-06. FeAlSi Thin Films With low Magnetic Anisotropy for the Free Layer of Magnetic Tunnel Junction Based Sensors. S. Akamatsu¹, M. Oogane¹, M. Tsunoda¹ and Y. Ando¹ 1. Engineering, Tohoku Daigaku, Sendai, Japan**
- F3-07. Highly Sensitive Magnetic Sensor for Detecting Magnetic Nanoparticles Based on Magnetic Tunnel Junctions at a Static Field. Z. Jin¹, T. Koo², M. Kim⁵, M. Al-Mahdawi^{3,4}, M. Oogane^{1,3}, Y. Ando^{1,4} and Y. Kim^{2,5} 1. Department of Applied Physics, Tohoku University, Sendai, Japan; 2. Department of Materials Science and Engineering, Korea University, Seoul, The Republic of Korea; 3. Center for Science and Innovation in Spintronics (Core Research Cluster) Organization for Advanced Studies, Tohoku University, Sendai, Japan; 4. Center for Spintronics Research Network, Tohoku University, Sendai, Japan; 5. The Institute for High Technology Materials and Devices, Korea University, Seoul, The Republic of Korea**

- F3-08. Analysis of 1/f Low-Frequency Noise in Vortex-Based Spin-Torque Nano-Oscillators for Magnetic Sensing Applications.** *M. Jotta Garcia*¹, *J. Moulin*², *S. Wittrock*¹, *S. Tsunegi*³, *K. Yakushiji*³, *H. Kubota*³, *S. Yuasa*³, *U. Ebels*⁴, *M. pannetier-lecoeur*², *C. Fermon*², *P. Bortolotti*¹, *A. Solignac*² and *V. Cros*¹ *1. Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, 91767 Palaiseau, France; 2. SPEC, CEA-Saclay, CNRS, Université Paris-Saclay, 91191 Gif-sur-Yvette, France; 3. National Institute of Advanced Industrial Science and Technology, Spintronics Research Center, Tsukuba, Ibaraki 305-8568, Japan; 4. SPINTEC, CEA-Grenoble, CNRS and Université Grenoble Alpes, 38054 Grenoble, France*
- F3-09. 2D Magnetode for Local Neuronal Magnetic Recording.** *C. Chopin*¹, *E. Paul*¹, *C. Fermon*¹, *A. Solignac*¹ and *M. pannetier-lecoeur*¹ *1. Service de Physique de l'Etat Condense, Gif Sur Yvette, France*
- F3-10. Anomalous Hall Sensors With High Sensitivity and Stability for Microsensing.** *K. Wang*¹, *Y. Zhang*¹ and *G. Xiao*¹ *1. Brown University, Providence, RI, United States*
- F3-11. Curvature Effects on Magnetic Field Sensitivity of Magnetoelectric Nano-Plate Resonators.** *A. Matyushov*^{1,2}, *B. Spetzler*³, *M. Zaeimbashi*¹, *J. Zhou*¹, *Z. Qian*¹, *E. Golubeva*³, *C. Tu*¹, *Y. Guo*¹, *B. Chen*¹, *D. Wang*¹, *A. Will-Cole*¹, *H. Chen*¹, *M. Rinaldi*¹, *J. McCord*³, *F. Faupel*³ and *N.X. Sun*¹ *1. ECE, Northeastern University, Boston, MA, United States; 2. Physics, Northeastern University, Boston, MA, United States; 3. Institute of Material Science, Kiel University, Christian-Albrechts-Universität zu Kiel, Kiel, Schleswig-Holstein, DE, Kiel, Germany*
- F3-12. Flexible Highly Compliant Magnetoelectronics.** *G. Canon Bermudez*¹, *J. Ge*¹, *M. Kaltenbrunner*², *J. Fassbender*¹ and *D. Makarov*¹ *1. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Johannes Kepler Universität Linz, Linz, Austria*

TUESDAY
AFTERNOON
12:30

LIVE Q&A 6

Session F4
INTERDISCIPLINARY APPLICATIONS III
(Poster Session)

Claudio Bonizzoni, Chair
Istituto Nanoscienze Consiglio Nazionale delle Ricerche Sede
secondaria di Modena, Modena, Italy

- F4-01. Monte Carlo Simulation to Study the Effect of Molecular Spin State on the Spatio-Temporal Evolution of Equilibrium Magnetic Properties of Magnetic Tunnel Junction Based Molecular Spintronics Devices.** *A. Grizzle*¹ and *P. Tyagi*¹ *1. Center for Nanoscale Research and Education (CNRE), University of the District of Columbia, Washington, DC, United States*

- F4-02. Optimization of Cobalt Concentration & Cation Distribution for Improved Magnetic Characteristics and Stability of $\text{Co}_x\text{Fe}_{3-x}\text{O}_4$ Mixed Ferrite Magnetic Fluids.** P. Kumar^{1,3}, S. Pathak^{1,4}, A. Singh^{1,2}, K. Singh^{1,3}, H. Khanduri¹, G. Basheed^{1,3} and R. Pant^{1,3} 1. Indian Reference Materials Division, National Physical Laboratory CSIR, New Delhi, India; 2. Indian Institute of Technology Jammu, Jammu, India; 3. Academy of Scientific and Innovative Research, Ghaziabad, India; 4. RMIT University College of Science Engineering and Health, Melbourne, VIC, Australia
- F4-03. Equilibrium Configurations in a Magnetic Fluid-Based Mapping System for Designing MagLev Devices: Experiment and Simulations.** P. Ryapolov¹, V. Bashtovoi², A. Reks², E. Sokolov¹ and E. Postnikov³ 1. Natural science faculty, Southwest State University, Kursk, Russian Federation; 2. UNESCO Chair, Belarusian National Technical University, Kursk, Russian Federation; 3. Theoretical Physics, Kursk State University, Kursk, Russian Federation
- F4-04. Passive Piezomagnetic Monitoring of Structures Subjected to in-Service Cyclic Loading: Application to the Detection of Fatigue Crack Initiation and Propagation.** A. Ouaddi^{1,2}, O. Hubert¹, J. Furtado², D. Gary² and S. He³ 1. Laboratoire de Mecanique et Technologie, Cachan, France; 2. Air Liquide Centre de Recherche Paris-Saclay, Jouy-en-Josas, France; 3. Groupe Leonard de Vinci, Paris, France
- F4-05. Development of Sub-mm Period Undulator With L1_0 Phase FePt Micromagnet Array.** B.D. Gürel^{1,2}, N. Gunduz Akdogan³ and O. Akdogan¹ 1. Bahcesehir Universitesi, Istanbul, Turkey; 2. Sabanci Universitesi, Istanbul, Turkey; 3. Piri Reis Universitesi, Istanbul, Turkey
- F4-06. Study of Thermo-Magnetoconvection of a Magnetofluidic Cooling Device.** V.B. Varma^{1,2}, M.S. Pattanaik^{1,2}, S.K. Cheekati^{1,2} and R. Ramanujan^{1,2} 1. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore; 2. Singapore-HUJ Alliance for Research and Enterprise (SHARE), Nanomaterials for Energy and Energy-Water Nexus (NEW), Campus for Research Excellence And Technological Enterprise (CREATE), Singapore, Singapore
- F4-07. Full Scale Localization of Underwater Magnetic Sensors Using Natural Computing Algorithms.** R. Alimi¹, E. Fisher^{1,2}, K. Nahir¹ and E. Weiss¹ 1. Soreq NRC, Soreq Nuclear Research Center, Yavne, IL, Yavne, Israel; 2. Jerusalem College of Technology, Yerushalayim, Israel
- F4-08. Enhancement for Magnetic Field Strength of a Magnetohydrodynamic Thruster Consisting of Permanent Magnets.** Y. Li¹, C. Zeng¹ and Y. Chen¹ 1. Mechanical and Aerospace Engineering, National Defense University Chung Cheng Institute of Technology, Taoyuan, Taiwan
- F4-09. Electro-Permanent Magnetic Actuator for Miniaturized Well Logging Tool.** H.R. Seren¹, E. Buzi¹ and M. Deffenbaugh¹ 1. Aramco Research Center - Houston, Aramco Services Company, Houston, TX, United States

F4-10. The Underwater Ferromagnetic Target Location System Based on Gauss Meter Array. *D. Xie*¹ and *J. Qiu*¹
1. Chongqing University, Chongqing, China

F4-11. Withdrawn

F4-12. γ -Irradiation Synthesis and Characterization of Iron Oxide Nanomaterials. *I. Marić*³, *M. Gotić*¹, *G. Štefanić*¹, *J. Grenèche*², *A. Pustak*³ and *T. Jurkin*³ *1. Laboratory for molecular physics and synthesis of new materials, Institut Ruder Boskovic, Zagreb, Croatia; 2. Institut des Molecules et Materiaux du Mans, Le Mans, France; 3. Radiation chemistry and dosimetry laboratory, Institut Ruder Boskovic, Zagreb, Croatia*

F4-13. Eddy Current Loss Analysis in Permanent Magnet Linear Gear Using Analytical Method. *G. Jang*¹, *S. Seo*¹, *J. Nah*¹, *J. Bird*² and *J. Choi*¹ *1. Chungnam National University, Daejeon, The Republic of Korea; 2. Portland State University, Portland, OR, United States*

TUESDAY
AFTERNOON
12:30

LIVE Q&A 6

Session F5
MAGNETISM AND SUPERCONDUCTIVITY
(Poster Session)

Rolando Valdes Aguilar, Chair
The Ohio State University, Columbus, OH, United States

F5-01. Influence of Single-ion Anisotropy on the Phase States of two-Sublattice non-Heisenberg Magnet. *E. Yarigina*¹, *P. Klevets*¹ and *Y. Fridman*¹ *1. V.I. Vernadsky Crimean federal university, Simferopol, Russian Federation*

F5-02. Mössbauer Studies on Magnetism in FeSe. *H. Choi*¹, *J. Seo*¹, *Y. Uhm*², *G. Sun*² and *C. Kim*¹ *1. Department of Physics, Kookmin University, Seoul, The Republic of Korea; 2. HANARO Operation and Utilization, Korea Atomic Energy Research Institute, Daejeon, The Republic of Korea*

F5-03. Low-Dimensional Antiferromagnets Near SU(N) Symmetry. *A. Kolezhuk*^{1,2} and *T. Zavertanyi*¹ *1. Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 2. Institute of Magnetism NAS and MES of Ukraine, Kyiv, Ukraine*

F5-04. Quantum-Classical Crossover in Nanomagnets Embedded in the Josephson ϕ_0 Junction. *G. Kim*¹ *1. Physics and Astronomy, Sejong University College of Natural Sciences, Gwangjin-gu, The Republic of Korea*

F5-05. Fabrication and Characterization of NbN Magnetic Josephson Junctions Using non-Collinear Antiferromagnet Mn_3GaN . *H. Kato*¹, *S. Nakamura*¹, *K. Matsuura*¹, *B. Qiang*¹, *T. Hajiri*¹ and *H. Asano*¹ *1. Nagoya Daigaku Kogakubu Daigakuin Kogaku Kenkyuka, Nagoya, Japan*

- F5-06. DFT-Based Calculations of the Magnetic Hyperfine Interactions at Cd Sites in RECd Compounds With the FP-LAPW ELK Code.** *L. Scalise*¹, *A. Burimova*¹, *L.F. Pereira*¹, *W. Ferreira*¹, *T.S. Sales*¹, *V. Gonçalves*¹, *G. Cabrera-Pasca*², *R.N. Saxena*¹ and *A.W. Carbonari*¹
1. Instituto de Pesquisas Energeticas e Nucleares, Sao Paulo, Brazil; 2. Universidade Federal do Para - Campus Abaetetuba, Abaetetuba, Brazil
- F5-07. Coherent Manipulation of a Vanadium-Based Molecular Qubit Coupled to a Nuclear Qudit.** *S. Chicco*^{1,2}, *E. Garlatti*^{1,2}, *G. Allodi*¹, *M. Atzori*⁴, *A. Chiesa*^{1,2}, *A. Albino*³, *L. Sorace*^{3,2}, *R. De Renzi*¹, *R. Sessoli*^{3,2} and *S. Carretta*^{1,2} *1. Mathematical, Physical and Computer sciences, Universita degli Studi di Parma, Parma, Italy; 2. Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Firenze, Italy; 3. Universita degli Studi di Firenze, Firenze, Italy; 4. Laboratoire National des Champs Magnétiques Intenses, Grenoble, France*
- F5-08. Crystalline Structure and Magnetic Properties of Pyrite FeS₂.** *H. Choi*¹, *J. Seo*¹, *Y. Uhm*², *G. Sun*² and *C. Kim*¹
1. Department of Physics, Kookmin University, Seoul, The Republic of Korea; 2. HANARO Operation and Utilization, Korea Atomic Energy Research Institute, Daejeon, The Republic of Korea
- F5-09. Nonequilibrium Critical Behavior of the 3D Isotropic and Anisotropic Heisenberg Models.** *A.S. Lyakh*¹, *P.V. Prudnikov*¹ and *V.V. Prudnikov*¹ *1. Theoretical Physics, Dostoevsky Omsk State University, Omsk, Russian Federation*
- F5-10. Probing Majorana Fermion in Two Dimensional Noncentrosymmetric Superconductors by Using Equal-Spin Andreev Reflections.** *H. Lai*¹, *M. Wang*¹ and *C. Chang*¹
1. Physics, National Taiwan University, Taipei, Taiwan
- F5-11. Annealing Effect on the Structural and Local Magnetic Properties of Nickel Ferrite Nanoparticles Studied by Hyperfine Interaction Measurements.** *P.S. Rodrigues*¹, *I.T. Matos*¹, *T.S. Sales*¹, *A. Burimova*¹, *G. Cabrera-Pasca*², *L.F. Pereira*¹, *R.N. Saxena*¹, *L. Otubo*¹ and *A.W. Carbonari*¹
1. Instituto de Pesquisas Energeticas e Nucleares, Sao Paulo, Brazil; 2. Universidade Federal do Para, Belem, Brazil
- F5-12. Field-Induced Phase Transitions of Tetramer-Singlet States in Synthetic SU(4) Magnets.** *Y. Miyazaki*¹, *D. Yamamoto*¹ and *N. Furukawa*¹ *1. Department of Physics, Aoyama Gakuin University, Sagami-hara, Japan*
- F5-13. Withdrawn**

Session F6
RARE EARTH TRANSITION METAL BORIDES II
(Poster Session)

Hossein Sepehri Amin, Chair
National Institute for Materials Science, Tsukuba, Japan,
Tsukuba, Japan

F6-01. Withdrawn

F6-02. Microstructure and Magnetic Properties of Novel Cu-Containing Sintered Nd-Fe-B Magnet. D. Shi¹, Q. Lan¹, Q. Huang², D. Chen² and Y. Shi¹ 1. *Institute of rare earth magnetic material, Xiamen Tungsten Co. Ltd., Xiamen, China;* 2. *Fujian Changting Golden Dragon Rare-Earth Co. Ltd., Longyan, China*

F6-03. Effect of Mo Monoatomic Interlayer on Magnetic Properties of in-Plane Anisotropic Nd-Fe-B/Mo/FeCo Nanocomposite Multilayered Films. K. Koike¹, K. Ohashi², T. Suzuki², C. Okita², N. Inaba², H. Kato¹, M. Itakura³, S. Hara⁴, Y. Saito⁴, S. Okubo⁴ and H. Ohta⁴ 1. *Applied Mathematics and Physics, Yamagata University, Yonezawa, Japan;* 2. *Informatics and Electronics, Yamagata University, Yonezawa, Japan;* 3. *Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Kasuga, Japan;* 4. *Molecular Photoscience Research Center, Kobe University, Kobe, Japan*

F6-04. Reduction of Nd Moments and Local Magnetic Anisotropy in Nd₂Fe₁₄B Single Crystals. H. Sato¹, Y. Kubo¹, T. Yoshioka², H. Tsuchiura², Y. Mizuno¹, K. Koike¹, K. Takahashi³ and H. Kato¹ 1. *Graduate School of Science and Engineering, Yamagata University, Yonezawa, Japan;* 2. *Department of Applied Physics, Tohoku University, Sendai, Japan;* 3. *Institute for Materials Research, Tohoku University, Sendai, Japan*

F6-05. Coercivity Enhancement of hot-Deformed NdFeB Magnet by Doping R₈₀Al₂₀ (R= La, Ce, Dy, Tb) Alloy Powders. Y. Wong¹, G. Lin¹, H.W. Chang¹ and W. Chang¹ 1. *National Chung Cheng University, Minhsiung, Taiwan*

F6-06. Effect of Shape and Crystallinity of Tb₇₀Co₁₅Cu₁₅ Powders on the Coercivity Enhancement of the Sintered NdFeB Magnet by Grain Boundary Diffusion. Y. Wong¹, W. Hsu¹, H.W. Chang¹, Y. Lee¹, W. Chang¹, C. Chiu² and C. Mo³ 1. *National Chung Cheng University, Minhsiung, Taiwan;* 2. *China Steel Corp., Kaohsiung, Taiwan, Kaohsiung, Taiwan;* 3. *Himag Magnetic Corporation, Pingtung, Taiwan, Pingtung, Taiwan*

F6-07. Enhanced Magnetic Properties of Chemically Prepared NdFeB Particles by Reduction-Diffusion Method Through Optimization of Heat Treatment. S. Kim^{1,3}, R. Kuchi^{1,2} and D. Kim^{1,2} 1. *Korea Institute of Materials Science, Changwon, The Republic of Korea;* 2. *Korea Institute of Geoscience and Mineral Resources, Daejeon, The Republic of Korea;* 3. *Chungnam National University, Daejeon, The Republic of Korea*

- F6-08. Coercivity Mechanism of Ce-Fe-B Melt-Spinning Ribbons Crystallized by Electron Beam Exposure.** *L. Zha¹, Z. Lin¹, F. Wang¹ and J. Yang¹* *1. Department of Physics, Peking University, Beijing, China*

WEDNESDAY
MORNING
3:00

SYMPOSIA

Session S3

MAGNETIC NANOPARTICLES FOR BIOMEDICAL DIAGNOSTICS AND IMAGING: RECENT ADVANCES AND PERSPECTIVES

Frank Wiekhorst, Chair

Physikalisch-Technische Bundesanstalt, Berlin, Germany

3:00

- S3-01. Technology Development for Monitoring of Immune Response Signaling in Primary Brain Tumors With Magnetic Nanoparticles. (Invited)** *S. Diamond^{1,2}, C. Spatarelu^{1,2}, C. Knopke² and A.B. Gaur³* *1. Thayer School of Engineering, Dartmouth College, Hanover, NH, United States; 2. Lodestone Biomedical LLC, Lebanon, NH, United States; 3. Geisel School of Medicine, Dartmouth College, Hanover, NH, United States*

3:36

- S3-02. Hard Magnetic Microparticles in 3D-Nanoprinted Hybrid Micro-Robots for Biological Applications. (Invited)** *T. Devillers¹, V. Vieille^{1,2}, R. Pétrot^{1,2}, O. Stephan³, G. Delattre³, F. Marchi¹, M. Verdier⁴ and O. Cugat²* *1. Univ. Grenoble Alpes, CNRS, Grenoble INP, Institut Néel, Grenoble, France; 2. Univ. Grenoble Alpes, CNRS, Grenoble INP, G2ELab, Grenoble, France; 3. Univ. Grenoble Alpes, CNRS, Grenoble INP, LIPhy, Grenoble, France; 4. Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMAP, Grenoble, France*

4:12

- S3-03. Quantitative Magnetorelaxometry Imaging of Magnetic Nanoparticles for Monitoring Human Cancer Therapies. (Invited)** *D. Baumgarten¹, M. Liebl², P. Schier¹, A. Jaufenthaler¹, U. Steinhoff² and F. Wiekhorst²* *1. Institute of Electrical and Biomedical Engineering, UMIT - Private University for Health Sciences, Medical Informatics and Technology, Hall in Tirol, Austria; 2. Metrology for Magnetic Nanoparticles, Physikalisch-Technische Bundesanstalt, Berlin, Germany*

4:48

- S3-04. Advances and Perspectives in Theranostic Monitoring Using Magnetic Nanoparticles. (Invited)** *J. Leliaert¹, A. Coene², P. Radon³, U. Steinhoff³ and F. Wiekhorst³* *1. Dept. of Solid State Sciences, Universiteit Gent, Ghent, Belgium; 2. Department of Electronic Systems, Universiteit Gent, Ghent, Belgium; 3. Metrology of Magnetic Nanoparticles, Physikalisch-Technische Bundesanstalt, Berlin, Germany*

- S3-05. Whither Magnetic Nanoparticles in Translational Cancer Research? (Invited)** D. Ortega^{1,2}, A. Santana², J. Ortega² and I. Rubia-Rodríguez² *1. Condensed Matter Physics, Universidad de Cadiz, Campus de Puerto Real, Universidad de Cadiz Campus de Rio San Pedro, Puerto Real, Andalucía, ES, Puerto Real, Spain; 2. IMDEA Nanociencia, Madrid, Spain*

WEDNESDAY
MORNING
6:00

LIVE Q&A 7

Session G1

ANTIFERROMAGNETIC SPINTRONICS I

Takahiro Moriyama, Chair
Kyoto University, Uji, Japan

- G1-01. Unconventional Dynamics of Ferrimagnets in the Vicinity of Compensation Points. (Invited)** S. Kim¹ *1. Physics, Korea Advanced Institute of Science and Technology, Daejeon, The Republic of Korea*
- G1-02. Current-Induced Magnetotransport in Epitaxial Antiferromagnetic Insulator/Heavy-Metal Heterostructures.** A. Churikova¹, A. Wittmann¹, N.O. Birge³, L. Scipioni², A. Shepard², T. Newhouse-Illige², J.A. Greer² and G. Beach¹ *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States; 2. PVD Products, Inc, Wilmington, MA, United States; 3. Michigan State University, East Lansing, MI, United States*
- G1-03. Withdrawn**
- G1-04. X-ray Magnetic Linear Dichroism Studies of Electrical Switching of Antiferromagnetic Order in α -Fe₂O₃ Epitaxial Films.** E. Cogulu¹, N.N. Statuto¹, Y. Cheng², S. Yu², F. Yang², R.V. Chopdekar³, H. Ohldag³ and A.D. Kent¹ *1. Physics Department, Center for Quantum Phenomena, New York University, New York, NY, United States; 2. Department of Physics, The Ohio State University, Columbus, OH, United States; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States*
- G1-05. Importance of the Ferromagnetic Moment Induced by Dzyaloshinskii-Moriya Interaction in a Canted Antiferromagnet for Electrical and Magnetic Field Control of the Néel Order.** A. Wittmann¹, A. Churikova¹, L. Scipioni², A. Shepard², T. Newhouse-Illige², J.A. Greer², N.O. Birge³ and G. Beach¹ *1. Massachusetts Institute of Technology, Cambridge, MA, United States; 2. PVD Products, Wilmington, MA, United States; 3. Michigan State University, East Lansing, MI, United States*
- G1-06. Competing Magnetic Ordering in Thin Films of SrMnO₃ Studied by Spin Transport.** A. Das¹, E. Vallabhaneni¹, a. watson¹ and T. Banerjee¹ *1. faculty of science and engineering, Rijksuniversiteit Groningen Zernike Institute for Advanced Materials, Groningen, Netherlands*

- G1-07. Reversible Hydrogen-ion Control of Room Temperature Antiferromagnetic State in α -Fe₂O₃.** *H. Jani*¹ and *T. Venkatesan*² *1. Physics, National University of Singapore, Singapore, Singapore; 2. ECE, National University of Singapore, Singapore, Singapore*
- G1-08. Observation of Magnon-Polarons in a Uniaxial Antiferromagnetic Insulator Cr₂O₃.** *J. Li*¹, *H.T. Simensen*², *D. Reitz*³, *Q. Sun*⁴, *C. Li*⁴, *y. Tserkovnyak*³, *A. Brataas*² and *J. Shi*¹ *1. Department of Physics and Astronomy, University of California Riverside, Riverside, CA, United States; 2. Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway; 3. Department of Physics and Astronomy, University of California Los Angeles, Los Angeles, CA, United States; 4. Department of Mechanical Engineering, University of California Riverside, Riverside, CA, United States*
- G1-09. Domain Walls in Antiferromagnets With Strong Magnetoelastic Coupling.** *O. Gomonay*¹ *1. Johannes Gutenberg Universitat Mainz, Mainz, Germany*
- G1-10. Electrical Control of Antiferromagnetic Domain Walls.** *O.J. Amin*¹, *K.W. Edmonds*¹, *P. Wadley*¹, *A.W. Rushforth*¹, *R.P. Campion*¹, *S. Reimers*^{1,2}, *L.X. Barton*¹, *V. Novák*³, *F. Krizek*³, *S.S. Dhesi*² and *F. Maccherozzi*² *1. Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; 2. Diamond Light Source Ltd, Didcot, United Kingdom; 3. Institute of Physics, Academy of Sciences of the Czech Republic, Praha, Czechia*
- G1-11. Efficient Magnon Transport in Insulating Antiferromagnets Governed by Domain Structures and Doping.** *A. Ross*^{1,2}, *R. Lebrun*³, *O. Gomonay*¹, *D. Grave*⁴, *A. Kay*⁴, *L. Baldrati*¹, *S. Becker*¹, *A. Qaiumzadeh*⁶, *C. Ulloa*⁵, *G. Jakob*^{1,2}, *F. Kronast*⁷, *J. Sinova*^{1,2}, *R. Duine*^{5,6}, *A. Brataas*⁶, *A. Rothschild*⁴ and *M. Klaui*^{1,2} *1. Johannes Gutenberg Universitat Mainz, Mainz, Germany; 2. Johannes Gutenberg University Mainz Graduate School of Excellence Materials Science in Mainz, Mainz, Germany; 3. Unite Mixte de Physique CNRS/Thales, Palaiseau, France; 4. Technion Israel Institute of Technology, Haifa, Israel; 5. Universiteit Utrecht Departement Natuur- en Sterrenkunde, Utrecht, Netherlands; 6. Norges teknisk-naturvitenskapelige universitet, Trondheim, Norway; 7. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany*
- G1-12. Birefringence-Like Spin Transport via Linearly Polarized Antiferromagnetic Magnons.** *J. Han*^{1*}, *P. Zhang*¹, *Z. Bi*¹, *Y. Fan*¹, *T.S. Safi*¹, *J. Xiang*¹, *J. Finley*¹, *L. Fu*¹, *R. Cheng*² and *L. Liu*¹ *1. Massachusetts Institute of Technology, Cambridge, MA, United States; 2. University of California Riverside, Riverside, CA, United States*
- G1-13. Voltage Control of Magnon Spin Currents in an Antiferromagnetic Insulator.** *C. Liu*¹, *Y. Luo*^{1,2}, *D. Hong*¹, *S. Zhang*³, *F. Brandon*¹, *J. Pearson*¹, *S. Jiang*¹, *A. Hoffmann*^{1,4} and *A. Bhattacharya*¹ *1. Argonne National Laboratory, Lemont, IL, United States; 2. Hangzhou Dianzi University, Hangzhou, China; 3. Case Western Reserve University, Cleveland, OH, United States; 4. University of Illinois at Urbana-Champaign, Urbana, IL, United States*

* - Best student presentation award finalist

Session G2
INSTRUMENTATION AND MEASUREMENT
TECHNIQUES I

Valerio Scagnoli, Chair
Paul Scherrer Institut, Villigen, Switzerland

- G2-01. Spin Dynamics of Molecular Nanomagnets With Four-Dimensional Inelastic Neutron Scattering. (Invited) T. Guidi¹, E. Garlatti², S. Carretta², A. Chiesa², P. Santini², G. Timco³ and R.E. Winpenny³** *1. ISIS, STFC, Science and Technology Facilities Council, Didcot, United Kingdom; 2. Dipartimento di Scienze Matematiche, Fisiche e Informatiche, Università degli Studi di Parma, Parma, Italy; 3. School of Chemistry and Photon Science Institute, University of Manchester, Manchester, United Kingdom*
- G2-02. X-ray Magnetic Circular Dichroism (XMCD) Study of FeCoMnCrSi Multi-Principal Element Alloy. R. Jangid¹, J. Mehta¹, J. Li¹, A.T. N'Diaye² and R. Kukreja¹** *1. Materials Science and Engineering, University of California, Davis, Davis, CA, United States; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States*
- G2-03. Magnetization Configuration of Bi and Ga Substituted Tm₃Fe₅O₁₂ Probed by Proximate Anomalous Hall Effect and x-ray Magnetic Circular Dichroism. Y. Wang¹, A.T. Clark², H. Chen¹, X. Wang², X. Cheng², J.W. Freeland³ and J.Q. Xiao¹** *1. University of Delaware, Newark, DE, United States, Newark, DE, United States; 2. Bryn Mawr College, Bryn Mawr, PA, United States, Bryn Mawr, PA, United States; 3. Argonne National Laboratory, Lemont, IL, United States, Lemont, IL, United States*
- G2-04. Non-Standard Imaging in Magnetic Force Microscopy. M. Jaafar^{1,2}, E. Berganza² and A. Asenjo²** *1. Condensed Matter, Universidad Autonoma de Madrid, Madrid, Spain; 2. ICMN, Consejo Superior de Investigaciones Científicas, Madrid, Spain*
- G2-05. A Position-Independent Approach to Accurate Measurement of Broadband Electromagnetic Constitutive Parameters of Magneto-Dielectric Materials. Q. Li¹, Y. Chen², C. Caisse³, A. Horn³ and V. Harris¹** *1. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA, United States; 2. Innovation Center, Rogers Corporation, Burlington, MA, United States; 3. Lurie R&D Center, Rogers Corporation, Rogers, CT, United States*
- G2-06. Withdrawn**
- G2-07. Laser-Free GHz Stroboscopic TEM: Deployment, Benchmarking, and Applications. (Invited) J.W. Lau¹, K.B. Schliep¹, M.B. Katz¹, V.J. Gokhale¹, J.J. Gorman¹, A. Liu², Y. Zhao², C. Jing², A. Kanareykin², X. Fu³ and Y. Zhu³** *1. National Institute of Standards and Technology, Gaithersburg, MD, United States; 2. Euclid TechLabs, Bolingbrook, IL, United States; 3. Brookhaven National Laboratory, Upton, NY, United States*

- G2-08. Magnetic Characterization and Quantification of Magnetic Nanoparticle Endocytosis Mechanisms by Particle Tracking Velocimetry.** A. Sannidhi¹, P. Todd² and T. Hanley¹ 1. *Chemical Engineering, Auburn University, Auburn, AL, United States;* 2. *Magnaquant, Louisville, KY, United States*
- G2-09. Withdrawn**
- G2-10. Electromagnetic Modelling of the Magnetic Needle Probe Method From Parallel Domain Structure by FD Approximation.** Y. Tene Deffo^{2,1}, P. Tsafack² and B. Ducharme¹ 1. *Laboratoire de Génie Electrique et Ferroélectricité, INSA de Lyon, 69100, Villeurbanne, France;* 2. *Faculty of Engineering and Technology, University of Buea, Buea, Cameroon*
- G2-11. Mechanical Torque Vector Measurements for Micromagnets.** K. Fast¹, J. Thibault¹, V. Sauer^{1,4}, M. Dunsmore¹, A. Kav¹, J.E. Losby^{1,5}, Z. Diao^{1,6}, E. Lubert², M. Belov³ and M.R. Freeman¹ 1. *Physics, University of Alberta, Edmonton, AB, Canada;* 2. *Chemistry, University of Alberta, Edmonton, AB, Canada;* 3. *National Research Council Canada Nanotechnology Research Centre, Edmonton, AB, Canada;* 4. *Wyvern Space, Edmonton, AB, Canada;* 5. *Physics and Astronomy, University of Calgary, Calgary, AB, Canada;* 6. *Physics, Florida Agricultural and Mechanical University, Tallahassee, FL, United States*
- G2-12. Effect of Field Orientation and Infill Percentage on the VSM Calibration Factor of FFM 3D Printed Samples.** K. Dieckow¹, C.Q. Howlader², T.N. Ahmed², M.C. Belduque³, J. Tate^{3,2} and W.J. Geerts^{1,2} 1. *Physics, Texas State University, San Marcos, TX, United States;* 2. *MSEC, Texas State University, San Marcos, TX, United States;* 3. *Engineering, Texas State University, San Marcos, TX, United States*
- G2-13. Prediction of Magnetic Shield Plate Performance Using Permeability in Alternating Micromagnetic Fields.** M. Sakakibara^{2,1}, G. Uehara¹, Y. Adachi¹ and T. Shinnoh² 1. *Kanazawa Institute of Technology, Kanazawa, Japan;* 2. *Ohtama Co., Ltd., Tokyo, Japan*
- G2-14. An Algorithm for Radial Offset Systematic Error Correction in Second-Order Gradiometer-Based Vibrating Sample Magnetometers.** P.S. Stamenov¹ 1. *School of Physics and CRANN, University of Dublin Trinity College, Dublin, Ireland*

Session G3

**MAGNETIZATION DYNAMICS AND DAMPING II:
ULTRAFAST DEMAGNETIZATION AND
MAGNETO-OPTICS**

André Philippi-Kobs, Chair
Deutsches Elektronen-Synchrotron, Hamburg, Germany

- G3-01. Effects of CoFe Alloy Composition on Magnetization Dynamics and Magnetic Thermal Transport.** *R. Mohan*¹, V.H. Ortiz², Y. Sun², S. Mathaudhu², S. Coh² and R. B. Wilson^{1,2}
1. Material Science & Engineering, University of California, Riverside, Riverside, CA, United States; 2. Mechanical Engineering, University of California, Riverside, Riverside, CA, United States
- G3-02. Engineering Co₂MnAl_xSi_{1-x} Heusler Compounds as a Model System to Correlate Spin Polarization, Intrinsic Gilbert Damping and Ultrafast Demagnetization.** *W. Zhang*¹, C. Guillemard^{1,2}, C. de Melo¹, G. Malinowski¹, S. Petit-Watelot¹, J. Gorchon¹, S. Mangin¹, F. Bertran² and S. Andrieu¹
1. institut jean lamour, lorraine unviersity, Nancy, France; 2. synchrotron SOLEIL, Gif-sur-Yvette, France
- G3-03. Photon Energy Dependent fs-Demagnetization Dynamics of Thin Nickel Films.** *M. Stiehl*¹, C. Seibel¹, M. Weber¹, J. Hofer¹, S. Ashok¹, S. Weber¹, B. Stadtmüller¹, H. Schneider¹, B. Rethfeld¹ and M. Aeschlimann¹ *1. Physics, Technische Universität Kaiserslautern, Kaiserslautern, Germany*
- G3-04. Ultrafast Optically Induced Spin Transfer (OISTR) in Ferromagnetic Alloys. (Invited)** *M. Aeschlimann*¹
1. Department of Physics and Research Center OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany
- G3-05. Ultrafast Demagnetization Excited by Extreme Ultraviolet Light From a Free-Electron Laser.** *A. Philippi-Kobs*^{1,2}, L. Müller^{1,2}, M. Berntsen^{1,3}, W. Roseker¹, M. Riepp¹, K. Bagschik^{1,2}, J. Wagner², R. Frömter², M. Danailov⁴, F. Capotondi⁴, E. Pedersoli⁴, M. Manfredda⁴, M. Kiskinova⁴, M. Stransky⁵, V. Lipp⁶, A. Scherz⁷, B. Ziaja^{6,8}, H. Oepen² and G. Grübel¹ *1. Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany; 2. Universität Hamburg, Hamburg, Germany; 3. KTH Royal Institute of Technology, Stockholm, Sweden; 4. Elettra Sincrotrone Trieste, Trieste, Italy; 5. Academy of Sciences of the Czech Republic, Praha, Czechia; 6. Center for Free Electron Laser Science, Hamburg, Germany; 7. European XFEL GmbH, Schenefeld, Germany; 8. Polish Academy of Sciences, Krakow, Poland*

- G3-06. Probing the Laser-Driven Antiferromagnetic to Ferromagnetic Phase Transition of FeRh With Femtosecond Time-Resolved Small Angle X-ray Scattering (tr-SAXS) and X-ray Absorption Spectroscopy (tr-XAS).** *N. Agarwal*^{1,2}, R. Carley¹, J. Ander Arregi Uribeetxebarria³, A. Yaroslavtsev¹, V. Valmispild^{2,1}, L. Le Guyader¹, I. Vaskivskiy⁴, R. Kurta¹, M. Izquierdo¹, L. Mercadier¹, G. Mercurio¹, R. Gort¹, N. Gerasimova¹, J. Schlappa¹, B. E. Van Kuiken¹, M. Teichmann¹, S. Molodtsov¹, D. Turenne⁵, V. Uhlig³, C. Back⁶, H. Durr⁵, A. Lichtenstein^{2,1} and A. Scherz¹
1. European XFEL GmbH, Schenefeld, Germany; 2. University of Hamburg, Hamburg, Germany; 3. Brno University of Technology, Brno, Czechia; 4. Jozef Stefan Institute, Ljubljana, Slovenia; 5. Uppsala University, Uppsala, Sweden; 6. Technical University of Munich, Munchen, Germany
- G3-07. Ultrafast Laser Induced Precessional Dynamics in Antiferromagnetically Coupled Ferromagnetic Films.** *J. Zhou*^{1,2}, S. Saha^{1,2}, Z. Luo^{1,2}, E. Kirk^{1,2}, V. Scagnoli^{1,2} and L. Heyderman^{1,2} *1. ETH Zürich, Eidgenössische Technische Hochschule Zurich, Zurich, Switzerland; 2. Paul Scherrer Institut, Villigen, Switzerland*
- G3-08. Chiral Versus Collinear Magnetic Order Dynamics: Faster Chiral Recovery After Optical Excitation Revealed by Femtosecond XUV Scattering.** *N. Kerber*^{1,2}, D. Ksenzov³, F. Freimuth⁴, F. Capotondi⁵, E. Pedersoli⁵, I. Lopez-Quintas⁵, B. Seng^{1,6}, J. Cramer¹, K. Litzius¹, D. Lacour⁶, H. Zabel^{1,7}, Y. Mokrousov^{1,4}, M. Klau^{1,2} and C. Gutt³ *1. Institut für Physik, Johannes Gutenberg-Universität Mainz, Mainz, Germany; 2. Graduate School of Excellence Materials Science in Mainz, Mainz, Germany; 3. Department Physik, Universität Siegen, Siegen, Germany; 4. Peter Grünberg Institute and Institute for Advanced Simulation, Forschungszentrum Jülich and JARA, Jülich, Germany; 5. Elettra-Sincrotrone Trieste, Trieste, Italy; 6. Institut Jean Lamour, UMR CNRS 7198, Université de Lorraine, Nancy, France; 7. Department of Physics, Ruhr-University Bochum, Bochum, Germany*
- G3-09. Thermal Coupling Parameters Between Electron, Phonon, and Magnon of Nickel.** *K. Kang*¹ and G. Choi^{1,2} *1. Department of Energy Science, Sungkyunkwan University, Suwon city, The Republic of Korea; 2. Center for Integrated Nanostructure Physics, Institute for Basic Science (IBS), Suwon city, The Republic of Korea*
- G3-10. Unification of Ultrafast Demagnetization and Switching.** *G. Zhang*¹, M. Murakami¹, Y. Bai¹, T.F. George² and X. Wu³
1. Indiana State University, Terre Haute, IN, United States; 2. University of Missouri-St Louis, St Louis, MO, United States; 3. Nanjing University, Nanjing, China
- G3-11. Role of Spin-Resolved Charge and Heat Transport in Ultrafast Demagnetization Dynamics.** *S. Ashok*^{1,2}, J. Hofer^{1,2}, S. Weber^{1,2}, M. Stiehl^{1,2}, C. Seibel^{1,2}, J. Briones^{1,2}, B. Rethfeld^{1,2}, M. Aeschlimann^{1,2} and B. Stadtmüller^{1,2}
1. Technische Universität Kaiserslautern Staatliches Forschungszentrum für Optik und Materialwissenschaften, Kaiserslautern, Germany; 2. Department of Physics, Technische Universität Kaiserslautern, Kaiserslautern, Germany

- G3-12. A Simulation Study of RKKY Exchange Mediated Ultrafast all-Optical Switching of GdCo/[Co/Pt] Heterostructures.** *D. Polley^{1,2}, H. Jang², J. Chatterjee² and J. Bokor^{1,2}* 1. *Material Science, E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States*; 2. *EECS, University of California Berkeley, Berkeley, CA, United States*
- G3-13. Advanced Atomistic Modelling of Magnetisation Dynamics With Spin and Lattice Degrees of Freedom.** *M.S. Strungaru¹, M.O. Ellis², S. Ruta¹, O. Chubykalo-Fesenko³, R.F. Evans¹ and R. Chantrell¹* 1. *Physics, University of York, York, United Kingdom*; 2. *Computer Science, The University of Sheffield, Sheffield, United Kingdom*; 3. *Instituto de Ciencia de Materiales de Madrid, Madrid, Spain*

WEDNESDAY
MORNING
6:00

LIVE Q&A 7

Session G4
NEUROMORPHIC COMPUTING WITH
NANOMAGNETS

Alice Mizrahi, Chair

- G4-01. Experimental Demonstration of Probabilistic Spin Logic by Magnetic Tunnel Junctions.** *Y. Lv¹, R.P. Bloom¹ and J. Wang¹*
1. *Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*
- G4-02. Spintronic Memristor Based on the Angular Variation of TMR.** *M. Mansueto¹, A. Chavent¹, S. Auffret¹, I. Joumard¹, L. Vila¹, R. Sousa¹, L. Buda-Prejbeanu¹, L. Prejbeanu¹ and B. Dieny¹* 1. *SPINtronique et Technologie des Composants, Grenoble, France*
- G4-03. Reservoir Computing With Planar Nanomagnet Arrays.** *P. Zhou¹, A.J. Edwards¹, N.R. McDonald², L. Loomis², C.D. Thiem² and J.S. Friedman¹* 1. *Department of Electrical and Computer Engineering, The University of Texas at Dallas, Richardson, TX, United States*; 2. *Air Force Research Laboratory Information Directorate, Rome, NY, United States*
- G4-04. Superparamagnets for Stochastic Computing. (Invited)** *S. Majetich¹* 1. *Physics, Carnegie Mellon University, Pittsburgh, PA, United States*
- G4-05. Implementation of Artificial Neural Networks Using Stochastic Computing Units Based on Magnetic Tunnel Junctions.** *Y. Shao¹, S. Sinaga¹, I. Sunmola¹, A. Borland¹, M. Carey², J. Katine², V. Lopez Dominguez¹ and P. Khalili Amiri¹* 1. *Electrical and Computer Engineering, Northwestern University, Evanston, IL, United States*; 2. *Western Digital Corp, San Jose, CA, United States*

- G4-06. Superparamagnetic Tunnel Junctions for Invertible Stochastic Logic Gates.** *B. Parks*¹, *H. Chen*¹, *H. Pan*² and *S. Majetich*¹ *1. Physics, Carnegie Mellon University, Pittsburgh, PA, United States; 2. University of Science and Technology of China, Hefei, China*
- G4-07. Neuromorphic Computation Using Emergent Magnetisation Dynamics.** *I.T. Vidamour*¹, *R. Dawidek*¹, *S. Kyle*¹, *P.W. Fry*², *F. Maccherozzi*³, *S.S. Dhese*³, *N. Steinke*⁴, *J.F. Cooper*⁴, *E. Vasilaki*², *D. Allwood*¹ and *T.J. Hayward*¹ *1. Materials Science and Engineering, The University of Sheffield, Sheffield, United Kingdom; 2. The University of Sheffield, Sheffield, United Kingdom; 3. Diamond Light Source Ltd, Didcot, United Kingdom; 4. Isis Neutron and Muon Source, Didcot, United Kingdom*

WEDNESDAY
MORNING
6:00

LIVE Q&A 7

Session G5
2D MAGNETIC MATERIALS: FUNDAMENTAL PROPERTIES
(Poster Session)

Amber McCreary, Chair

National Institute of Standards and Technology, Gaithersburg, MD,
United States

- G5-01. Observation of Semimetallic Behaviour and Resolution of Rashba Split Bands Through Shubnikov de Haas Effect in Topological Insulator Sb_2Te_3 .** *J. Gretton*¹ and *S. Sasaki*¹
1. Condensed Matter Physics, University of Leeds Faculty of Mathematics and Physical Sciences, Leeds, United Kingdom
- G5-02. A First Principles Study for X-ray Spectra of 2-Dimensional Materials - Fe_3GeTe_2 , CrI_3 , and CrGeTe_3 .** *Y. Lee*¹, *B. Harmon*¹ and *L. Ke*¹ *1. Ames Laboratory, Ames, IA, United States*
- G5-03. Using Atomic Hydrogen to Activate Graphene on SiC.** *P. Bentley*¹, *T. Bird*¹, *K. Chan*^{2,1}, *A. Graham*¹, *J.C. Zhang*¹, *A. Ferreira*¹ and *A. Pratt*¹ *1. Department of Physics, University of York, York, United Kingdom; 2. Department of Physics, Imperial College London, London, United Kingdom*
- G5-04. Effect of Magnetic and Electric Fields Work on Cr-Doped $\text{Mo}_{1-x}\text{Cr}_x\text{Se}_2$ ($x=0, 0.5$) Nanosheet.** *Y. Lee*¹, *T. Tsai*¹, *Y. Tung*¹, *C. Kao*¹, *T. Hsu*¹, *W. Wu*¹, *C. Yang*¹ and *K. Lin*² *1. Department of Physics, Chung Yuan Christian University, Chung Li, Taiwan; 2. Department of Chemical Engineering and Materials Science, Yuan Ze University, Chung-Li, Taiwan*

- G5-05. Enhancement of Coercive Field in van der Waals Ferromagnet Fe_5GeTe_2 .** T. Ohta¹, K. Sakai¹, H. Taniguchi¹, B. Driesen⁴, Y. Okada⁴, K. Kobayashi^{1,2} and Y. Niimi^{1,3}
1. Department of Physics, Osaka University, Toyonaka, Japan; 2. Institute for Physics of Intelligence, University of Tokyo, Bunkyo-ku, Japan; 3. Center for Spintronics Research Network, Osaka University, Toyonaka, Japan; 4. Okinawa Institute of Science and Technology Graduate University, Kunigami-gun, Japan
- G5-06. Self-Hybridization of Optical and Acoustic Magnon Modes in van der Waals Magnets.** J. Sklenar¹ and W. Zhang²
1. Wayne State University, Detroit, MI, United States; 2. Oakland University, Rochester, MI, United States
- G5-07. Extended Bloch's law Description of two-Dimensional Dilute Magnetic Semiconductors.** Y. Pham¹, V. Ortiz Jimenez¹, V. Kalappattil¹, B. Muchharla¹, F. Zhang², M. Liu², M. Terrones² and M. Phan¹ *1. University of South Florida, Tampa, FL, United States; 2. The Pennsylvania State University, University Park, PA, United States*
- G5-08. Moir'e Magnons in Twisted Bilayer Magnets With Collinear Order.** Y. Li¹ and R. Cheng¹ *1. University of California, Riverside, Riverside, CA, United States*
- G5-09. Valley Polarization, Magnetic Anisotropy and Dzyaloshinskii-Moriya Interaction in Ferromagnetic Janus 2H-VSeX ($X = \text{S}, \text{Te}$) Monolayers.** S. Qi¹, J. Jiang¹ and W. Mi¹
1. Tianjin University, Tianjin, China
- G5-10. Increased Curie Temperature and Enhanced Perpendicular Magneto Anisotropy of $\text{Cr}_2\text{Ge}_2\text{Te}_6/\text{NiO}$ Heterostructures.** H. Idzuchi^{1,2}, A.E. Llacsahuanga Allcca², X. Pan¹, K. Tanigaki¹ and Y.P. Chen^{2,1} *1. Tohoku University, Sendai, Japan; 2. Purdue University, West Lafayette, IN, United States*
- G5-11. Magnon-Phonon Hybridization in a 2D Antiferromagnet.** T.T. Mai¹, K. Garrity², A. McCreary¹, J. Argo³, J. Simpson⁴, V. Doan-Nguyen³, R. Valdes Aguilar⁵ and A. Hight Walker¹
1. PML, National Institute of Standards and Technology, Gaithersburg, MD, United States; 2. MML, National Institute of Standards and Technology, Gaithersburg, MD, United States; 3. Materials Science and Engineering, The Ohio State University, Columbus, OH, United States; 4. Physics, Astronomy, and Geosciences, Towson University, Towson, MD, United States; 5. Physics, The Ohio State University, Columbus, OH, United States
- G5-12. Withdrawn**
- G5-13. Robust Ferromagnetism in 2D $\alpha\text{-Fe}_2\text{O}_3$ Nanosheets.** J. Mohapatra¹, A. Ramos¹, M. Xing¹, J. Elkins¹, J. Beatty¹ and P. Liu¹ *1. Department of Physics, The University of Texas at Arlington, Arlington, TX, United States*

Session G6
SPECIAL MAGNETIC MATERIALS
(Poster Session)

Takayuki Ishibashi, Chair
Nagaoka University of Technology, Nagaoka, Japan

- G6-01. A Typology for Magnetic Field Generator Technologies.** *N. Bouda*¹, *N. Prabhu Gaunkar*¹, *W. Theh*¹ and *M. Mina*¹
1. Electrical and Computer Engineering, Iowa State University, Ames, IA, United States
- G6-02. Enhancing Magnetic and Magneto-Optical Properties of Praseodymium Substituted Bi-YIG Thin Film on the Glass Substrate by MOD Method.** *T. Thi*¹, *V. Dongquoc*¹, *C. Phuoc*¹, *D. Viet*¹, *H. Ahn*¹ and *J. Jeong*¹ *1. Department of Materials Science and Engineering, Chungnam National University, Daejeon, The Republic of Korea*
- G6-03. Withdrawn**
- G6-04. Withdrawn**
- G6-05. Prospects for Efficient Microwave Energy Harvesting by Thermoelectric Elements Based on the Tunnel Magneto-Seebeck Effect in Magnetic Tunnel Junctions.** *G.D. Demin*¹ and *N.A. Djuzhev*¹ *1. R&D Center "MEMSEC", National Research University of Electronic Technology (MIET), Moscow, Russian Federation*
- G6-06. Design of High-Speed Permanent-Magnet Synchronous Machines Considering Thermal and Mechanical Characteristics of Permanent Magnet.** *T. Bang*¹, *K. Shin*³, *J. Woo*¹, *J. Lee*¹, *H. Cho*¹, *J. Bird*² and *J. Choi*¹ *1. Chungnam National University, Daejeon, The Republic of Korea; 2. Portland State University, Portland, OR, United States; 3. Chonnam National University, Yeosu, The Republic of Korea*
- G6-07. Withdrawn**
- G6-08. The Microwave Absorption Properties of Y₂Fe₁₆Si@MOF and Y₂Fe₁₆Si@GO Composites.** *Y. Wang*¹ and *J. Yang*¹
1. Peking University, Beijing, China
- G6-09. Superconducting Ferromagnet Based on Ni₂NbSn Heusler Alloy.** *S. Nalevanko*^{1,2}, *L. Galdun*¹, *T. Ryba*³, *M. Reiffers*⁴, *J. Kačmarčík*⁵ and *R. Varga*¹ *1. CPM-TIP, UPJS, Trieda SNP 1, 040 11 Kosice, Slovakia, Kosice, Slovakia; 2. UFV, PF UPJS, Kosice, Park Angelinum 9, 040 01 Kosice, Kosice, Slovakia; 3. RVmagnetics, a.s., Nemcovej 30, 04001 Kosice, Slovakia, Kosice, Slovakia; 4. Inst. Phys., Fac. Hum. and Nat. Sci., UNIPO, Ul. 17. Novembra 1, 080 01 Presov, Slovakia, Presov, Slovakia; 5. UEF SAV, Watsonova 47, 04001 Kosice, Slovakia, Kosice, Slovakia*

- G6-10. Study on Structure and Magnetic Properties of $Y_2(Fe,Co)_{14}B$ Melt-Spun Ribbons.** X. Zhang¹, J. Han¹, P. Liu¹, S. Liu¹, C. Wang¹, X. Zhang¹, Q. Xu¹ and Y. Yang¹ *1. School of Physics, Peking University, Beijing, China*
- G6-11. High Frequency Magnetic Properties of Nanostructured $YFe_8Ni_{0.4}B_{0.6}$ /Ferrites/Paraffin Composites.** S. Liu¹, C. Meng^{2,1}, W. Chang-Sheng¹ and J. Yang¹ *1. Physics, Peking University, Beijing, China; 2. School of Physical Science and Technology, Inner Mongolia University, Hohhot, China*
- G6-12. Composition Graded Materials With Different Spatial Distribution of Nanograin: Synthesis and Magnetic Properties.** E. Denisova^{1,2}, L. Chekanova¹, I. Nemtsev¹, R. Iskhakov¹, N. Shepeta² and L. Kuzovnikova³ *1. Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russian Federation; 2. Siberian Federal University, Krasnoyarsk, Russian Federation; 3. Krasnoyarsk Institute of Railways Transport, Krasnoyarsk, Russian Federation*

WEDNESDAY
MORNING
6:30

LIVE Q&A 8

Session H1
AMORPHOUS AND NANOCRYSTALLINE SOFT
MAGNETS

Song Lan, Chair
Chongqing Jiaotong University, Chongqing, China

- H1-01. Fe-ETM-Nb-B (ETM = Cr, Mn) Glassy Alloys for Energy Recovery.** M. Lostun¹, M. Grigoras¹, G. Ababei¹, G. Stoian¹, H. Chiriac¹ and N. Lupu¹ *1. Magnetic Materials and Devices, National Institute of Research and Development for Technical Physics, Iasi, Romania*
- H1-02. Investigating Hidden Devitrification Pathways in the Fe-Si-B System Without Alloying Additions.** X. Zhang¹, A. Jimenez², J. Mesa¹, R. Pérez del Real³, M. Vazquez³ and L. Lewis^{1,2} *1. Mechanical and Industrial Engineering, Northeastern University, Boston, MA, United States; 2. Chemical Engineering, Northeastern University, Boston, MA, United States; 3. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain*
- H1-03. Effects of Magnetostriction on Domain Wall Dynamics Inside Multi-Grains Soft Magnet Revealed by Micromagnetic Simulations.** H. Tsukahara^{1,2}, H. Imamura² and K. Ono¹ *1. Daigaku Kyodo Riyo Kikan Hojin Ko Energy Kasokuki Kenkyu Kiko, Tsukuba, Japan; 2. National Institute of Advanced Industrial Science and Technology Tsukuba Center Tsukuba Central, Tsukuba, Japan*

- H1-04. Iron Loss and Magnetic Properties of Amorphous and Nanocrystalline Ring Core Under Inverter Excitation on the Order of MHz.** A. Yao¹, F. Kato¹ and H. Sato¹ *1. Advanced Power Electronics Research Center; National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*
- H1-05. Local Coercivity at X-Rays Nanobeam Irradiated Regions in Amorphous Fe₈₀B₂₀ Stripes.** U. Urdiroz², E. Navarro², M. Sánchez-Agudo¹, F. Cebollada¹, F. Palomares², G. Martínez Criado² and J.M. González² *1. Universidad Politécnica de Madrid, Madrid, Spain; 2. Instituto de Ciencia de Materiales de Madrid - CSIC, Madrid, Spain*
- H1-06. Soft Magnetic Properties of Co-Based Supersaturated Solid Solutions by Severe Plastic Deformation.** M. Stückerl¹, J. Zálesák¹, H. Krenn², L. Weissitsch¹, S. Wurster¹, C. Gammer¹ and A. Bachmaier¹ *1. Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria; 2. Institute of Physics, Karl-Franzens-Universität Graz, Graz, Austria*
- H1-07. Tunable Magnetic Anisotropy in Amorphous-Fiber-Based Structures for Multiferroic Applications. (Invited)** V. Rodionova¹ *1. Laboratory of Novel Magnetic Materials, Immanuel Kant Baltic Federal University, Kaliningrad, Russian Federation*
- H1-08. Exceptional Magnetomechanical Response of Glass-Coated Amorphous Microwires.** B. Lejeune¹, P. Gueye², D. Archilla², E. Navarro², M. Vazquez^{3,4}, R. Pérez del Real^{3,4}, P. Marin² and L. Lewis^{1,3} *1. Chemical Engineering, Northeastern University, Boston, MA, United States; 2. Departamento de Física de Materiales, Instituto de Magnetismo Aplicado, UCM-ADIF-CSIC, UCM, P.O. Box 155, Las Rozas, Madrid 28230, Spain; 3. Instituto de Ciencia de Materiales de Madrid, CSIC, Sor Juana Inés de la Cruz 3, 28049 Madrid, Spain; 4. Instituto de Magnetismo Aplicado (UCM), Unidad Asociada (CSIC), Madrid, Spain*
- H1-09. Control of the Length of Fe_{73.5}Si_{13.5}Nb₃Cu₁B₉ Microwires to be Used for Magnetic and Microwave Absorbing Purposes.** P. Gueye¹, J. Sanchez¹, E. Navarro¹, A. Serrano² and P. Marin¹ *1. Universidad Complutense de Madrid Instituto de Magnetismo Aplicado, Madrid, Spain; 2. Instituto de Cerámica y Vidrio, Madrid, Spain*
- H1-10. Withdrawn**
- H1-11. Depth Profiling Study of Magnetic CoFeB Thin Film.** J. Dwivedi², M. Gupta¹, V. Reddy¹, A. Mishra², G. Das⁴ and A. Gupta³ *1. University Grants Commission Department of Atomic Energy Consortium for Scientific Research, Indore, India; 2. School of Physics, Devi Ahilya Vishwavidyalaya, Indore, India; 3. Amity University, Noida, India; 4. KEK-High Energy Accelerator Research Organization, Tsukuba, Japan*

- H1-12. Magnetism and Transport Signatures in Amorphous Transition Metal Silicide and Transitional Metal Germanide Thin Films.** D. Bouma^{1,2}, J. Karel^{3,4}, C. Fuchs¹, P. Corbae⁵, N.D. Reynolds^{2,1} and F. Hellman^{1,2} 1. *Physics, University of California Berkeley, Berkeley, CA, United States*; 2. *Materials Science Division, E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States*; 3. *Materials Science and Engineering, Monash University, Clayton, VIC, Australia*; 4. *ARC Centre of Excellence in Future Low-Energy Electronics Technologies, Clayton, VIC, Australia*; 5. *Materials Science and Engineering, University of California Berkeley, Berkeley, CA, United States*
- H1-13. The Improvement of the CoZrTaB Thin Films on Different Substrates for Flexible Device Applications.** Y. Wu¹, I. Yeng² and H. Yu¹ 1. *Electrical, Computer and Energy Engineering, Arizona State University, Tempe, AZ, United States*; 2. *Materials Science and Engineering, Arizona State University, Tempe, AZ, United States*
- H1-14. Magnetic Metal Oxide Nanoparticles for a Remote 3D Thermometry Platform.** A.J. Biacchi¹, T.Q. Bui¹, B. Correa¹, C. Dennis¹, S. Woods¹ and A.R. Hight Walker¹ 1. *National Institute of Standards and Technology (NIST), Gaithersburg, MD, United States*
- H1-15. Temperature Dependence of the Dzyaloshinskii-Moriya Constant in Ultrathin Pt/Co(Fe)B/Ir Films.** K.N. Alshammari¹, L. Benito¹, R. Temple¹, M. Alyami¹, M. Ali¹, P.S. Keatley², T. Forrest³, F. Maccherozzi³, S. Cavill⁴ and T. Moore¹ 1. *University of Leeds, Leeds, United Kingdom*; 2. *University of Exeter, Exeter, United Kingdom*; 3. *Diamond Light Source Ltd, Diamond Light Source Ltd, Harwell, Harwell, United Kingdom*; 4. *University of York, York, United Kingdom*

WEDNESDAY
MORNING
6:30

LIVE Q&A 8

Session H2 EMERGENT PHENOMENA IN COMPLEX OXIDES AND NITRIDES

Catherine Pappas, Chair
Delft University of technology, Delft, Netherlands

- H2-01. Colossal Acoustoelectric Effect in $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$.** P.N. Lapa¹, M. Lee¹, I. Chiu², Y. Takamura³ and I.K. Schuller¹
1. *Department of Physics, University of California San Diego, La Jolla, CA, United States*; 2. *Department of Chemical Engineering, University of California Davis, Davis, CA, United States*; 3. *Department of Materials Science and Engineering, University of California Davis, Davis, CA, United States*

- H2-02. Rashba-Like Spin-Orbit Coupling in the Strained Ferroelectric PbTiO₃.** *J. Gosteau*¹, *R. Arras*¹, *C. Paillard*², *H. Zhao*³ and *L. Bellaiche*³ *1. CEMES, Centre d'Elaboration de Materiaux et d'Etudes Structurales, Toulouse, France; 2. Laboratoire SPMS, CentraleSupélec/CNRS UMR8580, Université Paris-Saclay, Gif-sur-Yvette, France; 3. Physics Department and Institute for Nanoscience and Engineering University of Arkansas, Fayetteville, AR, United States*
- H2-03. Structural and Magnetic Properties of Perovskite LaCo_{0.5}Fe_{0.5}O₃ Nanostructures Sintered at Various Temperatures.** *E. Sert*^{1,2}, *M. Kaynar*^{2,3}, *C. Ünlü*⁴, *B. Kalkan*⁵ and *S. Özcan*^{2,3} *1. Physics, Cankiri Karatekin Universitesi, Cankiri, Turkey; 2. Nanotechnology and Nanomedicine, Hacettepe Universitesi, Graduate School of Science and Engineering, Ankara, Turkey; 3. Physics Engineering, SNTG Lab. Hacettepe University, Ankara, Turkey; 4. Biomedical Engineering, Pamukkale Universitesi Muhendislik Fakultesi, Denizli, Turkey; 5. Physics Engineering, Hacettepe Universitesi, Mühendislik Fakültesi, Ankara, Turkey*
- H2-04. Electronic Structure and Magnetism of Half-Metallic Quadruple Perovskite ACu₃Fe₂Re₂O₁₂(a=Ca, Sr, Ba, Pb, Sc, Y, La) by First Principles Theory.** *D. Wang*¹, *M. Shaikh*², *S. Ghosh*² and *B. Sanyal*¹ *1. Physics and Astronomy, Uppsala Universitet, Uppsala, Sweden; 2. Department of Physics and Nanotechnology & SRM Research Institute, SRM University, SRM Institute of Science and Technology, Kattankulathur, India*
- H2-05. Thermal Decomposition of GdCrO₄ to GdCrO₃: Structure and Magnetism.** *P. Mohanty*¹, *S. Jacobs*¹, *A. Prinsloo*¹ and *C. Sheppard*¹ *1. Physics, University of Johannesburg, Johannesburg, South Africa*
- H2-06. Withdrawn**
- H2-07. Hidden Multipolar Orders in 5d¹ Ba₂MgReO₆,** *A. Mansouri Tehrani*¹ and *N.A. Spaldin*¹ *1. Eidgenössische Technische Hochschule Zurich - Campus Honggerberg, Zurich, Switzerland*
- H2-08. Clinching Experimental Evidence of “Room Temperature Ferromagnetic Behavior” in 5 mol% Mn Doped SrTiO₃.** *P. K R S*¹, *P. Janolin*², *U. Luders*³ and *K. Varma*⁴ *1. Materials Science, Central University of Tamil Nadu, Tiruvarur, India; 2. SPMS, CentraleSupélec Bibliothèques, Gif-sur-Yvette, France; 3. Materials Science, Laboratoire de Cristallographie et Sciences des Matériaux, Caen, France; 4. Materials Science, Indian Institute of Science, Bangalore, India*
- H2-09. Interfacial Tuning of Chiral Magnetic Interactions for Large Topological Hall Effects in LaMnO₃/SrIrO₃ Heterostructures. (Invited)** *E. Skoropata*¹, *J. Nichols*¹, *J. Ok*¹, *R.V. Chopdekar*², *E. Choi*³, *A. Rastogi*¹, *C. Sohn*¹, *X. Gao*¹, *T. Farmer*¹, *R. Desautels*¹, *Y. Choi*⁴, *D. Haskel*⁴, *J.W. Freeland*⁴, *S. Okamoto*¹, *M. Brahlek*¹ and *H. Lee*¹ *1. Oak Ridge National Laboratory, Oak Ridge, TN, United States; 2. E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 3. National High Magnetic Field Laboratory, Tallahassee, FL, United States; 4. Argonne National Laboratory Advanced Photon Source, Lemont, IL, United States*
- H2-10. Withdrawn**

H2-11. **Withdrawn**

H2-12. **Nuclear Magnetic Resonance and Relaxation in Uranium Mononitride.** *A.Y. Germov*¹, *V.V. Ogloblichev*¹, *S.V. Verkhovskii*¹, *A.M. Potapov*² and *A.V. Andreev*³ *1. M N Mikheev Insititute of metal physics of the Ural Branch of the Russian Academy of Sciences, Yekaterinburg, Russian Federation; 2. The Institute of High Temperature Electrochemistry of the Ural Branch of the Russian Academy of Sciences, Yekaterinburg, Russian Federation; 3. FZU Institute of Physics, Czech Academy of Sciences, Prague, Czechia*

WEDNESDAY
MORNING
6:30

LIVE Q&A 8

Session H3
HARD MAGNETIC MATERIALS: SM-BASED INTERMETALLICS AND OTHERS

Yanglong Hou, Chair
Peking University, Beijing, China

- H3-01. **Intrinsic and Extrinsic Properties of Sm(FeCo)₁₂ With ThMn₁₂ Structure.** *(Invited) Y. Takahashi*¹ *1. Busshitsu Zairyo Kenkyu Kiko, Tsukuba, Japan*
- H3-02. **Study on Phase Relations of Sm-Fe,Co-Ti-(Ga) System Towards Development of SmFe₁₂-Based Permanent Magnets.** *S. Ashok Krishnaswamy*^{1,2}, *H. Sepehri Amin*¹, *X. Tang*¹, *P. Tozman*¹, *S. Kobayashi*³, *T. Ohkubo*¹ and *K. Hono*^{1,2} *1. Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science, Tsukuba, Japan; 2. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; 3. Japan Synchrotron Radiation Research Institute (JASRI), Sayo, Japan*
- H3-03. **Combinatorial Study of Sm-Co-Ti Amorphous Hard Magnet Thin Films.** *P. Rani*¹, *E. Carneiro*¹, *G. Muscas*¹, *H. Stopfel*¹, *D. Primetzhofer*¹, *P.E. Jönsson*¹ and *G. Andersson*¹ *1. Uppsala University, Uppsala, Sweden*
- H3-04. **Micromagnetic Simulation Study on Coercivity in CeCo₅ Magnet.** *X. Liu*¹ and *I.C. Nlebedim*¹ *1. Ames Laboratory, Ames, IA, United States*
- H3-05. **Design of Sm-Fe-N Magnets.** *T. Saito*¹ *1. Chiba Institute of Technology, Narashino, Japan*
- H3-06. **Withdrawn**
- H3-07. **Nitrided ThMn₁₂-Type Compounds for Sustainable Advanced Manufacturing.** *D. Salazar*¹ *1. BCMaterials, Basque Center for Materials Applications and Nanostructures, Leioa, Spain*

- H3-08. Production of Sm(Fe,Ti)₁₂ Magnets by hot Deformation.** T. Saito¹, Y. Ogawa¹ and D. Nishio-Hamane² *1. Chiba Institute of Technology, Narashino, Japan; 2. Institute for Solid State Physics, The University of Tokyo, Kashiwa, Japan*
- H3-09. Grain Boundary Segregation, Phase Formation, and Their Influence on the Coercivity of Rapidly Solidified SmFe₁₁Ti Hard Magnetic Alloys.** S. Ener¹, F. Maccari¹, D. Palanisamy², L. Schaefer¹, K. Skokov¹, D. Raabe², B. Gault² and O. Gutfleisch¹ *1. Functional Materials, Technische Universität Darmstadt Fachbereich Material- und Geowissenschaften, Darmstadt, Germany; 2. Max-Planck-Institut für Eisenforschung GmbH, Dusseldorf, Germany*
- H3-10. Recent Advances in SmFe₁₂-Based Hard Magnetic Materials. (Invited)** H. Sepehri Amin¹, Y. Tamazawa², M. Kambayashi², G. Saito², Y. Takahashi¹, D. Ogawa¹, T. Ohkubo¹, S. Hirose¹, M. Doi², T. Shima² and K. Hono¹ *1. Busshitsu Zairyo Kenkyu Kiko, Tsukuba, Japan; 2. Tohoku Gakuin Daigaku, Sendai, Japan*
- H3-11. Withdrawn**
- H3-12. Withdrawn**
- H3-13. The Influence of Grain Size on the Internal Oxidation of Sm₂Co₁₇ Sintered Magnets.** A.R. Campbell¹ and R.S. Sheridan¹ *1. School of Metallurgy and Materials, University of Birmingham, Birmingham, United Kingdom*
- H3-14. Epitaxy Induced Controlled Phase Separation in Y-Co and Sm-Co Thin Films.** S. Sharma¹, D. Ohmer¹, A. Zintler¹, D. Guenzing², M. Major¹, I. Radulov¹, P. Komissinskiy¹, B. Xu¹, H. Zhang¹, K. Ollefs², K. Skokov¹, L. Molina-Luna¹ and L. Alff¹ *1. Institute of Materials Science, Technische Universität Darmstadt, Darmstadt, Germany; 2. Universität Duisburg-Essen, Duisburg, Germany*

WEDNESDAY
MORNING
6:30

LIVE Q&A 8

Session H4
FERRITES AND GARNETS II
(Poster Session)

Feng Xu, Chair
Nanjing University of Science and Technology, Nanjing, China

- H4-01. Influence of Size and Shape on key Performance Metrics in Spin-Torque Oscillators.** B.R. Zink¹, Y. Lv¹ and J. Wang¹ *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*

- H4-02. Characterization of NiFe and Silicon Dioxide Multilayers for on-Wafer Inductors Operating at Radio and Low GHz Frequencies.** *S. Goldman*¹ and *Z. Celinski*¹ *1. Physics, University of Colorado at Colorado Springs, Colorado Springs, CO, United States*
- H4-03. Simultaneous Measurement of Permeability and Permittivity Using a Flexible Microstrip Line-Type Probe up to 67 GHz.** *S. Yabukami*^{1,2}, *K. Nozawa*², *L. Ton That*² and *K. Okita*¹ *1. Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan; 2. Graduate School of Engineering, Tohoku University, Sendai, Japan*
- H4-04. Consideration on Lowering Loss Design of Skin Effect Suppressed Multi-Layer Transmission Line With Positive/Negative (Cu/NiFe) Permeability Materials for High Data-Rate and Low Delay-Time I/O Interface Board.** *K.H. Kubomura*¹, *Y. Aizawa*¹, *H. Nakayama*², *R. Hara*² and *H. Tanaka*² *1. Advanced Course of Production and Environment System, National Institute of Technology (KOSEN), Nagano College, Nagano, Japan; 2. Department of Electronics and Control Engineering, National Institute of Technology (KOSEN), Nagano College, Nagano, Japan*
- H4-05. The Effect of Praseodymium and Samarium Substitution in Inverse Spinel Nickel Ferrite: Structural, Magnetic, and Mossbauer Study.** *D. Guragain*¹, *S.R. Mishra*¹, *T.P. Poudel*¹, *B.K. Rai*² and *S. Yoon*³ *1. Department of Physics and Material Science, The University of Memphis, Memphis, TN, United States; 2. Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN, United States; 3. Department of Physics, Kunsan National University, Gunsan, The Democratic People's Republic of Korea*
- H4-06. Withdrawn**
- H4-07. Synthesis of Reduced Graphene Oxide/CoFe₂O₄ Composite Particles and Their Magnetorheological Characteristics.** *Y. Dong*¹ and *H. Choi*¹ *1. Polymer Science and Engineering, Inha University, Incheon, The Republic of Korea*
- H4-08. Magnetic Performance Improvement Caused by Tensile Stress in Equivalent Iron Core Fabricated by High-Strength Non-Oriented Electrical Steel.** *L. Gao*¹, *H. ZHANG*² and *R. Pei*³ *1. Suzhou Inn-mag New Energy Ltd., Suzhou, China; 2. Universite de Technologie de Troyes, Troyes, France; 3. Shenyang University of Technology, Shenyang, China*
- H4-09. Withdrawn**
- H4-10. Withdrawn**
- H4-11. Withdrawn**
- H4-12. Withdrawn**

Session H5
HALF-METALLIC MATERIALS AND MAGNETIC SEMICONDUCTORS
(Poster Session)

Simon Granville, Chair
Victoria University of Wellington, Lower Hutt, New Zealand

- H5-01. Synthesis and Characterization of ScPtBi Thin Films.**
Ö. Polat^{1,2}, *I. Mohelsky*^{1,2}, *J. Polčák*^{1,2}, *J. Ander Arregi Uribeetxebarria*¹ and *T. Sikola*^{1,2} *1. Stredoevropsky technologicky institut, Brno, Czechia; 2. Vysoke uceni technicke v Brne, Brno, Czechia*
- H5-02. Electroresistivity, Magnetic and Galvanomagnetic Properties of Co-Based Heusler Alloys in the States of Half-Metallic Ferromagnet and Spin Gapless Semiconductor.**
*A. Semiannikova*¹, *V. Irkhin*¹, *Y.A. Perevozchikova*¹, *P. Korenistov*¹ and *V. Marchenkov*^{1,2} *1. M N Mikheev Institute of Metal Physics of the Ural Branch of the Russian Academy of Sciences, Ekaterinburg, Russian Federation; 2. Ural Federal University named after the first President of Russia B N Yeltsin, Ekaterinburg, Russian Federation*
- H5-03. Co₂FeSn Heusler Nanowires With High Spin Polarization.**
L. Galdun^{1,3}, *P. Szabo*², *V. Vega*³, *E. Barriga-Castro*⁴, *R. Mendoza-Reséndez*⁵, *C. Luna*⁵, *J. Kovac*², *O. Milkovic*^{6,2}, *R. Varga*¹ and *V.M. Prida*³ *1. Center for Progressive Materials, TIP, UPJS, Kosice, Slovakia; 2. Institute of Experimental Physics, Slovak Academy of Sciences, Kosice, Slovakia; 3. Departamento de Física, Facultad de Ciencias, Universidad de Oviedo, Oviedo, Spain; 4. Centro de Investigación en Química Aplicada, Coahuila, Mexico; 5. Universidad Autónoma de Nuevo León, Nuevo León, Mexico; 6. Institute of Materials Research, Slovak Academy of Sciences, Kosice, Slovakia*
- H5-04. Preparation and Thermoelectric Properties of Mn₂CoAl Inverse Full-Heusler Alloy.** *H. Li*¹, *Y. Nagashima*¹, *K. Hayashi*¹ and *Y. Miyazaki*¹ *1. Tohoku Daigaku Daigakuin Kogaku Kenkyuka Kogakubu, Sendai, Japan*
- H5-05. Magnetic Properties of Co₂MeSi and Co₂MeAl (Me = Ti, v, Cr, Mn, Fe, Co, Ni) Half-Metallic Heusler Alloys.**
*Y.A. Perevozchikova*¹, *A. Semiannikova*¹, *V. Irkhin*¹ and *V. Marchenkov*^{1,2} *1. IMP UB RAS, Ekaterinburg, Russian Federation; 2. UrFU, Ekaterinburg, Russian Federation*
- H5-06. Magnetotransport Properties of Ru Doped Cobalt Ferrite Thin Film With Perpendicular Magnetic Anisotropy.** *M. P¹* and *A.K. P S¹* *1. Physics, Indian Institute of Science, Bangalore, India*
- H5-07. Magnetic and Electronic Properties of Transition Metal Doped Aluminium Nitride: Haldane's Approach Combined With ab Initio Results.** *P. Harikumar*¹ *1. materials science group, Indira Gandhi Centre for Atomic Research, Kalpakkam, India*

- H5-08. Temperature Controlled Anomalous Hall Voltage Switching in Co/Gd Ferrimagnet Near Compensation.** *L.A. Hernandez¹, R.W. Greening¹, M. Roos¹, X. Fan¹ and B.L. Zink¹ 1. Physics and Astronomy, University of Denver, Denver, CO, United States*

WEDNESDAY
MORNING
9:00

SYMPOSIA

Session S4

ANTIFERROMAGNETIC SPINTRONICS: TRANSPORT AND DYNAMICS IN METALS, INSULATORS AND MAGNETIC TUNNEL JUNCTIONS

Xin Fan, Chair
University of Denver, Denver, CO, United States

9:00

- S4-01. Theory of Spin Transport and Torque in Non-Collinear Antiferromagnets. (Invited)** *A. Manchon¹ 1. Aix-Marseille Universite, Marseille, France*

9:36

- S4-02. Sub-Terahertz Antiferromagnetic Spin Pumping in Cr₂O₃. (Invited)** *J. Shi¹, J. Li¹, C. Wilson², M. Lohmann¹, R. Cheng¹, M. Kavand², W. Yuan¹, M. Aldosary¹, N. Agladze², P. Wei¹ and M. Sherwin² 1. University of California Riverside, Riverside, CA, United States; 2. University of California Santa Barbara, Santa Barbara, CA, United States*

10:12

- S4-03. Voltage-Controlled Antiferromagnetism in Magnetic Tunnel Junctions. (Invited)** *W. Wang¹ 1. Physics, University of Arizona, Tucson, AZ, United States*

10:48

- S4-04. Antiferromagnetic Insulatronics: Spintronics Without Magnetic Fields and Moving Charges. (Invited)** *P. Kläui¹ 1. Physics, Johannes Gutenberg-Universität Mainz Fachbereich Physik Mathematik und Informatik, Mainz, Germany*

11:24

- S4-05. Magnetic Spin Hall Effects in Topological Chiral Antiferromagnets. (Invited)** *Y. Otani^{1,2} 1. Institute for Solid State Physics, Tokyo Daigaku, Bunkyo-ku, Japan; 2. Center for Emergent Matter Science, Rikagaku Kenkyujo, Wako, Japan*

Session I1
INNOVATIVE MAGNETICS DESIGN AND APPLICATIONS

Joe Davies, Chair
NVE Corporation, Eden Prairie, MN, United States

- 11-01. Thermomagnetic Harvesting of low Temperature Waste Heat. (Invited) S. Fähler¹ I. IMW, Leibniz IFW Dresden, Dresden, Germany**
- 11-02. On-Chip Thin-Film Microtransformer With Improved Coupling Factor for High Frequency Data Transmission. D. Dinulovic¹, M. Shousha¹ and M. Haug¹ I. Mag13C R&D Division, Wuerth Elektronik eiSos GmbH & Co. KG, Garching, Germany**
- 11-03. Power Conversion Efficiency Prioritized AC Filter Inductor Design for Three-Phase PWM Inverter. H. Matsumori¹, D. Mizutani¹, T. Kosaka¹, N. Matsui¹, T. Miyazaki² and Y. Okawauchi² I. Nagoya Kogyo Daigaku, Nagoya, Japan; 2. ROHM Co., Ltd, Kyoto, Japan**
- 11-04. Fast and in Situ Remanent Flux Detection Method for a Protection Current Transformer Based on the Fluxgate Theory. T. Zheng¹ and Y. Wang¹ I. College of Electrical Engineering, Zhejiang University, Hangzhou, China**
- 11-05. Optically Powered Diamagnetically Levitated Robots for Biomedical Applications. M. Beauchamp¹, S. Yee¹ and H. ElBidweihy¹ I. Electrical and Computer Engineering, United States Naval Academy, Annapolis, MD, United States**
- 11-06. Permanent Magnet Dipole Design With Strong in-Plane Magnetic Field. C. Li¹, D. Adeyemo¹, B. Zhang¹ and A. Radomski² I. R&D Engineering, dexter magnetic technologies, Elk Grove Village, IL, United States; 2. manufacturing, Dexter Magnetic Technologies inc, Elk Grove Village, IL, United States**
- 11-07. Iron Loss and Hysteresis Properties of Magnetic Materials Excited by Multi Level PWM Inverter. A. Yao¹, F. Kato¹ and H. Sato¹ I. Advanced Power Electronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan**
- 11-08. Withdrawn**
- 11-09. Parameter Identification of Preisach Model Based on Velocity-Controlled Particle Swarm Optimization Method. L. Chen^{1,2}, Q. Yi¹, T. Ben¹, H. Xiong¹ and Y. Wang² I. China Three Gorges University, Yichang, China; 2. Hebei University of Technology, Tianjin, China**

Session I2
MICROWAVE AND OPTICAL MAGNETIC
MATERIALS

Xinjun Wang, Chair

University of Maryland, Boston, MA, United States

- 12-01. Development of Magnetic Core/Shell Nanostructures for 5G mm Wave Absorbers.** *J. Han*¹, *A. Baker*¹, *A. Troksa*¹, *d. Qu*¹ and *S. Mccall*¹ *1. Lawrence Livermore National Laboratory, Livermore, CA, United States*
- 12-02. Giant Nonreciprocity in Magnetoacoustic Devices. (Invited)** *P.J. Shah*^{1,2}, *D.A. Bas*¹, *I. Lisenkov*³, *A. Matyushov*⁴, *N.X. Sun*⁴ and *M. Page*¹ *1. Air Force Research Laboratory, Wright-Patterson AFB, OH, Wright-Patterson AFB, OH, United States; 2. Apex Microdevices, West Chester, OH, United States; 3. Independent Researcher, Newton Upper Falls, MA, United States; 4. Northeastern University, Northeastern University, Boston, MA, Boston, MA, United States*
- 12-03. Multiferroic Lamb Wave Antenna With Energy Reflecting Components.** *R. Zheng*¹, *V.M. Estrada*¹ and *A. Sepulveda*¹ *1. MAR, University of California Los Angeles, Los Angeles, CA, United States*
- 12-04. Hexagonal Ferrite Composite and Sintered Slab Noise Suppressor Embedded in-Between IC Chip and Interposer.** *A. Takahashi*¹, *Y. Miyazawa*¹, *M. Yamaguchi*^{1,2}, *R. Sai*⁴, *S. Tanaka*³, *K. Jike*³, *K. Watanabe*³ and *M. Nagatana*³ *1. New Industry Creation Hatchery Center, Tohoku University, Sendai, Japan; 2. Department of Electrical Engineering, Tohoku Gakuin Daigaku, Sendai, Japan; 3. Graduate School of Science, Technology and Innovation, Kobe University, Kobe, Japan; 4. Centre for Nano Science and Engineering, Indian Institute of Science, Bengaluru, India*
- 12-05. Broadband-Millimeter-Wave Absorber Based on Ti-Co Substituted ϵ -Iron Oxide.** *A. Namai*¹, *K. Ogata*¹, *M. Yoshikiyo*¹ and *S. Ohkoshi*¹ *1. Department of Chemistry, School of Science, The University of Tokyo, Bunkyo-ku, Japan*
- 12-06. Single-Pulse all-Optical Toggle Switching of Magnetization Without a Rare Earth. (Invited)** *J. Besbas*¹, *C. Banerjee*¹, *K.E. Siewierska*¹, *G. Atcheson*¹, *N. Teichert*¹, *P.S. Stamenov*¹, *K. Rode*¹ and *M. Coey*¹ *1. School of Physics, Trinity College Dublin, Dublin, Ireland*
- 12-07. Linear Chains of Nanomagnets: Engineering the Effective Magnetic Anisotropy.** *A. Talapatra*¹ and *A. Adeyeye*^{1,2} *1. Department of Electrical and Computer Engineering, National University of Singapore - Kent Ridge Campus, Singapore, Singapore; 2. Physics, Durham University, Durham, United Kingdom*
- 12-08. Withdrawn**

- 12-09. Controlling Magnetic Properties of the van der Waals Crystal MnPS₃ via the Absorption Spectrum.** *M. Birowska*¹ and *J. Kunstmann*² *1. Faculty of Physics, University of Warsaw, Warsaw, Poland; 2. Theoretical Chemistry, Department of Chemistry and Food Chemistry TU Dresden, Dresden, Germany*
- 12-10. Enhanced Magneto-Optical Effect in Ce:YIG Based All Dielectric Metasurfaces.** *X. Shuang*¹, *Q. Liu*², *J. Qin*¹, *Y. Chen*², *H. Duan*², *L. Deng*¹ and *L. Bi*¹ *1. National Engineering Research Center of Electromagnetic Radiation Control Materials, University of Electronic Science and Technology of China, Chengdu, China; 2. College of Mechanical and Vehicle Engineering National Engineering Research Center for High Efficiency Grinding, Hunan University, Changsha, China*
- 12-11. Design of Tb_xCo_{100-x} for All Optical Switching of Magnetization.** *A. Ciuciulkaite*¹, *K. Mishra*², *M.V. Moro*¹, *I. Chioar*¹, *R. Rowan-Robinson*³, *S. Parchenko*⁴, *A. Kleibert*⁴, *B. Lindgren*¹, *G. Andersson*¹, *C. Davies*⁵, *A. Kimel*², *M. Beritta*¹, *P.M. Oppeneer*¹, *A. Kirilyuk*⁵ and *V. Kapaklis*¹ *1. Physics and Astronomy, Uppsala Universitet, Uppsala, Sweden; 2. Radboud Universiteit Institute for Molecules and Materials, Nijmegen, Netherlands; 3. Department of Material Science and Engineering, The University of Sheffield, Sheffield, United Kingdom; 4. Swiss Light Source, Paul Scherrer Institut, Villigen, Switzerland; 5. FELIX laboratory, Radboud Universiteit, Nijmegen, Netherlands*
- 12-12. Waveguide Integrated Broadband Magneto-Optical Isolators on Silicon Nitride Platforms.** *W. Yan*^{1,2}, *Y. Yang*^{1,2}, *S. Liu*^{1,2}, *J. Qin*^{1,2}, *L. Deng*^{1,2} and *L. Bi*^{1,2} *1. National Engineering Research Center of Electromagnetic Radiation Control Materials, University of Electronic Science and Technology of China, Chengdu, China; 2. State Key Laboratory of Electronic Thin-Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*
- 12-13. Magneto-Optical Detection of Photoinduced Magnetism via Chirality Induced Spin Selectivity in 2D Chiral Hybrid Organic-Inorganic Perovskites.** *Z. Huang*¹, *B. Bloom*², *X. Ni*³, *Z. Georgieva*², *M. Marciesky*², *E. Vetter*¹, *f. liu*³, *D. Waldeck*² and *D. Sun*¹ *1. Physics, North Carolina State University, Raleigh, NC, United States; 2. Chemistry, University of Pittsburgh, Pittsburgh, PA, United States; 3. Material Science and Engineering, Univeristy of Utah, Salt Lake City, UT, United States*
- 12-14. Interfacial and Bulk Magnetic Properties of Stoichiometric Cerium Doped Terbium Iron Garnet Polycrystalline Thin Films.** *K. Srinivasan*¹, *C. Radu*², *D. Bilardello*³, *P. Solheid*³ and *B. Stadler*¹ *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; 2. Lake Shore Cryotronics Inc., Westerville, OH, United States; 3. Institute for Rock Magnetism, Department of Earth and Environmental Sciences, University of Minnesota, Minneapolis, MN, United States*
- 12-15. Optical Vortex and Ferrocene: a Comparative Study.** *A. Tufaile*², *T.A. Vanderelli*¹, *M. Snyder*³ and *A.P. Tufaile*² *1. Ferrocene USA, Ligonier, PA, United States; 2. Soft Matter Lab/EACH, Universidade de Sao Paulo, Sao Paulo, Brazil; 3. Morehead State University, Morehead, KY, United States*

- 12-16. **GaN Based High Strength Magnetic Field Pulser.** *W. Theh¹, N. Prabhu Gaunkar¹ and M. Mina¹* 1. *Electrical and Computer Engineering, Iowa State University, Ames, IA, United States*

WEDNESDAY
MORNING
12:00

LIVE Q&A 9

Session I3
SKYRMION IMAGING

David Burn, Chair
Diamond Light Source Ltd, Didcot, United Kingdom

- 13-01. **Real-Space Imaging of Confined Magnetic Skyrmion Tubes.** *(Invited) M.T. Birch^{1,2}, D. Cortés-Ortuño³, L. Turnbull¹, M. Wilson¹, F. Gross⁴, N. Träger⁴, A. Laurenson⁵, N. Bukin⁵, S. Moody¹, M. Weigand⁶, G. Schütz⁴, H. Popescu⁷, R. Fan², P. Steadman², J. Verezhak⁸, G. Balakrishnan⁸, J. Loudon⁹, A. Twitchett-Harrison⁹, O. Hovorka³, H. Fangohr^{3,10}, F. Ogrin⁵, J. Gräfe⁴ and P. Hatton¹* 1. *Durham University, Durham, United Kingdom*; 2. *Diamond Light Source Ltd, Didcot, United Kingdom*; 3. *University of Southampton, Southampton, United Kingdom*; 4. *Max Planck Institute for Intelligent Systems, Stuttgart, Germany*; 5. *University of Exeter, Exeter, United Kingdom*; 6. *Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany*; 7. *Synchrotron SOLEIL, Gif-sur-Yvette, France*; 8. *University of Warwick, Coventry, United Kingdom*; 9. *Cambridge University, Cambridge, United Kingdom*; 10. *European XFEL GmbH, Schenefeld, Germany*
- 13-02. **Fractal Analysis of Magnetic Domain From Ferromagnetic to Skyrmion States in MgO/Mn₂CoAl/Pd Ultrathin Films.** *G. Dubuis^{1,2}, Y. Zhang^{1,2}, T.J. Butler^{1,2} and S. Granville^{1,2}* 1. *Robinson Research Institute, Victoria University of Wellington, Wellington, New Zealand*; 2. *MacDiarmid Institute for Advanced Materials and Nanotechnology, Wellington, New Zealand*
- 13-03. **Domain Wall Skyrmions: Examining Domain Wall Substructures in [Pt/(Co/Ni)_M/Ir]_N Multi-Layers.** *M.P. Li¹, A. Sapkota², A. Rai², A. Pokhrel², T. Mewes², D. Xiao^{3,1}, C. Mewes², M. De Graef¹ and V. Sokalski¹* 1. *Materials Science & Engineering, Carnegie Mellon University, Pittsburgh, PA, United States*; 2. *Department of Physics and Astronomy/MINT Center, The University of Alabama, Tuscaloosa, AL, United States*; 3. *Department of Physics, Carnegie Mellon University, Pittsburgh, PA, United States*
- 13-04. **Utilizing Vacuum States Above Surfaces for Imaging and Manipulation of Atomic-Scale Magnetism.** *(Invited) A. Schlenhoff¹* 1. *Department of Physics, University of Hamburg, Hamburg, Germany*

- 13-05. Antiferromagnetically-Coupled Skyrmion Lattices in Topological Insulator/Ferrimagnet Heterostructures.** *H. Wu*¹, F. Gross², B. Dai¹, D. Lujan³, S. Razavi¹, P. Zhang¹, X. Li³, J. Gräfe² and K. Wang¹ *1. University of California Los Angeles, Los Angeles, CA, United States; 2. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 3. The University of Texas at Austin, Austin, TX, United States*
- 13-06. Room-Temperature Skyrmions at Zero Field in Exchange-Biased Ultrathin Films.** *F. Fabre*¹, K. Rana², A. Finco¹, S. Chouaieb¹, A. Haykal¹, L. Buda-Prejbeanu², O. Fruchart², S. Le Denmat³, P. David³, M. Belmeguenai⁴, T. Denneulin⁵, R. Dunin-Borkowski⁵, G. Gaudin², O. Boulle² and V. Jacques¹ *1. Laboratoire Charles Coulomb, Montpellier, France; 2. SPINtronique et Technologie des Composants, Grenoble, France; 3. Institut NEEL, Grenoble, France; 4. Laboratoire des Sciences des Procédés et des Matériaux, Villetaneuse, France; 5. Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons and Peter Grünberg Institute, Jülich, Germany*
- 13-07. Magnetic Skyrmions in Epitaxial Thin Films of $a_2\text{Mo}_3\text{N}$ With the Filled β -Mn-Type Structure.** *B. Qiang*¹, N. Togashi¹, S. Wada¹, S. Momose¹, T. Hajiri¹, M. Kuwahara¹ and H. Asano¹ *1. Nagoya Daigaku, Nagoya, Japan*
- 13-08. Significant Anisotropy and Creation of Skyrmions Induced by Chemisorbed Hydrogen.** *G. Chen*¹, A. Quintana², A.K. Schmid³ and K. Liu^{2,1} *1. Physics Department, University of California, Davis, Davis, CA, United States; 2. Physics Department, Georgetown University, Washington, DC, United States; 3. Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA, United States*
- 13-09. Room-Temperature Magnetic Imaging of Antiferromagnetic Skyrmions in Multi-Repeats Synthetic Antiferromagnets.** *Y. Sassi*¹, W. Legrand¹, F. Ajejas¹, S. Collin¹, K. Bouzehouane¹, A. Vecchiola¹, N. Reyren¹, V. Cros¹ and A. Fert¹ *1. Unité Mixte de Physique, CNRS, Thales, Univ. Paris-Sud, Université Paris-Saclay, 91767 Palaiseau, France*
- 13-10. Zero-Field Room Temperature Skyrmion Lattice Stabilized by Interlayer Electronic Coupled Bias Layer.** *F. Ajejas*¹, Y. Sassi¹, W. Legrand¹, S. Collin¹, K. Bouzehouane¹, N. Reyren¹, V. Cros¹ and A. Fert¹ *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France*
- 13-11. Chirality Switch of Magnetic Skyrmion in Ta/FeCoB/TaOx Trilayers.** *C. Fillion*¹, R. Kumar¹, B. Lavery¹, I. Benguettat-El Mokhtari³, I. Joumard¹, S. Auffret¹, L. Ranno², Y. Roussigné³, S. Chérif³, A. Stashkevich³, M. Belmeguenai³, C. Baraduc¹ and H. Béa¹ *1. SPINtronique et Technologie des Composants, Grenoble, France; 2. CNRS, Néel Institute, Grenoble, France; 3. Université Sorbonne Paris Nord, LPSM, CNRS, UPR 3407, F-93430 Villetaneuse, France*

Session I4

STRAIN & DOPING EFFECTS IN THIN FILMS

Daniel Salazar, Chair
BCMaterials, Derio, Spain

- I4-01. Curvilinear Magnetism: Fundamentals and Applications.** *(Invited)* D. Makarov¹ 1. *Intelligent Materials and Systems, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*
- I4-02. Magnetic and Electronic Transport Properties of Reactively Facing-Target Sputtered Fe₄N/Muscovite Flexible Heterostructures.** X. Shi¹ and W. Mi¹ 1. *Tianjin University, Tianjin, China*
- I4-03. Strengthen the Magnetic Properties of Pr-Fe-B Thin Films by Biased Substrate.** L.T. Tran¹, C. Chang¹, M. Kuo¹ and A. Sun¹ 1. *Yuan Ze University, Chung-Li, Taiwan*
- I4-04. Temperature Dependence of the Anisotropic Magnetoresistance of Compressively Strained Thin Films of La_{2/3}Sr_{1/3}MnO₃ on LaAlO₃.** A. Burema¹, J.J. van Rijn¹ and T. Banerjee¹ 1. *Rijksuniversiteit Groningen, Groningen, Netherlands*
- I4-05. Resistance Minimum in Pd Induced by Hydrogen Absorption.** T. Ozawa¹, R. Shimizu², T. Hitosugi² and K. Fukutani^{1,3} 1. *Institute of Industrial Science, The University of Tokyo, Meguro, Japan*; 2. *School of Materials and Chemical Technology, Tokyo Institute of Technology, Meguro, Japan*; 3. *Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Japan*
- I4-06. Strain-Modulated Helimagnetism and Magnetic Phase Diagram in a Film of Highly Crystalline MnP Nanorods.** R. Pokharel Madhogaria¹, C. Hung¹, E. Clements¹, A. Duong², R. Das², P. Huy², S. Cho³, M. Phan¹ and H. Srikanth¹ 1. *University of South Florida, Tampa, FL, United States*; 2. *Phenikaa University, Hanoi, Vietnam*; 3. *University of Ulsan, Ulsan, The Republic of Korea*
- I4-07. Strain Induced Magnetic Transition in CaMnO₃ Ultrathin Films.** M.A. Barral¹, A.M. Llois¹ and S.M. Di Napoli¹ 1. *CNEA-CONICET, Instituto de Nanociencia y Nanotecnologia, San Martin, Argentina*
- I4-08. Magnetic Anisotropy and Electrical Property of CoZrTaB Thin Films Deposited by Oblique Sputtering.** S. Tummalapalli¹ and H. Yu¹ 1. *School of Electrical, Computer and Energy Engineering, Arizona State University, Tempe, AZ, United States*
- I4-09. Two Magnetic Phases in Mn-Bi₂Te₃ Superlattice.** S. Bac¹, X. Liu¹, J. Wang¹, M. Dobrowolska¹, J. Furdyna¹ and B. Assaf¹ 1. *Physics, University of Notre Dame, Notre Dame, IN, United States*

- I4-10. Ordered Occupancy of Interstitial Voids in Mn₅Ge₃ Lattice by the Carbon Dopant.** R. Kalvig¹, E. Jedryka¹, M. Wojcik¹, M. Petit² and L. Michez² 1. *Polska Akademia Nauk Instytut Fizyki, Warszawa, Poland*; 2. *Aix-Marseille Universite, Marseille, France*
- I4-11. Evolution of Structural and Magnetic Properties of Ar²⁺ Ion Irradiated TiO₂ Thin Films Annealed Under Argon Atmosphere.** B. Bharati¹ and C. RATH¹ 1. *SCHOOL OF MATERIALS SCIENCE AND TECHNOLOGY, Indian Institute of Technology BHU Varanasi, Varanasi, India*
- I4-12. Study of Magnetization Behaviour of Co-Doped TiO₂.** R. Gupta³, S. Kumar¹, A. Gupta², D. Phase³ and A. Pandey⁴ 1. *School of Instrumentation, Devi Ahilya University, Indore, India*; 2. *Center for Spintronics, Amity University, Noida, India*; 3. *UGC DAE Consortium for Scientific Research, Indore, India*; 4. *Inter-University Accelerator Center, New Delhi, New Delhi, India*
- I4-13. Spin Ordering and Precessional Damping in Ferrimagnetic Thin Film Structures Near Compensation.** J. Shoup¹, H. Liu¹, D. Khadka², T.R. Thapaliya², S. Huang², D. Karaiskaj¹ and D.A. Arena¹ 1. *University of South Florida, Tampa, FL, United States*; 2. *University of Miami, Coral Gables, FL, United States*
- I4-14. Effect of the N₂/RE Ratio During Growth on the Properties of Rare Earth Nitrides.** A. Shaib^{1,2}, J. Chan^{1,2}, W. Holmes-Hewett^{1,2}, F. Ullstad^{1,2}, J. Miller^{1,2}, B. Ruck^{1,2}, H. Trodahl^{1,2} and F. Natali^{1,2} 1. *School of Chemical and Physical Sciences, Victoria University of Wellington, Wellington, New Zealand*; 2. *The MacDiarmid Institute for Advanced Materials and Nanotechnology, Wellington, New Zealand*
- I4-15. High Degree of Order and Uniaxial Magnetic Anisotropy of L1₀-FeNi Films Fabricated by Denitrifying Epitaxial FeNiN Films.** K. Ito^{1,2}, M. Hayashida¹, T. Ichimura¹, T. Nishio³, S. Goto³, H. Kura³, T. Koganezawa⁴, M. Mizuguchi⁵, Y. Shimada¹, T. J. Konno¹, H. Yanagihara⁶ and K. Takanashi^{1,2} 1. *Institute for Materials Research, Tohoku University, Sendai, Japan*; 2. *Center for Spintronics Research Network, Tohoku University, Sendai, Japan*; 3. *Advanced Research and Innovation Center, DENSO CORPORATION, Nisshin, Japan*; 4. *Japan Synchrotron Radiation Research Institute, Sayo, Japan*; 5. *Department of Materials Process Engineering, Nagoya University, Nagoya, Japan*; 6. *Department of Applied Physics, University of Tsukuba, Tsukuba, Japan*

Session I5
INSTRUMENTATION AND MEASUREMENT
TECHNIQUES II
(Poster Session)

Tatiana Guidi, Chair

Science and Technology Facilities Council, Didcot, United Kingdom

I5-01. Withdrawn

I5-02. Magnetic Properties Measurement and Simulation of Electrical Steel Sheet Under Cutting Influence. Y. Li¹, Y. Fu¹, Y. Dou¹ and K. zhang¹ *1. State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology, Tianjin, China*

I5-03. Effect of Plastic Straining on the Remanent Magnetization of Ferrite-Pearlitic Steel: Experimental and Modeling Aspects. Z. Maazaz^{1,2}, O. Hubert¹ and E.A. Fnaiech² *1. LMT - Laboratoire de Mécanique et Technologie, Université Paris-Saclay/ENS Paris-Saclay/CNRS, Gif-sur-Yvette, France; 2. SKIPPER - NDT, Paris, France*

I5-04. Withdrawn

I5-05. Ferromagnetic Resonance Studies of Composite EMF Shielding Materials. P. Couture¹, R. Camley¹, K. Livesey¹, T. Robinson², D. Meyers², S. Maat² and Z. Celinski¹ *1. Physics, University of Colorado at Colorado Springs, Colorado Springs, CO, United States; 2. YTC America Inc, Camarillo, CA, United States*

I5-06. Magnetic Field Spectra and Sizing of Defects in Magnetic Flux Leakage Inspection. M. Aziz¹, R. Abdulla² and M. Al-Dujaili² *1. Engineering, University of Exeter, Exeter, United Kingdom; 2. MEDCO Ltd, Surrey, United Kingdom*

I5-07. Study of Mechanical Resonance Induced by Magnetostriction in Closed Structures Based on Fe-Si. J. Li¹, G. Li¹, D. Zhang¹ and K. Yu² *1. Dalian University of Technology, Dalian, China; 2. Waseda University, Tokyo, Japan*

I5-08. Magnetic Measurement and Analysis of C-Type Amorphous by an Improved Adjustable Air Gap Tester. Y. Li¹, Z. Wan¹, H. Sun¹ and H. Liu¹ *1. State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology, Tianjin, China*

I5-09. Frequency Characteristics of an air-Cored Coil and its Application to Conductivity Examination. W. Cheng^{1,2} and H. Hashizume² *1. NDE Center, Japan Power Engineering and Inspection Corp., Yokohama, Japan; 2. Department of Quantum Science and Energy Engineering, Tohoku University, Sendai, Japan*

15-10. Withdrawn

15-11. Withdrawn

WEDNESDAY
AFTERNOON
12:30

LIVE Q&A 10

Session J1

BIOMEDICAL APPLICATIONS I - THERAPEUTIC APPLICATIONS

Anirudh Sharma, Co-Chair

University of Minnesota, Minneapolis, MN, United States

Daniel Ortega, Co-Chair

University of Cádiz, Cádiz, Spain

- J1-01. Effect of Cortex-Coil Distance on Resting Motor Threshold in Schizophrenia Patients During Transcranial Magnetic Stimulation. (Invited)** E. Cheng¹, U.M. Mehta², A.K. Pandurangi³ and R.L. Hadimani^{4,1} 1. Department of Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States; 2. Department of Psychiatry, National Institute of Mental Health & Neurosciences, Bangalore, India; 3. Department of Psychiatry, Virginia Commonwealth University, Richmond, VA, United States; 4. Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA, United States
- J1-02. Quadruple Silicon Steel Core Coil for Highly Focused Transcranial Magnetic Stimulation in Small Animals.** I.C. Carmona¹, D. Kumbhare², M.S. Baron^{3,4} and R.L. Hadimani^{1,5} 1. Dept. of Mechanical and Nuclear Engineering, Virginia Commonwealth University, College of Engineering, Richmond, VA, United States; 2. Department of Neurosurgery, Virginia Commonwealth University Health System, Richmond, VA, United States; 3. McGuire Research Institute, Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA, United States; 4. Southeast Parkinson's Disease Research, Education and Clinical Center (PADRECC), Hunter Holmes McGuire Veterans Affairs Medical Center, Richmond, VA, United States; 5. Dept. of Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States
- J1-03. Contactless Sensing of Spinal Cord Temperature Using Magnetically Bistable Microwires.** J. Gamcova^{1,2}, M. Bacova³, I. Sulla⁴, L. Slovinska⁵, J. Galik³ and R. Varga^{1,6} 1. RVmagnetics a.s., Kosice, Slovakia; 2. Institute of Material Science, Slovak Academy of Sciences, Kosice, Slovakia; 3. Institute of Neurobiology, Slovak Academy of Sciences, Kosice, Slovakia; 4. Department of Anatomy, Histology and Physiology, University of Veterinary Medicine and Pharmacy, Kosice, Slovakia; 5. Associated Tissue Bank of Faculty of Medicine, University of Pavol Jozef Safarik in Kosice, Kosice, Slovakia; 6. Center of Progressive Materials TIP, University Pavol Jozef Safarik in Kosice, Kosice, Slovakia

- J1-04. Liquid Flow and Control Without Solid Walls. (Invited)** P. Dunne^{1,2}, T. Adachi^{2,3}, A.A. Dev¹, A. Sorrenti^{2,4}, L. Giacchetti^{2,5}, A. Bonnin⁶, C. Bourdon⁷, P. Mangin⁷, M. Coey⁸, B. Doudin¹ and T.M. Hermans² 1. *Institut de Physique et Chimie des Materiaux de Strasbourg, Strasbourg, France*; 2. *Institut de Science et d'Ingenierie Supramoleculaires, Strasbourg, France*; 3. *Universite de Geneve, Geneva, Switzerland*; 4. *Eidgenossische Technische Hochschule Zurich, Zurich, Switzerland*; 5. *Qfluidics, Strasbourg, France*; 6. *Paul Scherrer Institut, Villigen, Switzerland*; 7. *INSERM, EFS Grand-Est, BPPS UMR-S1255, FMTS, Strasbourg, France*; 8. *University of Dublin Trinity College, Dublin, Ireland*
- J1-05. 2D Nanodisks for Magnetic Hyperthermia: Role of Hysteresis Losses. (Invited)** P. Tiberto¹, G. Barrera¹, F. Celegato¹ and M. Coïsson¹ 1. *Advance materials and life science, Istituto Nazionale di Ricerca Metrologica, Torino, Italy*
- J1-06. Janus Magnetic-Plasmonic Nanoparticles for Magnetically Targeted and Thermally Activated Cancer Therapy. (Invited)** A. Espinosa^{1,2}, J. Reguera^{3,5}, A. Curcio², A. Muñoz-Noval⁶, C. Kuttner⁴, A. Van de Walle², L. Liz-Marzán^{4,5} and C. Wilhelm² 1. *IMDEA Nanociencia, Madrid, Spain*; 2. *Laboratoire Matière et Systèmes Complexes (MSC), Université Paris Diderot, Paris, France*; 3. *BCMaterials, Basque Center for Materials, Applications and Nanostructures, Bilbao, Spain*; 4. *CIC biomaGUNE and Ciber-BBN, Donostia-San Sebastián, Spain*; 5. *Ikerbasque, Basque Foundation for Science, Bilbao, Spain*; 6. *Dpto. Física Materiales, Facultad CC. Físicas, Universidad Complutense de Madrid, Madrid, Spain*
- J1-07. Functional Magnetic Ferrogels: From Biosensors to Regenerative Medicine. (Invited)** G.V. Kurylanskaya^{1,5}, F.A. Blyakhman^{5,3}, N.A. Buznikov², A.P. Safronov^{5,4} and S.V. Shcherbinin^{5,4} 1. *Electricity and Electronics, University of Basque Country UPV-EHU, Leioa, Spain*; 2. *Scientific and Research Institute of Natural Gases and Gas Technologies, Moscow, Moscow, Russian Federation*; 3. *Biophysics, Ural State Medical University, Ekaterinburg, Ekaterinburg, Russian Federation*; 4. *Institute of Electrophysics, UD RAS, Ekaterinburg, Russian Federation*; 5. *Institute of Natural Sci. and Math., Ural Federal University, Ekaterinburg, Russian Federation*
- J1-08. Using Dipolar Interactions to Improve Magnetic-Hyperthermia Performance of Low-Anisotropy Nanoparticles: Theoretical Study of Chain-Like Structures.** D.P. Valdés^{1,2}, E. Lima Jr.¹, R.D. Zysler^{1,2} and E. De Biasi^{1,2} 1. *Instituto de Nanociencia y Nanotecnología, CNEA-CONICET, S.C. de Bariloche, Argentina*; 2. *Instituto Balseiro, Universidad Nacional de Cuyo, S.C. de Bariloche, Argentina*
- J1-09. Fundamental Study on Cancer Therapy by Blocking Newborn Blood Vessels With Surface Modified Magnetite Particles.** M. Kirimura¹, Y. Akiyama¹ and F. Sato¹ 1. *Graduate School of Engineering, Osaka Daigaku, Suita, Japan*

Session J2

CRYSTALLINE SOFT MAGNETIC MATERIALS

Alex Leary, Chair

NASA Glenn Research Center, Sandusky, OH, United States

- J2-01. An Improved Magnetostriction Model of Silicon Steel Considering the Saturated Magnetic Domain Wall Movement.** *T. Ben*¹, *F. Chen*¹, *L. Chen*^{1,2} and *R. Yan*² *1. China Three Gorges University, Yichang, China; 2. Hebei University of Technology, Tianjin, China*
- J2-02. Withdrawn**
- J2-03. Domain Structure and Energy Losses up to 10 kHz in Grain-Oriented Fe-Si Sheets.** *A. Magni*¹, *A. Sola*¹, *O. de la Barrière*², *E. Ferrara*¹, *L. Martino*¹, *C. Ragusa*³, *C. Appino*¹ and *F. Fiorillo*¹ *1. Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 2. Lab. SATIE, CNRS-ENS, Saclay, France; 3. Department of Energy, Politecnico di Torino, Torino, Italy*
- J2-04. Secondary Recrystallization Behavior in Magnetostrictive Fe-Ga Thin Sheets Induced by Nano-Sized Composite Precipitates.** *Z. He*^{1,2}, *Y. Sha*², *G. Zhou*¹, *F. Zhang*² and *L. Zuo*² *1. School of Materials Science and Engineering, Shenyang University of Technology, Shenyang, China; 2. Key Laboratory for Anisotropy and Texture of Materials (Ministry of Education), Northeastern University, Shenyang, China*
- J2-05. Domain Observation in Electrodeposited Permalloy Thin Films.** *K. Dev*¹, *G. VASHISHT*¹, *V.R. Reddy*² and *A. Subramanian*¹ *1. Department of Physics and Astrophysics, University of Delhi, New Delhi, India; 2. UGC-DAE Consortium for Scientific Research, Indore, India*
- J2-06. New Pathways to Iron Nitride Soft Magnets.** *T. Monson*¹, *T. Stevens*¹, *C. Pearce*¹, *M. Hoyt*¹, *E. Vreeland*¹, *R. Delaney*¹, *S. Atcitty*¹, *B. Zheng*², *C. Belcher*², *Y. Zhou*², *E. Lavernia*² and *T. Rupert*² *1. Sandia National Laboratories, Albuquerque, NM, United States; 2. University of California, Irvine, Irvine, CA, United States*
- J2-07. Accelerated Soft Magnetic Materials Development.** *V. Chaudhary*¹, *M.S. Nartu*², *S. Dasari*², *R. Banerjee*² and *R. Ramanujan*¹ *1. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore; 2. Department of Materials Science and Engineering, University of North Texas, Denton, TX, United States*
- J2-08. Evaluation of Medium-Entropy Fe_xCo_yNi_z Alloys as Precursors for FeCoNi-Based High-Entropy Soft-Magnetic Alloys.** *A.A. Paul*¹ and *T.V. Jayaraman*¹ *1. Mechanical Engineering, University of Michigan Dearborn, Dearborn, MI, United States*

Session J3
MAGNETIC PHASE TRANSITION AND
SUPERCONDUCTIVITY

Elizabeth Skoropata, Chair
Oak Ridge National Laboratory, Knoxville, TN, United States

J3-01. Withdrawn

J3-02. Photoinduced Spin-Density and Charge-Density Wave Dynamics in Cr. (Invited) S.K. Patel^{1,2} *1. Center for Memory and Recording Research, University of California, San Diego, La Jolla, CA, United States; 2. Physics Department, University of California, San Diego, La Jolla, CA, United States*

J3-03. Magnetism and Magnetotransport Around the Curie Temperature in the Dilute Ferromagnetic Semiconductor (Ga,Mn)As. *M. Wang¹, B. Howells¹, R.A. Marshall¹, J.M. Taylor¹, K.W. Edmonds¹, A.W. Rushforth¹, R.P. Campion¹ and B.L. Gallagher¹* *1. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom*

J3-04. Observed Effects of Magnetism on the Calculated Stacking Fault Energies of FCC Co. *K. Cole-Piepeke¹, A. Srivastava¹, A. Koenig², D. Tweddle², C. Mewes¹, T. Mewes¹, G. Thompson², R. Noebe³ and A. Leary³* *1. Department of Physics and Astronomy, The University of Alabama, Tuscaloosa, AL, United States; 2. Department of Metallurgy and Materials Engineering, The University of Alabama, Tuscaloosa, AL, United States; 3. Materials and Structures Division, NASA John H Glenn Research Center, Cleveland, OH, United States*

J3-05. Magnetic Phase Diagram and Exchange Bias Effect of TbFe_xMn_{12-x} (x=6.0 -9.0) Intermetallic Compounds. *Y. Xia¹, Z. Lin¹ and J. Yang¹* *1. physics, Peking University, Beijing, China*

J3-06. Withdrawn

J3-07. Withdrawn

J3-08. Interplay Between Magnetism and Superconductivity in Iron Substituted FeSr₂YCu₂O_{7+δ} Cuprates Studied by μSR. *S.A. López Paz¹, D. Sari^{3,4}, A. Hillier² and M. Alario-Franco¹* *1. Inorganic Chemistry Department, Universidad Complutense de Madrid, Avda. Complutense s/n, 28040, Madrid, Spain; 2. ISIS facility, Rutherford Appleton Laboratory, Chilton, United Kingdom; 3. College of Engineering, Shibaura Institute of Technology, 307 Fukasaku, Minuma-ku, Saitama City, Saitama 337-8570, Japan; 4. Meson Science Laboratory, RIKEN, 2-1 Hirosawa, Wako, Saitama 351-0198, Japan*

- J3-09. Magnetic Phases in Superconducting, Polycrystalline Bulk FeSe Samples.** Q. Nouailhetas^{1,2}, A. Koblischka-Veneva^{1,3}, M.R. Koblischka^{1,3}, K. Berger², B. Douine², Y. Slimani⁴ and E. Hannachi⁵ *1. Experimental Physics, Universitat des Saarlandes Naturwissenschaftlich-Technische Fakultät, Saarbrücken, Germany; 2. GREEN, University of Lorraine, Nancy, France; 3. Materials Science, Shibaura Institute of Technology, Tokyo, Japan; 4. Biophysics, Imam AbdulRahman Bin Faisal University, Dammam, Saudi Arabia; 5. Material Physics, Université de Carthage, Tunis, Tunisia*
- J3-10. Enhanced Superconductivity in Single Layer FeTeSe/SrTiO₃ Heterostructures. (Invited)** L. Li¹ *1. Physics and Astronomy, West Virginia University, Morgantown, WV, United States*
- J3-11. Predicting Long- and Short-Range Order With Restricted Boltzmann Machine.** M. Timirgazin¹ and A. Arzhnikov¹ *1. Physical-Technical Institute, UdmFRC UB RAS, Izhevsk, Russian Federation*

WEDNESDAY
AFTERNOON
12:30

LIVE Q&A 10

Session J4

SPIN CURRENTS I

Satoru Emori, Co-Chair
Virginia Tech, Blacksburg, VA, United States
Aurelien Manchon, Co-Chair
Aix-Marseille Université, Marseille, France

- J4-01. Efficient Spin-Orbit Torque in vdW Heterostructure of 2D Itinerant Ferromagnet and Weyl Semimetal.** I. Kao¹, J. Gobbo¹, R. Muzzio¹, J. yan², J. Goldberger³, J. Katoch¹ and S. Singh¹ *1. Department of Physics, Carnegie Mellon University, Pittsburgh, PA, United States; 2. Oak Ridge National Laboratory, Oak Ridge, TN, United States; 3. Department of Chemistry, The Ohio State University, Columbus, OH, United States*
- J4-02. Composition Dependence of Spin Anomalous Hall Effect in a Ferromagnetic Fe-Co Alloy.** Y. Koike^{1,2}, S. Iihama^{3,4} and S. Mizukami^{2,4} *1. Department of Applied Physics, Tohoku University, Sendai, Japan; 2. WPI-AIMR, Tohoku University, Sendai, Japan; 3. FRIS, Tohoku University, Sendai, Japan; 4. CSRN, Tohoku University, Sendai, Japan*

- J4-03. Amorphous Transition Metal Thin Films for Spin Current Generation.** *J. Karel*^{1,2}, *C. Hsu*³, *D. Bouma*⁴, *C. Fuchs*⁴, *P. Corbae*⁵, *N. Roschewsky*³, *S. Salahuddin*^{3,6} and *F. Hellman*^{4,6}
1. Materials Science and Engineering, Monash University, Clayton, VIC, Australia; 2. ARC Centre of Excellence in Future Low-Energy Electronics Technologies, Clayton, VIC, Australia; 3. Department of Electrical Engineering and Computer Science, University of California Berkeley, Berkeley, CA, United States; 4. Physics, University of California Berkeley, Berkeley, CA, United States; 5. Materials Science and Engineering, University of California Berkeley, Berkeley, CA, United States; 6. Materials Science Division, E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States
- J4-04. Optical Spin-Orbit Torque in Heavy Metal-Ferromagnet Heterostructures. (Invited)** *G. Choi*¹, *J. Oh*², *D. Lee*², *s. lee*², *K. Kim*³, *M. Lim*⁴, *B. Min*⁵, *K. Lee*² and *H. Lee*⁴
1. Department of Energy Science, Sungkyunkwan University - Natural Sciences Campus, Suwon, The Republic of Korea; 2. Department of Materials Science and Engineering, Korea University, Seongbuk-gu, The Republic of Korea; 3. Center for theoretical physics of complex system, Institute for Basic Science, Daejeon, The Republic of Korea; 4. Department of physics, Pohang University of Science and Technology, Pohang, The Republic of Korea; 5. Center for spintronics, Korea Institute of Science and Technology, Seongbuk-gu, The Republic of Korea
- J4-05. Piezoelectric Strain Control of Spin-Orbit Torques in Perpendicularly Magnetized CoFeB Thin Films.** *M. Filianina*^{1,2}, *J. Hanke*^{1,3}, *K. Lee*¹, *D. Han*^{1,5}, *S. Jaiswal*^{1,4}, *A. Rajan*¹, *G. Jakob*^{1,2}, *Y. Mokrousov*^{1,3} and *M. Klau*^{1,2}
1. Johannes Gutenberg Universitat Mainz, Mainz, Germany; 2. Graduate School of Excellence Materials Science in Mainz, Mainz, Germany; 3. Forschungszentrum Julich Peter Grunberg Institut, Julich, Germany; 4. Singulus Technology AG, Kahl am Mainz, Germany, Kahl am Main, Germany; 5. Korea Advanced Institute of Science and Technology, Seoul, The Republic of Korea
- J4-06. Probing Spin-Orbit Torques in Heterostructures With in-Plane Magnetic Anisotropy via Spin Hall Effective Field.** *Y. Liu*², *T. Chen*², *T. Lo*², *T. Tsai*², *S. Yang*¹, *Y. Chang*¹, *J. Wei*¹ and *C. Pai*^{2,3}
1. Electronic and Optoelectronic System Research Laboratories, Industrial Technology Research Institute, Hsinchu, Taiwan; 2. Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan; 3. Center of Atomic Initiative for New Materials, National Taiwan University, Taipei, Taiwan
- J4-07. Spin to Charge Conversion of ac Spin Current in Si Detected by Inductive Measurements.** *E. Shigematsu*¹, *L. Liensberger*^{2,3}, *M. Weiler*^{2,3}, *R. Ohshima*¹, *Y. Ando*¹, *T. Shinjo*¹, *H. Huebl*^{2,3} and *M. Shiraishi*¹
1. Department of Electronics Science and Engineering, Kyoto University, Kyoto, Japan; 2. Walther-Meißner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany; 3. Physik-Department, Technische Universität München, Garching, Germany
- J4-08. Bias-Field-Free Spin Hall Oscillator With an out-of-Plane Precession Mode.** *T. Shirokura*¹ and *H.N. Pham*^{1,2}
1. Electrical and Electronic Engineering, Tokyo Institute of Technology, Meguro-ku, Japan; 2. Center for Spintronics Research Network (CSRN), The University of Tokyo, Bunkyo-ku, Japan

- J4-09. Controllable Orientations of Spin Polarization Beyond the Spin Hall Effect.** *T. Chuang*¹, *D. Qu*², *S. Huang*¹ and *S. Lee*²
1. Department of Physics, National Taiwan University, Taipei, Taiwan; 2. Institute of Physics, Academia Sinica, Taipei, Taiwan
- J4-10. Transverse and Longitudinal Spin-Torque Ferromagnetic Resonance for Improved Measurements of Spin-Orbit Torques.** *S. Karimeddiny*¹, *J.A. Mittelstaedt*¹, *R. Buhrman*^{2,1} and *D. Ralph*^{1,3} *1. Physics, Cornell University, Ithaca, NY, United States; 2. Applied and Engineering Physics, Cornell University, Ithaca, NY, United States; 3. Physics, Kavli Institute at Cornell for Nanoscale Science, Ithaca, NY, United States*
- J4-11. Spin-Orbit Interaction in Fe_xSi_{1-x}/Co Bi-Layers.** *C. Hsu*¹, *J. Karel*², *N. Roschewsky*³, *S. Cheema*⁴, *D. Bouma*³, *S. Sayed*¹, *F. Hellman*³ and *S. Salahuddin*¹ *1. Electrical Engineering and Computer Science, University of California Berkeley, Berkeley, CA, United States; 2. Materials Science and Engineering, Monash University, Clayton, VIC, Australia; 3. Physics, University of California Berkeley, Berkeley, CA, United States; 4. Materials Science and Engineering, University of California Berkeley, Berkeley, CA, United States*
- J4-12. Effect of Interfacial Intermixing on Spin-Orbit Torque in Co/Pt Bilayers.** *G.G. Baez Flores*¹ and *K. Belashchenko*¹
1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE, United States

WEDNESDAY
 AFTERNOON
 12:30

LIVE Q&A 10

Session J5

WEYL AND TOPOLOGICAL MATERIALS

Ralph Skomski, Chair

University of Nebraska-Lincoln, Lincoln, NE, United States

- J5-01. Correlating Magnetic Structure and Magnetotransport in Thin Films of the Weyl Semimetal Eu_{1-x}Sm_xTiO₃.** *R. Need*¹, *Z. Porter*², *K. Ahadi*³, *B. Kirby*⁴, *S. Stemmer*² and *S. Wilson*²
1. University of Florida, Gainesville, FL, United States; 2. University of California Santa Barbara, Santa Barbara, CA, United States; 3. North Carolina State University, Raleigh, NC, United States; 4. National Institute of Standards and Technology, Gaithersburg, MD, United States
- J5-02. Grain Size Dependence of Transverse Thermomagnetic Transport in the Weyl Semimetal NbP.** *E. Scott*¹, *C. Fu*², *S. Guin*², *C. Felser*² and *S. Watzman*¹ *1. University of Cincinnati College of Engineering and Applied Science, Cincinnati, OH, United States; 2. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

- J5-03. Chiral-Anomaly-Induced Nonlinear Hall Effect in Tilted Weyl Semimetals.** *R. Li*¹, *S. Zhang*¹, *A. Burkov*² and *O. Heinonen*³ *1. Physics, Case Western Reserve University, Cleveland, OH, United States; 2. Physics, University of Waterloo, Waterloo, ON, Canada; 3. Argonne National Laboratory Materials Science Division, Lemont, IL, United States*
- J5-04. Anomalous Planar Hall Effect in Predicted Type II Weyl Fe₃Sn₂.** *N. Kumar*¹, *Y. Soh*¹, *Y. Wang*², *J. Li*² and *Y. Xiong*² *1. Neutrons and Muons, Paul Scherrer Institut, Villigen, Switzerland; 2. Anhui Province Key Laboratory of Condensed Matter Physics at Extreme Conditions, High Magnetic Field Laboratory of the Chinese Academy of Sciences, Hefei, China*
- J5-05. Epitaxial Growth of the Weyl Semimetal YbPtBi (111) on C-Plane Sapphire by Co-Sputtering.** *M. Vaughan*¹, *M. Dearg*¹, *M. Ali*¹, *C.H. Marrows*¹ and *G. Burnell*¹ *1. University of Leeds, Leeds, United Kingdom*
- J5-06. Weyl-Kondo Semimetals: Correlated Topology and Control of Nodes. (Invited)** *S.E. Greife*¹, *H. Lai*¹, *S. Paschen*² and *Q. Si*¹ *1. Rice University, Houston, TX, United States; 2. Technische Universitat Wien, Wien, Austria*
- J5-07. Meta-Magnetism of Weakly-Coupled Antiferromagnetic Topological Insulators.** *A. Tan*^{1,3}, *V. Labracherie*^{1,3}, *N. Kunchur*¹, *A. Wolter*¹, *J. Dufouleur*¹, *B. Büchner*^{1,2}, *A. Isaeva*^{1,2} and *R. Giraud*^{1,3} *1. Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden eV, Dresden, Germany; 2. Technische Universität Dresden, Dresden, Germany; 3. Université Grenoble Alpes, Grenoble, France*
- J5-08. Peculiarities of the Electro- and Magnetoresistivity of WTe₂ and MoTe₂ Single Crystals.** *A. Domozhirova*¹, *S.V. Naumov*¹, *S.M. Podgornykh*¹, *V. Chistyakov*¹, *J.A. Huang*² and *V. Marchenkov*^{1,3} *1. M.N. Mikheev Institute of Metal Physics, UB RAS, Ekaterinburg, Russian Federation; 2. National Cheng Kung University, Tainan, Taiwan; 3. Ural Federal University, Ekaterinburg, Russian Federation*
- J5-09. Anomalous Hall Effects in Rare Earth Nitrides.** *W. Holmes-Hewett*^{1,2}, *B. Ruck*^{1,2}, *R.G. Buckley*^{1,3} and *H. Trodahl*^{1,2} *1. The MacDiarmid Institute for Advanced Materials and Nanotechnology, Wellington, New Zealand; 2. School of Chemical and Physical Sciences, Victoria University of Wellington, Wellington, New Zealand; 3. Robinson Research Institute, Victoria University of Wellington, Wellington, New Zealand*
- J5-10. Direct Observation of Hidden Spin Polarization in 2H-MoTe₂.** *Y. Xu*¹, *J. Tu*¹ and *X. Ruan*¹ *1. York-Nanjing Joint Center, Nanjing University, Nanjing, China*
- J5-11. Rotational Currents Around Lanthanide Dopants in Simple Metals.** *A.O. Leon*⁴, *A. Cahaya*², *M. Rahimi*³ and *G. Bauer*¹ *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Department of Physics, Universitas Indonesia, Depok, Indonesia; 3. Nano-Structured Coatings Institute, Yazd Payame Noor University, Yazd, The Islamic Republic of Iran; 4. Department of Physics, Metropolitan University of Technology, Santiago, Chile*

- J5-12. Quantifying Induced Moment in non-Magnetic Cu – C₆₀ Interfaces via x-ray Magnetic Circular Dichroism.**
P. Sharangi¹, P. Gargiani², M. Valvidares² and S. Bedanta¹
1. School of Physical Science, National Institute of Science Education and Research (NISER), Bhubaneswar, India;
2. Alba Synchrotron Light Source, Barcelona, Spain
- J5-13. Density Functional Theory and Machine Learning Guided Study of Mn-Ga Alloys With Targeted Magnetic Properties.**
T. Hartnett¹, P. Balachandran^{1,2} and S. Gangopadhyay¹
1. Materials Science Engineering, University of Virginia, Charlottesville, VA, United States; 2. Mechanical Engineering, University of Virginia, Charlottesville, VA, United States
- J5-14. Unusual Magnetic and Transport Properties of PrScGe-GdScGe Solid Solution.** *T. Del Rose^{1,2}, A.K. Pathak³, Y. Mudryk² and V.K. Pecharsky^{1,2}*
1. Materials Science and Engineering, Iowa State University, Ames, IA, United States;
2. Ames Laboratory, Ames, IA, United States; 3. University at Buffalo - The State University of New York, Buffalo, NY, United States

WEDNESDAY
 AFTERNOON
 12:30

LIVE Q&A 10

Session J6
ANTIFERROMAGNETIC SPINTRONICS II
(Poster Session)

Angela Wittmann, Chair
 Massachusetts Institute of Technology, Cambridge, MA, United States

- J6-01. Withdrawn**
- J6-02. Growth of non-Collinear Antiferromagnet Thin Films for Spintronics.** *B. Rimpler¹ and S.S. Parkin¹*
1. Nano-Systems from ions, spins and electrons, Max Planck Institute of Microstructure Physics, Halle (Saale), Germany
- J6-03. Diffusive Spin Nernst Effect of Antiferromagnetic Magnons.**
H. Zhang¹ and R. Cheng^{1,2}
1. Department of Electrical and Computer Engineering, University of California Riverside, Riverside, CA, United States; 2. Department of Physics and Astronomy, University of California Riverside, Riverside, CA, United States
- J6-04. Evidence of Topological Hall Effect in Pt/Antiferromagnetic-Insulator Bilayers.** *Y. Cheng¹, S. Yu¹, M. Zhu², J. Hwang² and F. Yang¹*
1. Physics, The Ohio State University, Columbus, OH, United States; 2. Materials Science and Engineering, The Ohio State University, Columbus, OH, United States

- J6-05. Effects of Geometry on Curvilinear Spin Chains.** D. Kononenko^{1,2}, O. Pylypovskyi³, K. Yershov^{2,4}, U. Roessler², A. Tomilo¹, J. Fassbender³, J. van den Brink^{2,5}, D. Makarov³ and D. Sheka¹ *1. Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 2. Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden eV, Dresden, Germany; 3. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 4. Institut teoreticnoi fiziki imeni M M Bogolubova Nacional'na akademiya nauk Ukraini, Kyiv, Ukraine; 5. Institute for Theoretical Physics, TU Dresden, Dresden, Germany*
- J6-06. Withdrawn**
- J6-07. Antiferromagnetic Domain Structure in CuMnAs Devices.** S. Reimers^{1,2}, O.J. Amin¹, R.P. Champion¹, O. Gomonay⁶, F. Maccherozzi², F. Krizek⁴, V. Novák⁴, T. Jungwirth^{4,1}, D. Kriegner^{5,4}, A. Björling³, D. Carbone³, K.W. Edmonds¹, P. Wadley¹ and S.S. Dhesi² *1. School of Physics and Astronomy, The University of Nottingham, Nottingham, United Kingdom; 2. Diamond Light Source, Didcot, United Kingdom; 3. MAX IV Laboratory, Lund, Sweden; 4. Department of Spintronics and Nanoelectronics, Institute of Physics ASCR, FZU, Prague, Czechia; 5. Institute for Solid State and Materials Physics, Technical University Dresden, Dresden, Germany; 6. Johannes Gutenberg Universität Mainz, Mainz, Germany*
- J6-08. Withdrawn**
- J6-09. Anomalous Hall Effect in Mn-Sn Thin Films - Correlation With Crystal Structure.** J. Yoon¹, Y. Takeuchi¹, Y. Yamane^{1,2}, S. Kanai^{1,3}, J. Ieda^{1,4}, H. Ohno^{1,5} and S. Fukami^{1,6} *1. Lab. for Nanoelectronics and Spintronics, RIEC, Tohoku University, Sendai, Japan; 2. FRIS, Tohoku University, Sendai, Japan; 3. FRiD, Tohoku University, Sendai, Japan; 4. ASRC, Japan Atomic Energy Agency, Tokai, Japan; 5. CSIS, Tohoku University, Sendai, Japan; 6. WPI-AIMR, Tohoku University, Sendai, Japan*
- J6-10. Withdrawn**
- J6-11. Terahertz Emission From an Exchange-Coupled Synthetic Antiferromagnet.** Q. Zhang^{1,2}, Y. Yang¹, Z. Luo¹, Y. Xu¹, R. Nie¹, X. Zhang² and Y. Wu¹ *1. National University of Singapore, Singapore, Singapore; 2. Southern University of Science and Technology, Shenzhen, China*
- J6-12. Temperature-Dependent Exotic Spin Torques in Antiferromagnetic FeRh.** J. Gibbons¹, T. Dohi², H. Saglam³, J. Pearson⁴, S. Fukami² and A. Hoffmann¹ *1. Materials Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States; 2. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku Daigaku Denki Tsushin Kenkyujo, Sendai, Japan; 3. Applied Physics, Yale University, New Haven, CT, United States; 4. Materials Science Division, Argonne National Laboratory, Lemont, IL, United States*

Session K1
MULTIFERROIC MATERIALS AND
HETERO-STRUCTURES I

Rajesh Chopdekar, Chair

Lawrence Berkeley National Laboratory, Berkeley, CA, United States

- K1-01. Magnetolectric Behavior via a Spin State Transition.** *(Invited)* S. Chikara^{1,5}, J. Gu², X. Zhang², H. Cheng², N. Smythe³, J. Singleton¹, B. Scott³, E. Krenkel⁴, J. Eckert⁴ and V. Zapf¹ 1. *Pulsed Field Facility, Los Alamos National Laboratory, Los Alamos, NM, United States*; 2. *University of Florida, Gainesville, FL, United States*; 3. *Los Alamos National Laboratory, Los Alamos, NM, United States*; 4. *Harvey Mudd College, Claremont, CA, United States*; 5. *National High Magnetic Field Laboratory, Tallahassee, FL, United States*
- K1-02. Electric-Field-Modulated Magnetism in All-Oxide Multiferroic Heterostructures.** P. Wang¹, C. Jin¹ and H. Bai¹ 1. *Tianjin Key Laboratory of Low Dimensional Materials Physics and Processing Technology, School of Science, Tianjin University, Tianjin, China*
- K1-03. Voltage Control of Néel Wall Interaction in Thin Films With Uniaxial in-Plane Anisotropy.** J. Zehner¹, I. Soldatov¹, S. Schneider¹, S. Fähler¹, K. Nielsch¹, R. Schäfer¹ and K. Leistner¹ 1. *Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden eV, Dresden, Germany*
- K1-04. Withdrawn**
- K1-05. Oxidation Effect on the Interface Magnetolectric Coupling in Co/Pb(Zr,Ti)O₃(001).** R. Arras¹ and S. Cherifi-Hertel² 1. *Centre d'Elaboration de Matériaux et d'Etudes Structurales, Toulouse, France*; 2. *Institut de Physique et Chimie des Matériaux de Strasbourg, Strasbourg, France*
- K1-06. Influence of Size on the Magnetization Switching of Strain-Mediated FeGaB/PMN-PT Magnetolectric Heterostructure: a Micromagnetic Study.** P. Pathak¹ and D. Mallick¹ 1. *Department of Electrical Engineering, Indian Institute of Technology Delhi, New Delhi, India*
- K1-07. Reconfigurable Magnonic Crystal Based on Multiferroic-Ferromagnetic Heterostructures.** I. Boventer¹, H. Merbouche¹, V. haspot¹, C. Carrétero¹, S. Fusil¹, V. Garcia¹, A. Barthelemy¹ and A. Anane¹ 1. *Unité Mixte de Physique CNRS/Thalès, Palaiseau, France*
- K1-08. Withdrawn**

- K1-09. Elastic Properties of the Multiferroic BiFeO₃ by Time Resolved Acoustic Measurements.** P. Hemme¹, P. Djemia², Y. Galais¹, A. Sacuto¹, D. Colson³, P. Rovillain⁴, B. Perrin⁴, L. Belliard⁴ and M. Cazayous¹ *1. Laboratoire Materiaux et Phenomenes Quantiques, Paris, France; 2. Laboratoire des Sciences des Procédes et des Materiaux, Villetaneuse, France; 3. Service de Physique de l'Etat Condense, Gif Sur Yvette, France; 4. Institut des NanoSciences de Paris, Paris, France*
- K1-10. Magneto-Ionic Effect in Piezo-Ionic/Magnetostrictive Composites for Energy Generation Applications.** A. Lasheras¹, P. G.Saiz^{2,1}, J. Gutierrez^{1,2} and A. Lopes² *1. University of the Basque Country, Leioa, Spain; 2. Fundacion BCMaterials - Basque Center for Materials Applications and Nanostructures, Leioa, Spain*
- K1-11. Formation of Spiral Ordering by Magnetic Field in Frustrated Anisotropic Antiferromagnets.** O.I. Utesov^{1,2} and A.V. Syromyatnikov^{1,2} *1. Theory Division, National Research Center "Kurchatov Institute" B.P. Konstantinov Petersburg Nuclear Physics Institute, Gatchina, Russian Federation; 2. Physics Department, Sankt-Peterburgskij gosudarstvennyj universitet, Sankt-Peterburg, Russian Federation*
- K1-12. Ho Doping Induced Spin Reorientation in O- Lu_{1-x}Ho_xFeO₃ (x = 0 to 1).** L. S¹, B. P.D², S. Kaul¹ and S. S¹ *1. School of Physics, University of Hyderabad, Hyderabad, India; 2. UGC-DAE Consortium for Scientific Research, Mumbai Center, Mumbai, India*
- K1-13. Withdrawn**
- K1-14. On the Correlation of the Magnetic Properties With the Structural Parameters in Fe-Doped Europium Chromite.** D.R. Ratkovski¹, E. França¹, J.M. Marin², A. Franco Jr³ and F. Machado¹ *1. Departamento de Física, Universidade Federal de Pernambuco, Recife, Brazil; 2. Instituto de Física, Universidad de Antioquia, Medellin, Colombia; 3. Instituto de Física, Universidade Federal de Goiás, Goiânia, Brazil*
- K1-15. Evaluation of Structural Transformation, Magnetization Reversal Along With Magnetic Switching Effect in GdMn_{1-x}Cr_xO₃ Perovskite.** P. Tiwari¹ *1. Materials Science, Indian Institute of Technology BHU Varanasi, Varanasi, India*

WEDNESDAY
EVENING
7:00

LIVE Q&A 11

**Session K2
NEW MAGNETIC MATERIALS**

Ziyao Zhou, Co-Chair

Xi'an Jiaotong University, Xi'an, China

Chuanpu Liu, Co-Chair

Colorado State University, Fort Collins, CO, United States

K2-01. Withdrawn

- K2-02. Cluster Glass Magnetism in Z_2XY Type Heusler Alloy.** T. Samanta¹ and P. Bhoje² 1. Metallurgy Engineering and Materials Science, Indian Institute of Technology Indore, Indore, India; 2. Discipline of Physics, Indian Institute of Technology Indore, Indore, India
- K2-03. Tunable Room-Temperature Ferromagnetism and Emergent Phenomena in Atomically Thin Transition Metal Dichalcogenide Semiconductors. (Invited) M. Phan¹** 1. Department of Physics, University of South Florida, Tampa, FL, United States
- K2-04. Probing Hidden Interfacial Magnetism in Magnetic Insulator Hybrid Structures. (Invited) P. Quarterman¹,** Y. Fan², J. Bauer², Y. Lv³, J. Wang³, C. Ross², L. Liu², J.A. Borchers¹ and A.J. Grutter¹ 1. NIST Center for Neutron Research, Gaithersburg, MD, United States; 2. Massachusetts Institute of Technology, Cambridge, MA, United States; 3. University of Minnesota, Minneapolis, MN, United States
- K2-05. Green Synthesis of Magnetic Fe_3O_4 , $CoFe_2O_4$ and $NiFe_2O_4$ From Aloe Vera Extract for Future Biomedical Applications.** G.C. Hermosa¹, H. Wu¹, C. Liao¹, S. Wang², Y. Chen^{1,3}, Y. Tsai^{1,3} and A. Sun¹ 1. Chemical Engineering and Materials Science, Yuan Ze University, Chung-Li, Taiwan; 2. Materials and Mineral Resources Engineering, National Taipei University of Technology, Taipei, Taiwan; 3. Far Eastern Memorial Hospital, New Taipei City, Taiwan
- K2-06. Twisted Magnetism in Ultra-Short 1D Iron Chains With Hybridized Boundaries.** N.M. Vargas¹, F. Torres², A. Baker³, J.R. Lee³, M. Kiwi², T.M. Willey³, C. Monton⁴ and I.K. Schuller¹ 1. Physics, University of California San Diego, La Jolla, CA, United States; 2. Physics, Universidad de Chile Facultad de Ciencias Físicas y Matemáticas, Santiago, Chile; 3. Materials Science Division, Lawrence Livermore National Laboratory, Livermore, CA, United States; 4. General Atomics, San Diego, CA, United States
- K2-07. Light-Mediated Magnetism in Atomically Thin Vanadium-Doped Tungsten Disulfide Semiconductors.** V. Ortiz Jimenez¹, Y. Pham¹, M. Liu², F. Zhang², V. Kalappattil¹, B. Muchharla¹, T. Eggers¹, D. Duong³, M. Terrones² and M. Phan¹ 1. University of South Florida, Tampa, FL, United States; 2. The Pennsylvania State University, University Park, PA, United States; 3. Sungkyunkwan University, Suwon, The Republic of Korea
- K2-08. Magnetic Doping of Graphene With Substitutional Manganese Atoms.** P. Lin¹, R. Villarreal¹, H. Bana¹, S. Brems², S. Achilli³, G. Fratesi³, M.N. Nair⁴ and L.M. Pereira¹ 1. Quantum Solid State Physics, KU Leuven, Leuven, Belgium; 2. Interuniversitair Micro-electronica Centrum (imec), Leuven, Belgium; 3. ETSF and Dipartimento di Fisica, Università degli Studi di Milano, Milan, Italy; 4. CUNY Advanced Science Research Centre, New York, NY, United States
- K2-09. Withdrawn**

K2-10. Properties of Quaternary-Alloy Ferromagnetic Semiconductor (In,Ga,Fe)Sb. *T. Hotta*¹, *K. Takase*¹, *K. Takiguchi*¹, *S. Karumuri*¹, *L. Anh*^{2,3} and *M. Tanaka*^{1,4}
1. Department of Electrical Engineering and Information Systems, The University of Tokyo, Bunkyo-ku, Japan; 2. Institute of Engineering Innovation, The University of Tokyo, Bunkyo-ku, Japan; 3. PRESTO, JST, Tokyo, Japan; 4. Center for Spintronics Research Network, The University of Tokyo, Bunkyo-ku, Japan

K2-11. Withdrawn

K2-12. Phase Behavior of Charged Magnetic Nanoplatelets. *M. Rosenberg*¹ and *S. Kantorovich*^{1,2} *1. Universitat Wien, Wien, Austria; 2. Ural'skij federal'nyj universitet imeni pervogo Prezidenta Rossii B N El'cina, Ekaterinburg, Russian Federation*

K2-13. Room-Temperature Ferromagnetism and Strain-Dependent Magnetic Anisotropy in 2D MnGaN. *Y. Ma*¹, *D. Hunt*^{2,3}, *K. Meng*⁴, *T. Erickson*¹, *F. Yang*⁴, *M. Barral*^{2,3}, *V. Ferrari*^{2,3} and *A.R. Smith*¹ *1. Ohio University Nanoscale and Quantum Phenomena Institute, Department of Physics and Astronomy, Athens, OH, United States; 2. Departamento de Física de la Materia Condensada, GlyA, CAC, Comisión Nacional de Energía Atómica, Buenos Aires, Argentina; 3. Instituto de Nanociencia y Nanotecnología INN (CNEA-CONICET), Buenos Aires, Argentina; 4. The Ohio State University Department of Physics, Columbus, OH, United States*

K2-14. Withdrawn

WEDNESDAY
EVENING
7:00

LIVE Q&A 11

Session K3

SPIN INJECTION AND TRANSPORT IN NANOSCALE DEVICES

Dong-Soo Han, Chair

Korea Institute of Science and Technology, Seoul,
The Republic of Korea

K3-01. Energy and Momentum Conservation in Spin Transfer. *A. Mitrofanov*¹ and *S. Urazhdin*¹ *1. Emory University, Atlanta, GA, United States*

K3-02. Far out-of-Equilibrium Spin Populations Trigger Giant Spin Injection Into Atomically Thin MoS₂. *M. Battiato*¹, *K. Held*², *L. Cheng*¹, *X. Wang*¹, *J. Chai*³, *W. Yang*³, *M. Yang*³, *M. Cheng*⁴, *Y. Wu*⁴, *X. Cheng*¹, *D. Chi*³, *K. Goh*³, *J. Zhu*⁵, *H. Sun*¹, *S. Wang*³, *J. Song*¹, *H. Yang*⁴ and *E. Chia*¹ *1. Nanyang Technological University, Singapore, Singapore; 2. Technische Universitat Wien, Wien, Austria; 3. Agency for Science Technology and Research, Singapore, Singapore; 4. National University Singapore Faculty of Science, Singapore, Singapore; 5. Los Alamos National Laboratory, Los Alamos, NM, United States*

- K3-03. Spin Injection Enhancement via Ultra-Thin Oxide Barriers Into Molecularly Functionalized Graphene.** *J.C. Toscano Figueroa*^{1,2}, *N. Natera Cordero*^{1,2}, *D. Bandurin*¹, *C.R. Anderson*¹, *V. Guarochico Moreira*¹, *I. Grigorieva*¹ and *I.J. Vera-Marun*¹ *1. Physics and Astronomy, The University of Manchester, Manchester, United Kingdom; 2. Consejo Nacional de Ciencia y Tecnologia, Mexico City, Mexico*
- K3-04. Spin Transport in two-Terminal Lateral Devices. (Invited)** *A.M. Spiesser*², *H. Saito*², *Y. Fujita*³, *S. Yamada*^{3,1}, *K. Hamaya*^{3,1}, *S. Yuasa*² and *R. Jansen*² *1. Center for Spintronics Research Network, Osaka University Graduate School of Engineering Science, Osaka, Japan; 2. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 3. Department of Systems Innovation, Osaka University Graduate School of Engineering Science, Osaka, Japan*
- K3-05. Origin of the Magnetic Field Enhancement of the Spin Signal in Metallic Non-Local Spin Transport Devices.** *A.J. Wright*¹, *M.J. Erickson*^{2,3}, *D. Bromley*¹, *P.A. Crowell*², *C. Leighton*³ and *L. O'Brien*¹ *1. Physics, University of Liverpool, Liverpool, United Kingdom; 2. Physics and Astronomy, University of Minnesota, Minneapolis, MN, United States; 3. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, United States*
- K3-06. Ballistic Spin Transport in InSb Nanowires With Strong Rashba Spin-Orbital Interaction.** *Z. Yang*¹, *B. Heischmidt*¹, *S. Gazibegovic*², *G. Badawy*², *D. Car*², *P.A. Crowell*¹, *E.P. Bakkers*² and *V.S. Pribiag*¹ *1. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN, United States; 2. Eindhoven University of Technology, Eindhoven, Netherlands*
- K3-07. Unusual Scaling of Kondo Spin Relaxation.** *X. Shen*¹ and *Y. Ji*¹ *1. University of Delaware, Newark, DE, United States*
- K3-08. Magnetotransport Effect in Magnetic Heterojunctions: Combined First-Principles With NEGF and Spin Dynamics.** *B. Huang*¹, *C. Chao*¹, *Y. Tang*¹ and *C. Kaun*² *1. Physics, National Central University, Chung-Li, Taiwan; 2. Research Center for Applied Sciences Academia Sinica, Taipei, Taiwan*

Session K4
2D MAGNETIC MATERIALS: TRANSPORT
PROPERTIES
(Poster Session)

Yong-Chang Lau, Chair
Tohoku University, Sendai, Japan

- K4-01. Ultrahigh Efficient Spin-Orbit-Torque Magnetization Switching in Sputtered Topological Insulator BiSb and (Co/Pt)₂ Multilayers.** *F. Tuo*¹, H. Nguyen^{1,2}, S. Nakano¹ and H.N. Pham^{1,3} *1. Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Tokyo, Japan; 2. Department of Physics, Ho Chi Minh City University of Education, Ho Chi Minh City, Vietnam; 3. Center for Spintronics Research Network, The University of Tokyo, Tokyo, Japan*
- K4-02. Withdrawn**
- K4-03. Band-Structure Spin-Filtering in Vertical Spin Valves Based on CVD Grown WS₂.** *V. Zlatko*¹, M. Galbiati¹, S. Dubois², M. Och³, C. Mattevi³, P. Brus⁴, B. Servet⁴, M. Martin¹, F. Godel¹, J. Charlier², F. Petroff¹, B. Dlubak¹ and P. Seneor¹ *1. Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, Palaiseau, France; 2. Institute of Condensed Matter and Nanosciences, Université catholique de Louvain, Louvain-La-Neuve, Belgium; 3. Department of Materials, Imperial College, London, United Kingdom; 4. Thales Research and Technology, Palaiseau, France*
- K4-04. Magnetotransport Characteristics in Second-Order Weyl Semimetals.** *S. Komori*¹ and K. Kondo¹ *1. Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan*
- K4-05. α -Sn Magnetotransport Devices.** *O. Vail*¹, A. Chang², S. Harrington², P. Folkes¹, P. Taylor¹, G. de Coster¹ and C. Palmstrom² *1. RLS-EE, US Army Research Laboratory, Adelphi, MD, United States; 2. Electrical & Computing Engineering and Materials, University of California Santa Barbara, Santa Barbara, CA, United States*
- K4-06. Withdrawn**
- K4-07. Withdrawn**
- K4-08. Spin Caloritronic Device Based on Asymmetric Surfaces of Magnetic Topological Insulators.** *T. Chiba*¹, S. Takahashi² and T. Komine³ *1. National Institute of Technology, Fukushima College, Iwaki, Japan; 2. Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 3. Faculty of Engineering, Ibaraki University, Hitachi, Japan*

- K4-09. Large Multi-Directional Spin-to-Charge Conversion in low Symmetry Semimetal MoTe_2 at Room Temperature.** N. Ontoso¹, C. Safeer¹, J. Ingla-Aynés¹, F. Herling¹, V. Pham^{2,1}, A. Kurzman³, K. Ensslin³, A. Chuvilin^{1,6}, I. Robredo^{4,7}, M. Vergniory^{4,6}, F. de Juan^{4,6}, L.E. Hueso^{1,6}, M. Calvo^{1,5} and F. Casanova^{1,6} 1. *CIC nanoGUNE, San Sebastian, Spain*; 2. *SPINtronique et Technologie des Composants, Grenoble, France*; 3. *Department of Physics, ETH Zurich Campus Honggerberg, Eidgenossische Technische Hochschule Zurich - Campus Honggerberg, Zurich, Switzerland*; 4. *Donostia International Physics Center, San Sebastian, Spain*; 5. *Departamento de Física Aplicada, Universitat d'Alacant, Alacant, Spain*; 6. *Ikerbasque, Bilbao, Spain*; 7. *Department of Condensed Matter Physics, Universidad del Pais Vasco, Bilbao, Spain*
- K4-10. Electrical Bandgap Tuning and Spin Transport in Fully Encapsulated Bilayer Graphene Devices: Steps Towards 2D Spin Logic.** C.R. Anderson¹, V.H. Guarochico-Moreira^{1,2}, N. Natera Cordero^{1,3}, J.C. Toscano Figueroa^{1,3}, I. Grigorieva¹ and I.J. Vera-Marun¹ 1. *Physics and Astronomy, The University of Manchester, Faculty of Science and Engineering, Manchester, United Kingdom*; 2. *Departamento de Física, Escuela Superior Politécnica del Litoral, Guayaquil, Ecuador*; 3. *CONACyT, Consejo Nacional de Ciencia y Tecnología, Mexico City, Mexico*
- K4-11. Withdrawn**
- K4-12. A Study of Magnetoresistance in Type-I and Type-II Weyl Semimetals.** K. Morishima¹ and K. Kondo¹ 1. *Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan*
- K4-13. Size Effect in the Kinetic Properties in Thin Films of Bi_2Se_3 Topological Insulator.** V. Chistyakov¹, A. Domozhirova¹, J.A. Huang³ and V. Marchenkov^{1,2} 1. *M.N. Mikheev Institute of Metal Physics UB RAS, Ekaterinburg, Russian Federation*; 2. *Ural Federal University, Ekaterinburg, Russian Federation*; 3. *National Cheng Kung University, Tainan, Taiwan*
- K4-14. Charge Trapping Analysis in Sputtered $\text{Bi}_x\text{Se}_{1-x}$ Based Accumulation-Mode FETs - Part 2.** P. Sahu¹, J. Chen^{2,3} and J. Wang³ 1. *School of Physics and Astronomy, University of Minnesota, Minneapolis, MN, United States*; 2. *HFC Semiconductor, Fishkill, NY, United States*; 3. *Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*

Session K5
BIOMEDICAL APPLICATIONS II
(Poster Session)

Gaspare Varvaro, Chair

Consiglio Nazionale delle Ricerche, Monterotondo Scalo (RM), Italy

- K5-01. Advancements in the Receive Hardware for the Single Sided Magnetic Particle Imaging Scanner.** J.D. Pagan¹, C. McDonough¹, J. Lin² and A. Tonyushkin¹ *1. Physics Department, University of Massachusetts Boston, Boston, MA, United States; 2. Engineering Department, University of Massachusetts Boston, Boston, MA, United States*
- K5-02. Effects of PEGylated Fe/Fe₃O₄ Core Shell Nanoparticles on Cancer Cells.** B.H. Domac¹, S. Alkhatib¹, O. Zirhli², N. Gunduz Akdogan³, G. Bulut¹ and O. Akdogan¹ *1. Bahcesehir Universitesi Muhendislik ve Doga Bilimleri Fakultesi, Istanbul, Turkey; 2. Sabanci Universitesi Muhendislik ve Doga Bilimleri Fakultesi, Istanbul, Turkey; 3. Piri Reis Universitesi, Istanbul, Turkey*
- K5-03. Effect of Applied Magnetic Field on Permeability and Heating Efficiency of Multifunctional Micro/Nano-Magnetic Particles for Hyperthermia Therapy.** L. Ton That¹, Y. Yamamoto², K. Mitobe³ and S. Yabukami¹ *1. Department of Electrical Engineering, Tohoku University, Sendai, Japan; 2. Department of Systems Design Engineering, Akita University, Akita, Japan; 3. Department of Mathematical Science and Electrical-Electronic-Computer Engineering, Akita University, Akita, Japan*
- K5-04. Iron Carbide Nanoparticles for Multimodal Hyperthermia Heating.** M. Xing¹, J. Mohapatra¹, J. Beatty¹, J. Elkins¹, A. Chalise¹, W. Chen¹, M. Jin¹ and P. Liu¹ *1. Department of Physics, The University of Texas at Arlington, Arlington, TX, United States*
- K5-05. Core-Shell ZnO@Fe₃O₄ Nanostructure for Magnetic Hyperthermia and Bio-Imaging Applications.** J. Gupta¹, P. Hassan¹ and k. Barick¹ *1. Chemistry, Bhabha Atomic Research Centre, Mumbai, India*
- K5-06. Effect of Coil Positioning and Orientation of the Quadruple Butterfly Coil During Transcranial Magnetic Stimulation.** O.F. Afuwape^{1,2}, P. Rastogi¹ and D.C. Jiles¹ *1. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA, United States; 2. Department of Mechanical Engineering, Iowa State University, Ames, IA, United States*
- K5-07. Coil Design for Simultaneous Dual-Site Transcranial Magnetic Stimulation to Effectively Modulate the Motor Cortex.** J. Boldrey¹, G. Goss¹, A. Boes² and D.C. Jiles¹ *1. Electrical and Computer Engineering, Iowa State University, Ames, IA, United States; 2. Departments of Neurology, Psychiatry, and Pediatrics, University of Iowa Carver College of Medicine, Iowa City, IA, United States*

K5-08. Modification of Thiol Groups on Magnetic Nanoparticles for Theranostics. H. Katayanagi¹, S. Hamada¹, A. Usui³, Y. Hosokai⁴ and Y. Ichiyangi^{1,2} *1. Physics, Yokohama National University, Yokohama, Japan; 2. Research Center for Thermal and Entropic Science, Osaka University, Toyonaka, Japan; 3. School of Medicine, Tohoku University, Sendai, Japan; 4. International University of Health and Welfare, Otawara, Japan*

K5-09. Withdrawn

K5-10. An Experimental View on Retinal Receptivity of ELF-Inducing Blindsight-Like Phosphenes. H. Nakagawa¹, M. Sugai¹, S. Fujiwara² and S. Ueno³ *1. Tokyo Denki University, Tokyo, Japan; 2. CPCC, Tokyo, Japan; 3. Kyushu University, Fukuoka, Japan*

K5-11. Methodology for Focality Homogenization in Magnetic Stimulation of Biological Tissues. I.C. Carmona¹ and R.L. Hadimani^{1,2} *1. Dept. of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA, United States; 2. Dept. of Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, United States*

K5-12. Withdrawn

WEDNESDAY
EVENING
7:30

LIVE Q&A 12

Session L1

MAGNETIC MICROSCOPY AND IMAGING I

Sophie Morley, Chair

Lawrence Berkeley National Laboratory, Berkeley, CA, United States

L1-01. Frontiers of Magnetic Force Microscopy. (Invited)
O. Kazakova¹, R. Puttock¹, C. Barton¹, H. Corte-León¹, M. Jaafar², V. Neu³ and A. Asenjo² *1. Quantum Technology, NPL, London, United Kingdom; 2. Consejo Superior de Investigaciones Científicas, Madrid, Spain; 3. IFW, Dresden, Germany*

L1-02. New Vortex Core Probe for Magnetic Force Microscopy.
J. Soltys¹, I. Vetrova¹, J. Feilhauer¹, J. Tobik¹, K. Bublikov¹, V. Cambel¹ and J. Fedor¹ *1. Elektrotechnický ústav SAV, Bratislava, Slovakia*

- L1-03. Magnetic Field Induced Half-Hedgehog Spin-Textures in Soft Hemispherical Nanodots.** E. Berganza^{1,2}, M. Jaafar^{1,3}, J.A. Fernandez- Roldan^{1,4}, M. Goiriena-Goikoetxea^{5,6}, J. Pablo-Navarro⁷, A. García-Arribas^{5,8}, K.Y. Guslienko⁹, C. Magén^{7,10}, J. de Teresa^{7,10}, O. Chubykalo-Fesenko¹ and A. Asenjo¹
1. ICMM-CSIC, Madrid, Spain; 2. Institute of Nanotechnology, KIT, Eggenstein-Leopoldshafen, Germany; 3. Departamento de Física de la Materia Condensada, UAM, Madrid, Spain; 4. Departamento de Física, Universidad de Oviedo, Oviedo, Spain; 5. Departamento de Electricidad y Electrónica, UPV/EHU, Leioa, Spain; 6. Department of Electrical Engineering and Computer Science, University of California Berkeley, Berkeley, CA, United States; 7. Instituto de Nanociencia de Aragon, Zaragoza, Spain; 8. Fundacion BCMaterials - Basque Center for Materials Applications and Nanostructures, Leioa, Spain; 9. Department of Materials Physics, UPV/EHU, Donostia, Spain; 10. ICMA-CSIC, Zaragoza, Spain
- L1-04. Magnetic Texture Evolution Within Uniaxial Kagome Ferromagnets at Constant Heating/Cooling Rates.** A. Sugawara¹, T. Akashi¹, M. Kassem^{2,3}, Y. Tabata², T. Waki² and H. Nakamura² *1. Center for Exploratory Laboratory, Hitachi Ltd, Hatoyama, Japan; 2. Department of Materials Science and Engineering, Kyoto University, Kyoto, Japan; 3. Assiut University Faculty of Science, Assiut, Egypt*
- L1-05. Using Time-Resolved SEMPA Imaging to Reveal the Dynamics of Multiple Competing Switching Pathways Using Just a Single Measurement.** R.M. Reeve¹, D. Schönke¹, H. Stoll^{2,1} and M. Klau¹ *1. Johannes Gutenberg Universitat Mainz, Mainz, Germany; 2. Max-Planck-Institut für Intelligente Systeme, Stuttgart, Germany*
- L1-06. Imaging Magnetic Domains at the Surface of Fe₃O₄(001) Using a Spin-Polarised Metastable Helium Beam.** P. Bentley^{1,2}, R.F. Evans¹, X. Sun³, M. Kurahashi², A. Pratt¹ and Y. Yamauchi² *1. Department of Physics, University of York, York, United Kingdom; 2. National Institute for Materials Science, Tsukuba, Japan; 3. University of Science and Technology of China, Hefei, China*
- L1-07. Imaging non-Collinear Antiferromagnetic Textures via Single Spin Relaxometry. (Invited)** A. Finco¹ *1. Laboratoire Charles Coulomb, Université de Montpellier and CNRS, Montpellier, France*
- L1-08. NV- Center Magnetometry Using Sequential Bayesian Experiment Design.** S. Dushenko^{2,1}, K. Ambal^{3,4} and R.D. McMichael² *1. Institute for Research in Electronics and Applied Physics, University of Maryland, College Park, College Park, MD, United States; 2. Physical Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, United States; 3. Institute for Research in Electronics and Applied Physics, University of Maryland, College Park/NIST, College Park, MD, United States; 4. Wichita State University, Wichita, KS, United States*
- L1-09. Antiferromagnetic Spin Cycloidal Orders Imaged With a Commercial Scanning Nitrogen-Vacancy Magnetometer.** H. Zhong¹, A. Stark¹, F. Favaro¹ and P. Maletinsky¹ *1. Qnami AG, Muttens, Switzerland*

- L1-10. Magnetic Singularities Topological Charge Experimentally Revealed via Soft X-Ray Tomography.** A. Hierro-Rodriguez^{1,2}, C. Quiros^{1,2}, A. Sorrentino³, L. Alvarez Prado^{1,2}, J. Martín^{1,2}, J. Alameda^{1,2}, S. McVitie⁴, E. Pereiro³, M. Velez^{1,2} and S. Ferrer³
1. Physics, Universidad de Oviedo, Oviedo, Spain; 2. CINN (CSIC-Universidad de Oviedo), El Entrego, Spain; 3. Experiments, CELLS, ALBA Synchrotron, Cerdanyola del Valles, Spain; 4. School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom
- L1-11. Field Dependence Chirality in Ferromagnetic Multilayers Probed by Dichroism in x-ray Resonant Magnetic Scattering.** E.O. Burgos Parra^{3,1}, W. Legrand¹, S. Flewett², F. Ajejas¹, C. Leveille³, Y. Sassi¹, P. Gargiani⁴, M. Valvidares⁴, N. Reyren¹, V. Cros¹ and N. Jaouen³
1. Unite Mixte de Physique CNRS/Thales, Palaiseau, France; 2. Pontificia Universidad Catolica de Valparaiso Facultad de Ciencias, Valparaiso, Chile; 3. Synchrotron SOLEIL, Gif-sur-Yvette, France; 4. Sincrotron ALBA, Barcelona, Spain
- L1-12. Imaging Shape and Voltage Control of Spin Textures in Ferro Heterostructures.** R.V. Chopdekar¹
1. Advanced Light Source, E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States
- L1-13. Direct Observation of Temperature Dependent Vortex Dynamics in a $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ Micromagnet.** E. Digernes², J. Leliaert¹, M. Weigand³, E. Folven² and B. Van Waeyenberge¹
1. Dept. of Solid State Sciences, Universiteit Gent, Gent, Belgium; 2. Department of Electronic Systems, Norges teknisk-naturvitenskapelige universitet, Trondheim, Norway; 3. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany
- L1-14. Fiber-Optic Magnetic Vector Gradient Imaging With Fluorescent Defects in Diamond.** S.M. Blakley^{1,2}, I.V. Fedotov^{3,4}, J. Becker¹ and A.M. Zheltikov^{1,3}
1. Department of Physics & Astronomy, Texas A&M University, College Station, TX, United States; 2. Physical Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, United States; 3. Physics Department, Lomonosov Moscow State University, Moscow, Russian Federation; 4. Russian Quantum Center, Skolkovo, Russian Federation

Session L2
**VOLTAGE-CONTROLLED MAGNETIC ANISOTROPY
AND SWITCHING**

Takayuki Nozaki, Chair

Natnaol Institute of Advanced Industrial Science and Technology,
Tsukuba, Japan

- L2-01. Voltage Control of Magnetism Enabled by Resistive Switching. (Invited)** P. Salev¹, L. Fratino², D.Y. Sasaki³, R. Berkoun², J. del Valle⁴, Y. Kalcheim¹, Y. Takamura³, M. Rozenberg² and I.K. Schuller¹ 1. *University of California San Diego, La Jolla, CA, United States*; 2. *Laboratoire de Physique des Solides, Orsay, France*; 3. *University of California Davis, Davis, CA, United States*; 4. *Universite de Geneve, Geneva, Switzerland*
- L2-02. Voltage-Induced Ferromagnetism in Diamagnetic FeS₂.** J. Walter^{1,2}, B. Voigt¹, E. Day-Roberts¹, K. Heltemes², R. Fernandes¹, T. Birol¹ and C. Leighton¹ 1. *University of Minnesota, Minneapolis, MN, United States*; 2. *Augsburg University, Minneapolis, MN, United States*
- L2-03. Inverse of Voltage Controlled Magnetic Anisotropy (VCMA) Effect.** A. Shukla¹, A. Chouhan¹, R. Pandey¹, R. Maripeddi¹, T. Yamamoto², H. Kubota², A. Fukushima², S. Yuasa², T. Nozaki² and A. Tulapurkar¹ 1. *Electrical Engineering, Indian Institute of Technology Bombay, Mumbai, India*; 2. *Sangyo Gijutsu Sogo Kenkyujo Tsukuba Chuo, Tsukuba, Japan*
- L2-04. Optimization of the VCMA Driven Magnetization Reversal.** R. One^{1,2}, H. Béa², C. Fillion², S. Mican¹, M. Joldos³, B. Dieny², L. Buda-Prejbeanu² and C. Tiusan^{1,3} 1. *Faculty of Physics, Babes-Bolyai University, Cluj-Napoca, Romania*; 2. *Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, IRIG-SPINTEC, 38000 Grenoble, France*; 3. *Technical University of Cluj-Napoca, Cluj-Napoca, Romania*
- L2-05. Impact of Ambient Temperature on the Switching Behavior of Voltage-Controlled Perpendicular Magnetic Tunnel Junction.** Y. Wu^{1,2}, W. Kim¹, S. Van Beek¹, S. Couet¹, R. Carpenter¹, S. Rao¹, S. Kundu¹, F. Yasin¹, D. Crotti¹, J. Van Houdt^{1,2}, G. Groeseneken^{1,2} and G.S. Kar¹ 1. *imec, Leuven, Belgium*; 2. *ESAT, KULeuven, Leuven, Belgium*
- L2-06. Tuning Magnetic Anisotropy and Skyrmion Stability With Electric Field.** A. Fassatoui¹, J. Peña Garcia¹, A. Mantel², L. Ranno¹, H. Béa³, J. Vogel¹ and S. Pizzini¹ 1. *Institut NEEL, Grenoble, France*; 2. *Laboratoire de Physique et Chimie des Nano-objets, Toulouse, France*; 3. *SPINtronique et Technologie des Composants, Grenoble, France*
- L2-07. Hydroxide-Based Magneto-Ionics: Paramagnetic-to-Ferromagnetic Transition in Electrolyte-Gated α -Co(OH)₂.** A. Quintana-Puebla¹, A.A. Firme², C.J. Jensen¹ and K. Liu¹ 1. *Physics Department, Georgetown University, Washington, DC, United States*; 2. *Physics and Astronomy, University of Wyoming, Laramie, WY, United States*

- L2-08. Magneto-Ionic Enhancement of Exchange Bias in MnN/CoFe.** *C.J. Jensen*¹, *A. Quintana*¹, *P. Quarterman*², *A.J. Grutter*² and *K. Liu*¹ *1. Physics, Georgetown University, Washington, DC, United States; 2. NIST Center for Neutron Research, Gaithersburg, MD, United States*
- L2-09. Superconductivity-Induced Change in Magnetic Anisotropy in Epitaxial Ferromagnet-Superconductor Hybrids With Spin-Orbit Interaction.** *C. González-Ruano*^{1*}, *D. Caso*¹, *L.G. Johnsen*², *C. Tiusan*^{3,4}, *M. Hehn*⁴, *N. Banerjee*⁵, *J. Linder*² and *F.G. Aliev*¹ *1. Universidad Autonoma de Madrid, Madrid, Spain; 2. Center for Quantum Spintronics, Norwegian University of Science and Technology, Trondheim, Norway; 3. Center of Superconductivity Spintronics and Surface Science C4S, Technical University of Cluj-Napoca, Cluj-Napoca, Romania; 4. Institut Jean Lamour, Nancy Universite, Nancy, France; 5. Loughborough University, Epinal Way, Loughborough, United Kingdom*

WEDNESDAY
EVENING
7:30

LIVE Q&A 12

Session L3
MAGNETIZATION DYNAMICS AND DAMPING III
(Poster Session)

Takeshi Kato, Chair
Nagoya University, Nagoya, Japan

- L3-01. Fully-Vector Simulation Framework for the Investigation of Magnetisation Dynamics and Skyrmions.** *J. O'Brien*¹ and *P. Stamenov*¹ *1. Physics, University of Dublin Trinity College, Dublin, Ireland*
- L3-02. Utilizing Four-Node Tetrahedra-Shaped Hopfield Neural Network Configurations in the Local Magnetization Assessment of 3D Objects Exhibiting Hysteresis.** *A. Adly*¹ and *S. Abd-El-Hafiz*² *1. Elect. Power Engineering Dept., Cairo University Faculty of Engineering, Cairo, Egypt; 2. Engineering Mathematics and Physics Dept., Cairo University Faculty of Engineering, Cairo, Egypt*
- L3-03. Discrete Magnetic Breathers in Monoaxial Chiral Helimagnet.** *A. Ovchinnikov*¹, *I. Bostrem*¹, *V. Sinitsyn*¹, *E. Ekomasov*^{3,4} and *J. Kishine*² *1. Institute Natural Sciences and Mathematics, Ural Federal Univeristy, Ekaterinburg, Russian Federation; 2. The Open University of Japan, Chiba, Japan; 3. Bashkir State University, Ufa, Russian Federation; 4. South Ural State University, Chelyabinsk, Russian Federation*

* - Best student presentation award finalist

- L3-04. Atomistic Spin-Lattice Dynamics on Model Hamiltonians in low-Dimensional Systems.** *D. Thonig*¹, *J. Hellsvik*^{4,5}, *M. Pereiro*², *J. Fransson*² and *A. Delin*^{3,2} *1. School of Science and Technology, Örebro University, Örebro, Sweden; 2. Department of Physics and Astronomy, Uppsala Universitet, Uppsala, Sweden; 3. Department of Applied Physics, School of Engineering Sciences, KTH Royal Institute of Technology, Kista, Sweden; 4. Nordic Institute for Theoretical Physics, Stockholm, Sweden; 5. Department of Physics, KTH Royal Institute of Technology, Stockholm, Sweden*
- L3-05. Effect of Perpendicular Magnetic Field on Domain Wall Motion of Glass-Coated Magnetically Bistable Microwires With Different Anisotropy.** *L. Fecova*^{1,2}, *K. Richter*^{1,3} and *R. Varga*² *1. Department of Physics of Condensed Matters, Pavol Jozef Safarik University in Kosice Institute of Physics, Kosice, Slovakia; 2. Center for Progressive Materials, Pavol Jozef Safarik University in Kosice, Technology and Innovation Park, Kosice, Slovakia; 3. Institute of Materials Science, Kiel University, Kiel, Germany*
- L3-06. Field Induced Uniaxial Anisotropy in Ferromagnetic Thin Films.** *B. Nepal*¹, *A. Pokhrel*¹, *M. Bruno*¹, *J. Cates*¹, *F. Brunson*¹, *D. Fox*¹, *A. Grice*¹, *J. Ingram*¹, *A. Leone*¹, *A. Lewis*¹, *C. Murray*¹, *L. Stoll*¹, *H. Trewin*¹, *T. Mewes*¹, *C. Mewes*¹ and *G. Mankey*¹ *1. Physics and Astronomy, The University of Alabama, Tuscaloosa, AL, United States*
- L3-07. Spin-Polarized Photocurrent in TbCo/FeCo Superlattice Observed via THz Time Domain Spectroscopy.** *D. Khusyainov*¹, *S.V. Ovcharenko*¹, *A. Buryakov*¹, *N. Tiercelin*², *V. Preobrajenski*³, *E. Mishina*¹ and *A. Sigov*¹ *1. Nanotechnology, MIREA Russian Technological University, Moscow, Russian Federation; 2. Universite de Lille, Lille, France; 3. Institut obsej fiziki imeni A M Prohorova RAN, Moscow, Russian Federation*
- L3-08. Influence of Induced Uniaxial Anisotropy in Silicon-Doped Yttrium Iron Garnet (YIG:Si) Film on Ultrafast Dynamics of Magnetization Excited by Femtosecond Laser Pulses.** *S.V. Ovcharenko*¹, *M.S. Gaponov*¹ and *E. Mishina*¹ *1. Nanoelectronics, MIREA Rossijskij tehnologiceskij universitet, Moscow, Russian Federation*
- L3-09. Time Dependence of Magnetic Moment of Strontium-Ferrite Powder Measured by Biaxial VSM.** *T. Ahmed*¹, *W.J. Geerts*¹ and *B. D.C.*¹ *1. Material Science, Engineering and Commercialization, Texas State University System, San Marcos, TX, United States*
- L3-10. Effect of the Ga Composition on the Soft and High-Frequency Magnetic Properties of Fe_{85.1-x}Ga_xB_{14.9} Thin Films.** *S. Muramatsu*¹, *T. Miyazaki*³ and *Y. Endo*^{1,2} *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan; 3. Faculty of Engineering, Tohoku University, Sendai, Japan*

- L3-11. Realization of Ferromagnetic Resonance in Inm Co Ultrathin Film.** *S. Yoshii*¹, *R. Ohshima*¹, *Y. Ando*¹, *T. Shinjo*¹ and *M. Shiraishi*¹ *1. Kyoto Daigaku, Kyoto, Japan*
- L3-12. Ferromagnetic Resonance and Micromagnetic Simulations of FeSiB Amorphous Thin Films.** *G. Soares*¹, *F. Celegato*¹, *F. Garcia-Sanchez*², *G. Barrera*¹, *M. Pasquale*¹ and *P. Tiberto*¹
1. Istituto Nazionale di Ricerca Metrologica, Turin, Italy;
2. epartamento de Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain
- L3-13. Reconfigurable and Bias-Field-Free Microwave Properties in C-, L- and S-Shaped Nanomagnets.** *K. Begari*¹ and *A. Haldar*¹ *1. Physics Department, Indian Institute of Technology Hyderabad, Hyderabad, India*
- L3-14. Electromagnetic Wave Absorption and Resonance in Infinite Cobalt Nano-Prisms.** *M. Aziz*¹ and *C. McKeever*²
1. Engineering, University of Exeter, Exeter, United Kingdom;
2. Physics, University of Exeter, Exeter, United Kingdom
- L3-15. Optimization of Lumped Element Resonator via Total Capacitive Design and Coplanar Waveguide Configuration for Effective Magnon-Photon Coupling.** *Y. Xiong*¹, *Y. Li*², *T. Polakovic*², *R. Divan*², *J. Pearson*², *H. Qu*¹, *Z. Xiao*^{2,3}, *W. Kwok*², *W. Zhang*¹ and *V. Novosad*² *1. Oakland University, Rochester, MI, United States; 2. Argonne National Laboratory, Lemont, IL, United States; 3. Northern Illinois University, DeKalb, IL, United States*

WEDNESDAY
EVENING
7:30

LIVE Q&A 12

Session L4
MAGNETO-ELASTIC AND MAGNETO-CALORIC
MATERIALS III
(Poster Session)

Brian Lejeune, Chair
Northeastern University, Boston, MA, United States

- L4-01. The Effect of Mn Substitution by Co and Ni in Fe-Rich (Mn,Fe)₂(P,Si).** *A. Kiecana*¹, *I. Batashev*¹, *A.I. Dugulan*¹, *N.v. van Dijk*¹ and *E. Brück*¹ *1. Radiation, Science and Technology, Technische Universiteit Delft, Delft, Netherlands*
- L4-02. Novel MnP Thin Films With Integrated Thermoelectric and Thermomagnetic Functionalities for Energy-Efficient Solid State Refrigeration.** *C. Hung*¹, *R.M. Madhogia*¹, *A. Duong*², *R. Das*², *H. Pham*², *S. Cho*³, *H. Srikanth*¹ and *M. Phan*¹
1. Physics, University of South Florida, Tampa, FL, United States; 2. Phenikaa Research and Technology Institute, Phenikaa University, Hanoi, Vietnam; 3. Department of Physics and Energy Harvest-Storage Research Center, University of Ulsan, Ulsan, The Republic of Korea

- L4-03. Structural and Magnetostrictive Properties of Fe-Ga-Tb Alloys: Density-Functional Theory Study.** *M. Adelani¹, S. Olive Méndez¹, F. Espinosa-Magaña¹ and M. Grijalva Castillo¹* *1. Material Physics, Centro de Investigacion en Materiales Avanzados, S.C., Chihuahua, Mexico*
- L4-04. Structural and Magnetocaloric Properties 0.75La_{0.7}Ca_{0.3}MnO₃/ 0.25La_{0.84}Sr_{0.16}MnO₃ Nanocomposite.** *P. Bishl¹, M. .¹, A. Gaur¹ and R.N. Mahato¹* *1. School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India*
- L4-05. Thermoplastic Elastomers With Strontium Ferrite Particulate and Magnetic Annealing Used for Fused Deposition Modeling.** *S. Ziemann¹, N.A. Fischer¹, A. Robinson¹, T. Lee¹ and B. Nelson-Cheeseman¹* *1. Mechanical Engineering, University of Saint Thomas, Saint Paul, MN, United States*
- L4-06. Large Magnetocaloric Effect due to Anhyseretic First-Order Transition in Pr₂in.** *A. Biswas¹, N.A. Zarkevich¹, A.K. Pathak^{1,2}, O. Dolotko¹, I.Z. Hlova¹, Y. Mudryk¹, A.V. Smirnov¹, D.D. Johnson^{1,3} and V.K. Pecharsky^{1,3}* *1. Ames Laboratory, Ames, IA, United States; 2. SUNY Buffalo State College, Buffalo, NY, United States; 3. Department of Materials Science and Engineering, Iowa State University, Ames, IA, United States*
- L4-07. Influence of Ni/Mn Concentration on the Magnetocaloric Effect in Ni_{43+x}Mn_{46-x}Sn₁₁ (x = 0; 1) Heusler Alloys.** *S. Emelyanova¹ and V. Marchenkov^{1,2}* *1. UB RAS, M.N. Mikheev Institute of Metal Physics, Ekaterinburg, Russian Federation; 2. Ural Federal University named after the first President of Russia B.N.Yeltsin, Ekaterinburg, Russian Federation*
- L4-08. On the Synthesis and Magnetocaloric Behavior of the Ni_{37.5}Co_{12.5}Mn₃₅Ti₁₅ Quaternary Alloy.** *M. López¹, J. Zamora Mendieta¹, C.F. Sánchez Valdés² and J.L. Sánchez Llamazares¹* *1. División de materiales avanzados, Instituto Potosino de Investigacion Cientifica y Tecnologica AC, San Luis Potosi, Mexico; 2. División Multidisciplinaria, Universidad Autonoma de Ciudad Juarez, Juarez, Mexico*
- L4-09. Thermal Cycling Influence on the Thermomagnetic Properties of Ni-Mn-Sn Based Magnetic Shape Memory Alloys.** *A. Wederni¹, J. Saurina¹, M. Escoda¹, M. Ipatov², J. gonzalez² and J. Suñol¹* *1. Universitat de Girona, Girona, Spain; 2. University of Basque Country, San Sebastián, Spain*
- L4-10. Magnetic Annealing of Extruded Thermoplastic Magnetorheological Elastomers for 3D-Printing via FDM.** *N.A. Fischer¹, A. Robinson¹, T. Lee¹, T. Calascione¹, L.J. Koerner² and B. Nelson-Cheeseman¹* *1. Mechanical Engineering, University of Saint Thomas, Saint Paul, MN, United States; 2. Electrical & Computer Engineering, University of Saint Thomas, Saint Paul, MN, United States*

- L4-11. Magnetic and Magnetocaloric Properties of Tb_5Si_4 .** V. Khovaylo^{1,2}, S.V. Taskaev^{3,2}, K. Skokov⁴, M.N. Ulyanov³, D. Bataev³, M.Y. Bogush³, D. Plakhotskiy³, M. Kononova^{1,3} and Z. Hu⁵ 1. National University of Science and Technology MISiS, Moscow, Russian Federation; 2. National Research South Ural State University, Chelyabinsk, Russian Federation; 3. Department of Physics, Chelyabinsk State University, Chelyabinsk, Russian Federation; 4. Technische Universitat Darmstadt, Darmstadt, Germany; 5. University of Science and Technology Beijing, Beijing, China
- L4-12. Thermal Switches in Solid State Magnetic Refrigeration: Conductivity Change Requirements and Effects.** D. Silva¹, A. Pereira¹, J. Ventura¹, J. Araújo¹ and J. Oliveira² 1. IFIMUP, University of Porto, Porto, Portugal; 2. LAETA, University of Porto, Porto, Portugal
- L4-13. Optimization of Magnetic Refrigerant Capacity of Mn_5Ge_3 Alloy Near Room Temperature.** L. Bachhraj¹, A. Rathi¹, A. Verma¹, B. Gahtori¹, R. Pant¹, P.D. Babu² and G. Basheed¹ 1. AcSIR, CSIR-National Physical Laboratory (NPL) Campus, New Delhi, India; 2. BARC campus, UGC-DAE Consortium for scientific research, Mumbai, India
- L4-14. A Study of Effect of Mechanical Preloads on Magnetorheological Elastomers Hysteresis Loop.** W.M. Kiarie¹ and D.C. Jiles^{2,1} 1. Materials Science and Engineering, Iowa State University, Ames, IA, United States; 2. Electrical and Computer Engineering, Iowa State University, Ames, IA, United States
- L4-15. Withdrawn**
- L4-16. Effects of Particulate Size on the Magnetic and Magnetoactive Properties of an Extruded Magnetorheological Thermoplastic Elastomer.** A. Robinson¹, N.A. Fischer¹, T. Lee¹, T.M. Calascione¹ and B. Nelson-Cheeseman¹ 1. Engineering, University of Saint Thomas, Saint Paul, MN, United States
- L4-17. Withdrawn**

Session S5
**PHYSICS AND APPLICATIONS IN TRANSMISSION
AND CONTROL OF SPIN-ORBIT TORQUES**

Jonathan Sun, Chair
IBM T. J. Watson Research Center, Yorktown Heights, NY,
United States

8:00

- S5-01. Spin-Orbit Torque Induced Magnetization Switching Based on Topological Spin Textures and Magnons. (Invited)** *H. Yang*¹ 1. National University of Singapore, Singapore, Singapore

8:36

- S5-02. Magnetization Switching Utilizing Surface States in Topological Materials. (Invited)** *M. Wu*¹, *P. Li*¹, *J. Kally*², *S. Zhang*³, *T. Pillsbury*², *J. Ding*¹, *G. Csaba*⁴, *J. Ding*³, *S. Jiang*³, *Y. Liu*⁵, *R. Sinclair*⁵, *C. Bi*⁶, *A. DeMann*¹, *G. Rimal*⁷, *W. Zhang*⁸, *S. Field*¹, *J. Tang*⁷, *W. Wang*⁶, *O. Heinonen*³, *V. Novosad*³, *A. Hoffmann*³ and *N. Samarth*² 1. Colorado State University, Fort Collins, CO, United States; 2. Pennsylvania State University, University Park, PA, United States; 3. Argonne National Laboratory, Lemont, IL, United States; 4. Pazmany Peter Catholic University, Budapest, Hungary; 5. Stanford University, Stanford, CA, United States; 6. University of Arizona, Tucson, AZ, United States; 7. University of Wyoming, Laramie, WY, United States; 8. Oakland University, Rochester, MI, United States

9:12

- S5-03. Planar Hall Driven Spin Torque in a Ferromagnet/Nonmagnet/Ferromagnet System. (Invited)** *C. Safranski*¹, *J. Xu*², *A.D. Kent*² and *J. Sun*¹ 1. IBM T. J. Watson Research Center, Yorktown Heights, NY, United States; 2. Physics, Center for Quantum Phenomena, New York University, New York, NY, United States

9:48

- S5-04. Electrical Spin Current Generation in Ferromagnets and at Ferromagnetic Interfaces. (Invited)** *V. Amin*¹, *P.M. Haney*² and *M.D. Stiles*² 1. Physics, Indiana University Purdue University, Indianapolis, Indianapolis, IN, United States; 2. National Institute of Standards and Technology, Gaithersburg, MD, United States

10:24

- S5-05. Metrology and Materials Optimization: Maximizing Spin Hall Ratio and Spin Torque Efficiency of Pt. (Invited)** *L. Zhu*¹, *L. Zhu*², *S. Shi*¹, *D. Ralph*¹ and *R. Buhrman*¹ 1. Cornell University, Ithaca, NY, United States; 2. Shaanxi Normal University, Xi'an, China

Session S6

NEXT GENERATION ARTIFICIAL SPIN ICE

Cristiano Nisoli, Chair

Los Alamos National Laboratory, Los Alamos, NM, United States

9:00

- S6-01. Artificial Spin Ice, Vertex Frustration, and the Advantages of Intentional Design. (Invited) P. Schiffer¹** *1. Yale University, New Haven, CT, United States*

9:36

- S6-02. Super-X-Magnetism: Investigation and Control of Ordering Processes in Artificial Spin Ice. (Invited) R. Stamps¹** *1. Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada*

10:12

- S6-03. Frustrated Spin Architecture: From Macroscopically Degenerate Artificial Spin ice to Artificial Spin Glasses. (Invited) A. Farhan¹** *1. Department of Applied Physics, Aalto University, Espoo, Finland*

10:48

- S6-04. Spontaneous Superdomain Wall Fluctuations in a 2D Square Artificial Spin Ice. (Invited) S. Roy¹, X. Chen^{1,2}, B. Farmer², J.S. Woods², S. Dhuey³, W. Hu⁴, C. Mazzoli⁴, S. Wilkins⁴, R.V. Chopdekar¹, A. Scholl¹, I.K. Robinson⁵, L.E. DeLong² and J.T. Hastings⁶** *1. Advanced Light Source, E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 2. Dept. of Physics, University of Kentucky, Lexington, KY, United States; 3. Molecular Foundry, E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 4. NSLSII, Brookhaven National Laboratory, Upton, NY, United States; 5. Condensed Matter Physics, Brookhaven National Laboratory, Upton, NY, United States; 6. Dept. Of Electrical and Computer Engg., University of Kentucky, Lexington, KY, United States*

11:24

- S6-05. Plasmon-Assisted Opto-Thermal Excitation of Nanomagnetic Arrays. (Invited) P. Vavassori^{1,2}, N. Leo¹, M. Menniti¹, M. Pancaldi³, P. Gypens⁴ and J. Leliaert⁴** *1. Nanomagnetism, CIC nanoGUNE, San Sebastian, Spain; 2. Ikerbasque, Bilbao, Spain; 3. Department of Physics, Stockholm University, Stockholm, Sweden; 4. Department of Solid State Sciences, Gent University, Gent, Belgium*

Session M1

ANTIFERROMAGNETIC SPINTRONICS III

Libor Smejkal, Chair

Johannes Gutenberg University of Mainz, Mainz, Germany

- M1-01. Large Spin-Orbit Torque Efficiency and Magnetic Symmetry Effect in the Antiferromagnet IrMn. (Invited)**
J. Zhou¹, X. Shu¹ and J. Chen¹ *1. Materials Science and Engineering, National University of Singapore, Singapore, Singapore*
- M1-02. Concurrent Magneto-Optical Imaging and Magneto-Transport Readout of Electrical Switching of Insulating Antiferromagnetic Thin Films.** F. Schreiber^{1*}, L. Baldrati¹, C. Schmitt¹, R. Ramos², E. Saitoh^{2,3}, R. Lebrun^{1,4} and M. Klau^{1,5} *1. Johannes Gutenberg Universität Mainz, Mainz, Germany; 2. Tohoku Daigaku, Sendai, Japan; 3. Tokyo Daigaku, Bunkyo-ku, Japan; 4. Unite Mixte de Physique CNRS/Thales, Palaiseau, France; 5. Johannes Gutenberg University Mainz Graduate School of Excellence Materials Science in Mainz, Mainz, Germany*
- M1-03. Nonlinear Optical Imaging of Current Induced Spin Switching in Antiferromagnetic Nickel Oxide/Platinum Devices.** J. Lee¹, Y. Tang², A. Mei³, D.G. Schlom³, D. Ralph² and F. Rana¹ *1. Electrical and Computer Engineering, Cornell University, Ithaca, NY, United States; 2. Physics, Cornell University, Ithaca, NY, United States; 3. Material Science and Engineering, Cornell University, Ithaca, NY, United States*
- M1-04. Atomistic Spin Dynamics Simulations of Iridium Manganese Alloys.** S. Jenkins¹, R. Chantrell¹ and R.F. Evans¹ *1. Department of Physics, University of York, York, United Kingdom*
- M1-05. Optical Imaging of Antiferromagnetic Domains and Dynamics Switching in CoO Film by Magneto-Optical Birefringence Effect.** J. Xu¹, X. Zhang², J. Xia², C. Zhou¹, D. Shi¹, G. Chen³, Y. Zhou² and Y. Wu¹ *1. Department of Physics and State Key Laboratory of Surface Physics, Fudan University, Shanghai, China; 2. School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen, China; 3. Department of Physics, University of California Davis, Davis, CA, United States*
- M1-06. Inertial Domain Wall Motion Driven by Staggered Spin-Orbit Fields in Layered Antiferromagnets.**
R. Rama-Eiroa^{1,2}, P. Roy³, J.M. González², K.Y. Guslienko^{4,2}, J. Wunderlich⁵ and R.M. Otxoa^{3,1} *1. Donostia International Physics Center, San Sebastian, Spain; 2. Materials Physics Department, Universidad del Pais Vasco - Campus Gipuzkoa, San Sebastián, Spain; 3. Hitachi Cambridge Laboratory, Cambridge, United Kingdom; 4. Ikerbasque, Bilbao, Spain; 5. Universitat Regensburg Fakultät für Physik, Regensburg, Germany*

* - Best student presentation award finalist

- M1-07. Spin-Orbit Torques in Mn₂Au/HM Bilayers.** *W. Fang*¹ and *K. Belashchenko*¹ *1. Physics, University of Nebraska-Lincoln, Lincoln, NE, United States*
- M1-08. Micromagnetic Modeling of Antiferromagnets. (Invited)** *G. Finocchio*¹, *L. Sánchez-Tejerina*¹, *R. Tomasello*², *V. Puliafito*¹, *A. Giordano*¹, *F. Garesci*¹ and *M. Carpentieri*³ *1. Università degli Studi di Messina, Messina, Italy; 2. Institute of Applied and Computational Mathematics, FORTH, Heraklion, Greece; 3. Politecnico di Bari, Bari, Italy*
- M1-09. Spin Flop and Crystalline Anisotropic Magnetoresistance in CuMnAs.** *M. Wang*¹, *C. Andrews*¹, *S. Reimers*^{1,2}, *O.J. Amin*¹, *P. Wadley*¹, *R.P. Champion*¹, *S.F. Poole*¹, *J. Felton*¹, *K.W. Edmonds*¹, *B.L. Gallagher*¹, *A.W. Rushforth*¹, *O. Makarovskiy*¹, *K. Gas*³, *M. Sawicki*³, *D. Kriegner*⁴, *J. Zubáč*^{4,5}, *K. Olejník*⁴, *V. Novák*⁴, *T. Jungwirth*⁴, *M. Shahrokhvand*⁶, *U. Zeitler*⁶, *S.S. Dhesi*² and *F. Maccherozzi*² *1. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; 2. Diamond Light Source Ltd, Didcot, United Kingdom; 3. Institute of Physics, Polish Academy of Sciences, Warsaw, Poland; 4. Institute of Physics, Czech Academy of Science, Prague, Czechia; 5. Faculty of Mathematics and Physics, Univerzita Karlova Matematicko-fyzikalni fakulta, Praha, Czechia; 6. High Field Magnet Laboratory (HFML-EMFL), Radboud Universiteit, Nijmegen, Netherlands*
- M1-10. Withdrawn**
- M1-11. Absence of Evidence of Electrical Switching of the Antiferromagnetic Néel Vector.** *C. Chiang*¹, *S. Huang*¹, *D. Qu*², *P. Wu*¹ and *C. Chien*^{1,3} *1. Department of Physics, National Taiwan University, Taipei, Taiwan; 2. Institute of Physics, Academia Sinica, Taipei, Taiwan; 3. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD, United States*
- M1-12. Zero Field Optic Mode Beyond 20 GHz in a Synthetic Antiferromagnet.** *H.J. Waring*^{1*}, *N. Johansson*¹, *I.J. Vera-Marun*² and *T. Thomson*¹ *1. Computer Science, The University of Manchester, Manchester, United Kingdom; 2. Physics and Astronomy, The University of Manchester, Manchester, United Kingdom*

* - Best student presentation award finalist

Session M2

COMPLEX OXIDES I

Cynthia Piamonteze, Co-Chair

Paul Scherrer Institut, Villigen, Switzerland

Peter Fischer, Co-Chair

Lawrence Berkeley National Laboratory, Berkeley, CA, United States

- M2-01. Interfacial Ferromagnetism and Structural Distortion in Ultrathin (111)-Oriented LaNiO₃.** *M. Kane*^{1,2}, A. Vailionis², L.J. Riddiford^{3,2}, A. Mehta⁴, A.T. N'Diaye⁵, E. Arenholz⁶ and Y. Suzuki^{3,2} *1. Materials Science and Engineering, Stanford University, Stanford, CA, United States; 2. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA, United States; 3. Applied Physics, Stanford University, Stanford, CA, United States; 4. Stanford Synchrotron Radiation Lightsources, Menlo Park, CA, United States; 5. E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 6. Cornell High Energy Synchrotron Source, Ithaca, NY, United States*
- M2-02. Ferroelastic Nature and Ferromagnetism in Epitaxial LaCoO₃.** *S. Yoon*¹, X. Gao¹, J. Ok¹, Z. Liao¹, M. Han², Y. Zhu², P. Ganesh¹, M. Chisholm¹, W. Choi³ and H. Lee¹ *1. Oak Ridge National Laboratory, Oak Ridge, TN, United States; 2. Brookhaven National Laboratory, Upton, NY, United States; 3. Sungkyunkwan University, Suwon, The Republic of Korea*
- M2-03. Doping- and Strain-Dependent Electrochemical Control of Magnetism in Ion-Gel-Gated La_{1-x}Sr_xCoO_{3-δ} Films.** *V. Chaturvedi*¹, W. Postiglione¹, B. Yu², W. Tabis^{2,3}, S. Hameed², N. Biniskos², H. Zhou⁴, Z. Zhang⁴, M. Greven² and C. Leighton¹ *1. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, United States; 2. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN, United States; 3. Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Krakow, Poland; 4. Advanced Photon Source, Argonne National Laboratory, Lemont, IL, United States*
- M2-04. Strain and Thickness Dependent Magnetic Properties of Epitaxial La_{0.7}Sr_{0.3}CoO₃/La_{0.7}Sr_{0.3}MnO₃ Heterostructures.** *M. Feng*¹, N. Ahlm¹, A.M. Kane¹, I. Chiu², D.Y. Sasaki¹, P. Shafer³, A.T. N'Diaye³, A. Mehta⁴ and Y. Takamura¹ *1. Materials Science and Engineering, University of California, Davis, Davis, CA, United States; 2. Chemical Engineering, University of California, Davis, Davis, CA, United States; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 4. SLAC National Accelerator Laboratory, Menlo Park, CA, United States*
- M2-05. Study of Canonical Spin Glass Behavior in Co Doped LaMnO₃.** *F.H. Bhat*^{1,5}, G.A. Khan², G. Kataria³, R. Kumar⁴, D. Sahdev³ and M.A. Malik⁵ *1. Physics, Islamic University of Science and Technology, Awantipora, India; 2. Physics, SP College, Cluster University Srinagar, Srinagar, India; 3. Quazartech, New Delhi, India; 4. Materials Science and Engineering, NIT, Hamirpur, Hamirpur, India; 5. Physics, University of Kashmir, Srinagar, India*

- M2-06. Versatile Magnetic Ordered Phases in SrMnO₃ Films and its co- Dependence on Structural Properties.** *J.J. van Rijn*¹, A. Das¹, E. Vallabhaneni¹ and T. Banerjee¹ *1. Zernike Institute of Advanced Materials, University of Groningen, Groningen, Netherlands*
- M2-07. Microstructure Analysis of Electrospun La_{0.8}Sr_{0.2}MnO₃ Nanowires Using Electron Microscopy and Electron Backscatter Diffraction (EBSD).** *A. Koblishka-Veneva*^{1,2}, M.R. Koblishka^{1,2}, X. Zeng² and J. Schmauch² *1. Material Science, Shibaura Kogyo Daigaku, Koto-ku, Japan; 2. Experimental Physics, Universitat des Saarlandes Naturwissenschaftlich-Technische Fakultät, Saarbrücken, Germany*
- M2-08. Surface Ferromagnetism in Pr_{0.5}Ca_{0.5}MnO₃ Nanoparticles as a Consequence of Local Imbalance Mn³⁺:Mn⁴⁺ Ratio.** D. Alshalawi¹, J. Alonso^{1,2}, *P. de la Presa*¹ and A. Hernando¹ *1. Instituto de Magnetismo Aplicado, Universidad Complutense de Madrid, Madrid, Spain; 2. Insitut of Materials Science of Madrid, Consejo Superior de Investigaciones Cientificas, Madrid, Spain*
- M2-09. Size Dependence of Charge Order and Magnetism in Sm_{0.35}Ca_{0.65}MnO₃ – Magnetization and Electron Paramagnetic Resonance Studies.** *L.R. Goveas*¹, B. K.S.², A. K.N.³ and S. Bhat² *1. Physics, St. Joseph's College (Autonomous), Bangalore, India; 2. Physics, Indian Institute of Science, Bangalore, India; 3. Physics, Dr. Ambedkar Institute of Technology, Bangalore, India*
- M2-10. Unusual Dynamical Properties of Oxide-Magnetic Heterostructures. (Invited)** *J. Ramirez*¹ *1. Department of Physics, Universidad de los Andes, Bogota, Colombia*
- M2-11. Withdrawn**
- M2-12. Magnetic-Domain-Wall-Induced Electrical Polarization in Rare-Earth Iron Garnet Systems: a First-Principle Study.** *T. Bayaraa*¹, C. Xu¹, Y. Yang², H. Xiang² and L. Bellaiche¹ *1. Physics, University of Arkansas Fayetteville, Fayetteville, AR, United States; 2. State Key Laboratory of Surface Physics and Department of Physics, Fudan University, Shanghai, China*
- M2-13. Hidden Magnetoelectric Multipoles, and Anti-Magnetoelectric Effect in Fe₂O₃.** *X.H. Verbeek*¹ and N.A. Spaldin¹ *1. Materials department, ETH Zurich, Zürich, Switzerland*

M2-14. Influence of the Oxide Termination and Polarization on the Interfacial Dzyaloshinskii-Moriya Interaction and the Perpendicular Magnetic Anisotropy in BTO/CoFeB/Pt System. *S. Tacchi*¹, *W. Lin*², *B. Yang*^{3,4}, *A.P. Chen*⁵, *X. Wu*², *R. Guo*², *S. Chen*², *Q. Xie*², *X. Shu*², *L. Liu*², *Y. Hui*², *G. Chow*², *Y.P. Feng*^{6,5}, *G. Carlotti*⁷, *H. Yang*^{3,4} and *J. Chen*² *1. Istituto Officina dei Materiali, Sede Secondaria di Perugia, CNR, Consiglio Nazionale delle Ricerche, Perugia, Italy;* *2. Department of materials science and engineering, National University of Singapore, Singapore, Singapore;* *3. Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China;* *4. Center of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences, Beijing, China;* *5. NUS Graduate School of Integrative Sciences and Engineering, National University of Singapore, Singapore, Singapore;* *6. Department of Physics, National University of Singapore, Singapore, Singapore;* *7. Department of Physics and Geology, Università degli Studi di Perugia, Perugia, Italy*

M2-15. Tuning the Magnetic Anisotropy and Phase Transition in Superparamagnetic Cobalt Oxide Nanostructures Synthesized Through Novel Solution-Growth Technique. *N.N. Joshi*^{1,2}, *V. Kochat*¹ and *S. S. A.*² *1. Materials Science Centre, Indian Institute of Technology Kharagpur, Kharagpur, India;* *2. Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore, India*

M2-16. Withdrawn

THURSDAY
MORNING
12:00

LIVE Q&A 13

Session M3

MAGNETIZATION DYNAMICS AND DAMPING IV: SPIN CURRENT, SPIN-TORQUE, SPIN TRANSPORT, VORTICES, SKYRMIONS AND DOMAIN WALLS

Igor Barsukov, Chair

University of California, Riverside, Riverside, CA, United States

M3-01. Detection of in-Plane Magnetization Switching of Ni₈₀Fe₂₀ Layer by Spin Rectification Effect. *M. Aoki*¹, *Y. Ando*¹, *R. Ohshima*¹, *E. Shigematsu*¹, *T. Shinjo*¹ and *M. Shiraishi*¹ *1. Electronic Science and Engineering, Kyoto university, Nishikyo-ku, Kyoto, Japan*

M3-02. Role of Crystalline and Damping Anisotropy to the Angular Dependences of Spin Rectification Effect in Single Crystal CoFe Film. *F. Zeng*¹, *X. Shen*¹, *Y. Li*², *Z. Yuan*³, *W. Zhang*² and *Y. Wu*¹ *1. Fudan University, Shanghai, China;* *2. Oakland University, Rochester, MI, United States;* *3. Beijing Normal University, Beijing, China*

- M3-03. Phase-Resolved Electrical Detection of Strongly Coupled Magnon-Magnon Hybrid Device.** *Y. Li¹, C. Zhao¹, Z. Zhang¹, M. Vogel¹, Y. Xiong², J. Sklenar³, R. Divan⁴, J. Pearson¹, W. Zhang², A. Hoffmann⁵ and V. Novosad¹* *1. Argonne National Laboratory Materials Science Division, Lemont, IL, United States; 2. Physics, Oakland University, Rochester, MI, United States; 3. Physics, Wayne State University, Detroit, MI, United States; 4. Center for Nanoscale Materials, Argonne National Laboratory, Lemont, IL, United States; 5. Materials Science Division, University of Illinois at Urbana-Champaign, Urbana, IL, United States*
- M3-04. Picosecond Spin Orbit Torque Switching.** *K. Jhuria¹, J. Hohlfeld¹, A. Pattabi², E. Martin¹, A. Ygnacio Arriola Córdova^{1,3}, X. Shi⁴, R. Lo Conte², S. Petit-Watelot¹, J. Rojas-Sanchez¹, G. Malinowski¹, S. Mangin¹, A. Lemaître⁵, M. Hehn¹, J. Bokor^{2,6}, R. B. Wilson⁴ and J. Gorchon¹* *1. Université de Lorraine, CNRS, IJL, Nancy, France; 2. Department of Electrical Engineering and Computer Sciences, University of California Berkeley, Berkeley, CA, United States; 3. Universidad Nacional de Ingeniería, Lima, Peru; 4. Department of Mechanical Engineering and Materials Science and Engineering Program, University of California Riverside, Riverside, CA, United States; 5. Centre de Nanoscience et de Nanotechnologies, Université Paris-Saclay, Palaiseau, France; 6. Lawrence Berkeley National Laboratory, Berkeley, CA, United States*
- M3-05. Direct Imaging of the ac Component of Spin Pumping From Permalloy Into Uncompensated Antiferromagnetic Co Doped ZnO.** *S. Pile¹, M. Buchner¹, V. Ney¹, T. Schaffers¹, K. Lenz², R. Narkowicz², J. Lindner², H. Ohldag^{3,4} and A. Ney¹* *1. Johannes Kepler Univ., Linz, Austria; 2. Helmholtz Center Dresden Rossendorf, Dresden Rossendorf, Germany; 3. Stanford Synchrotron Radiation Lightsource, Menlo Park, CA, United States; 4. University of California, Santa Cruz, Santa Cruz, CA, United States*
- M3-06. Spin Pumping From Ni₈₀Fe₂₀ Into Monolayer Transition Metal Dichalcogenides.** *H. Bangar¹, R. Mudgal¹, A. Kumar¹, N. Chowdhury¹, S. Das² and P.K. Muduli¹* *1. Physics, Indian Institute of Technology Delhi, New Delhi, India; 2. Center for Applied Research in Electronics, Indian Institute of Technology Delhi, New Delhi, India*
- M3-07. Inversion of the Spin-Torque Effect via Resonant Magnon Scattering in Nanomagnets.** *I. Barsukov¹, H. Lee², A. Jara², Y. Chen², A. Gonçalves², C. Sha², J. Katine³, R. Arias⁴, B. Ivanov⁵ and I. Krivorotov²* *1. UC Riverside, Riverside, CA, United States; 2. UC Irvine, Irvine, CA, United States; 3. Western Digital, San Jose, CA, United States; 4. Universidad de Chile, Santiago, Chile; 5. National Academy of Sciences, Kyiv, Ukraine*
- M3-08. Controlling the Gyrotropic Critical Current by Resonant Excitation of the Higher Order Spin Wave Modes in Vortex-Based Magnetic Tunnel Junctions.** *A. Jenkins¹, L. San Emeterio Alvarez¹, S. Memshawy², B. Paolo², V. Cros², P. Freitas¹ and R. Ferreira¹* *1. Spintronics, International Iberian Nanotechnology Laboratory, Braga, Portugal; 2. Unite Mixte de Physique CNRS/Thales, Palaiseau, France*

- M3-09. Magnetization Dynamics of Helical and Skyrmion Phases in Bulk $\text{Co}_8\text{Zn}_8\text{Mn}_4$ at Room Temperature.** *J. Soh*¹, *D. Prabhakaran*², *A. Boothroyd*² and *D. Grundler*^{1,3} *1. Institute of Materials, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland; 2. Department of Physics, University of Oxford, Oxford, United Kingdom; 3. Institute of Microengineering, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland*
- M3-10. Deterministic Approach to Skyrmionic Dynamics at Nonzero Temperatures: Pinning Sites and Racetracks.** *J. Castell-Queralt*¹, *L. González-Gómez*¹, *N. del-Valle*¹ and *C. Navau*¹ *1. Physics, Universitat Autònoma de Barcelona Facultat de Ciències, Barcelona, Spain*
- M3-11. Traveling Skyrmions in Chiral Antiferromagnets.** *S. Komineas*^{1,3} and *N. Papanicolaou*² *1. Department of Mathematics and Applied Mathematics, University of Crete, Heraklion, Greece; 2. Department of Physics, University of Crete, Heraklion, Greece; 3. Institute of Applied and Computational Mathematics, Idryma Technologias kai Ereunas, Heraklion, Greece*
- M3-12. Inertial Dynamics of Magnetic Vortices.** *M. Yoo*^{1,2}, *F. Mineo*^{3,4} and *J. Kim*¹ *1. Centre de Nanosciences et de Nanotechnologies, Université Paris-Saclay, Palaiseau, France; 2. Laboratoire Matériaux Optiques, Photonique et Systèmes, CentraleSupélec, Université de Lorraine, Metz, France; 3. Max Planck Institute for the Science of Light, Erlangen, Germany; 4. Department of Physics, Friedrich-Alexander University of Erlangen-Nuremberg, Erlangen, Germany*
- M3-13. Critical Depinning Dynamics of Domain Walls With Internal Degrees of Freedom.** *A. Skaugen*^{1,2} and *L. Laurson*^{1,2} *1. Computational Physics Laboratory, Tampereen yliopisto, Tampere, Finland; 2. Helsinki Institute of Physics, Helsinki, Finland*

THURSDAY
MORNING
12:00

LIVE Q&A 13

Session M4 SPIN CURRENTS II

Peng Li, Chair
Auburn University, Auburn, AL, United States

- M4-01. Giant Anomalous Nernst Effect in Topological Magnets. (Invited)** *A. Sakai*^{1,2}, *S. Minami*^{1,3}, *T. Koretsune*⁴, *T. Chen*², *T. Higo*², *Y. Wang*², *T. Nomoto*⁵, *M. Hirayama*⁶, *S. Miwa*^{2,7}, *D. Nishio-Hamane*², *F. Ishii*^{3,6}, *R. Arita*^{5,6} and *S. Nakatsuji*^{1,2} *1. Department of Physics, University of Tokyo, Tokyo, Japan; 2. Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan; 3. Nanomaterials Research Institute, Kanazawa University, Kanazawa, Japan; 4. Department of Physics, Tohoku University, Sendai, Japan; 5. Department of Applied Physics, University of Tokyo, Tokyo, Japan; 6. Center for Emergent Matter Science (CEMS), RIKEN, Wako, Japan; 7. Trans-scale Quantum Science Institute, University of Tokyo, Tokyo, Japan*

- M4-02. Anomalous Nernst Effect in Iron- Based Sintered Alloys.** *Y. Omori*¹, *Y. Iwasaki*¹, *R. Sawada*¹, *S. Kuroshima*¹, *M. Ishida*¹ and *A. Kirihara*¹ *1. Nihon Denki Kabushiki Kaisha, Minato-ku, Japan*
- M4-03. Interfacial Modulation of the Spin Pumping in YIG/Pt.** *L. Liu*¹, *Y. Li*¹, *T. Feng*², *X. Wang*³, *D. Wu*², *P. Gao*¹ and *J. Li*¹ *1. Peking University, Beijing, China; 2. Nanjing University, Nanjing, China; 3. Hong Kong University of Science and Technology, Kowloon, Hong Kong*
- M4-04. Theoretical Study on Anomalous Spin-Hall and Magnetic Spin-Hall Effect Induced by Anisotropic Spin-Flip Scattering on Ferromagnets.** *Y. Yahagi*¹, *J. Zelezny*², *D. Miura*¹ and *A. Sakuma*¹ *1. Applied Physics, Tohoku Daigaku, Sendai, Japan; 2. Spintronics and Nanoelectronics, Fyzikalni ustav Akademie ved Ceske republiky, Praha, Czechia*
- M4-05. Hidden (Staggered) Spin Hall Conductivity.** *F. Xue*^{1,2} and *P.M. Haney*¹ *1. Physical Measurement Lab, National Institute of Standards and Technology, Gaithersburg, MD, United States; 2. University of Maryland at College Park Institute for Research in Electronics and Applied Physics, College Park, MD, United States*
- M4-06. Enhanced Anomalous Nernst Effect in Ni / Pt Superlattice.** *T. Seki*^{1,2}, *Y. Sakuraba*^{3,4}, *A. Miura*³, *K. Masuda*³, *M. Tsujikawa*^{5,2}, *K. Uchida*^{3,1}, *T. Kubota*^{1,2}, *Y. Miura*³, *M. Shirai*^{5,2} and *K. Takanashi*^{1,2} *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Center for Spintronics Research Network, Tohoku University, Sendai, Japan; 3. National Institute for Materials Science, Tsukuba, Japan; 4. PRESTO, Japan Science and Technology Agency, Saitama, Japan; 5. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*
- M4-07. High-Quality Single Crystalline Europium Iron Garnet Films With Perpendicular Magnetic Anisotropy by Sputtering.** *M. Guo*¹, *Y. Liu*¹, *C. Cheng*², *C. Wu*³, *W. Chen*¹, *T. Chen*², *S. Zhou*⁴, *C. Pai*², *S. Lee*⁵, *M. Hong*² and *J. Kwo*¹ *1. National Tsing Hua University, Hsinchu, Taiwan; 2. National Taiwan University, Taipei, Taiwan; 3. Max-Planck-Institut für Chemische Physik fester Stoffe, Dresden, Germany; 4. Institut für Ionenstrahlphysik und Materialforschung, Forschungszentrum Dresden-Rossendorf e.V., Dresden, Germany; 5. Academia Sinica, Taipei, Taiwan*
- M4-08. Thermomagnetic Control of Spintronic THz Emission Enabled by Ferrimagnets.** *M. Fix*¹, *R. Schneider*², *J. Bensmann*², *S. Michaelis de Vasconcellos*², *R. Bratschitsch*² and *M. Albrecht*¹ *1. Institute of Physics, University of Augsburg, Augsburg, Germany; 2. Institute of Physics and Center for Nanotechnology, University of Münster, Münster, Germany*

M4-09. Coherent Long-Range Transfer of Angular Momentum Between Magnon Kittel Modes by Circularly Polarized Phonons. K. An¹, A. Litvinenko¹, R. Kohno¹, v.v. naletov^{2,1}, G. de loubens³, L. Vila¹, j. ben youssef⁷, n. vukadinovic⁴, G. Bauer⁵, V. Tyberkevych⁶, A.N. Slavin⁶ and O. Klein¹
1. SPINtronique et Technologie des Composants, Grenoble, France; 2. Kazanskij federal'nyj universitet, Kazan', Russian Federation; 3. Service de Physique de l'Etat Condense, Gif Sur Yvette, France; 4. Dassault Aviation, Saint-Cloud, France; 5. Tohoku Daigaku, Sendai, Japan; 6. Oakland University, Rochester, MI, United States; 7. Universite de Bretagne Occidentale, Brest, France

M4-10. Modulation of Magnon Spin Transport in a Magnetic Gate Transistor. K. Das¹, F. Feringa¹, M. Middelkamp¹, B. Van Wees¹ and I.J. Vera-Marun²
1. Rijksuniversiteit Groningen Faculty of Science and Engineering, Groningen, Netherlands; 2. The University of Manchester, Manchester, United Kingdom

M4-11. Short-Range Study of Thermal Magnon Transport in Magnetic Garnets. K. An¹, R. Kohno¹, N. Thiery¹, D. Reitz⁴, L. Vila¹, v.v. naletov^{1,5}, N. Beaulieu^{2,3}, j. ben youssef², G. de loubens³, y. Tserkovnyak⁴ and O. Klein¹
1. Université Grenoble Alpes, CEA, CNRS, Grenoble INP, Spintec, Grenoble, France; 2. Laboratoire des Sciences et Techniques de l'Information de la Communication et de la Connaissance, Brest, France; 3. SPEC, CEA-Saclay, CNRS, Université Paris-Saclay, Gif-sur-Yvette, France; 4. University of California Los Angeles, Department of Physics and Astronomy, Los Angeles, CA, United States; 5. Kazan Federal University, Institute of Physics, Kazan, Russian Federation

M4-12. Thermoelectric Effects of Superconductor-Ferromagnetic Hybrids. K. Blagg¹, P. Allen¹, B. Lloyd¹, M.P. Lilly² and M. Singh¹
1. Physics, Colorado School of Mines, Golden, CO, United States; 2. Sandia National Laboratories, Albuquerque, NM, United States

THURSDAY
MORNING
12:00

LIVE Q&A 13

**Session M5
SKYRMIONS I
(Poster Session)**

Nico Kerber, Co-Chair
Johannes Gutenberg University of Mainz, Mainz, Germany
Thomas Moore, Co-Chair
University of Leeds, Leeds, United Kingdom

M5-01. Skyrmion-Skyrmion Interaction in a Magnetic Film.
D. Capic¹, D. Garanin¹ and E. Chudnovsky¹
1. Physics, City University of New York, New York, NY, United States

- M5-02. XMCD-STXM Magnetic Imaging of Skyrmions With in-Situ Hall Transport Measurements in Pt/Co/Ir Multilayer Hall Discs.** *A.J. Huxtable*¹, *S. Finizio*², *K. Zeissler*¹, *E. Darwin*¹, *G. Burnell*¹, *M. Rosamond*¹, *E. Linfield*¹, *J. Raabe*² and *C.H. Marrows*¹ *1. University of Leeds, Leeds, United Kingdom; 2. Paul Scherrer Institut, Villigen, Switzerland*
- M5-03. Withdrawn**
- M5-04. Magnetic Skyrmions and Phase Transitions in a Antiferromagnetic/Ferroelectric Bilayers.** *I. Sharafullin*¹, *A. Yuldasheva*¹ and *H.T. Diep*² *1. Institute of Physics and Technology, Baskirskij Gosudarstvennyj Universitet, Ufa, Russian Federation; 2. Laboratory of Theoretical Physics and Modeling, Cergy Paris University, Paris, France*
- M5-05. Numerical Simulation of Magnetic Skyrmions on Flat Lattices.** *V.Y. Kapitan*^{1,2}, *E. Vasiliev*^{1,2}, *A. Perzhu*^{1,2}, *D. Kapitan*^{1,2}, *A. Rybin*^{1,2}, *A.O. Korol*¹, *K. Soldatov*^{1,2} and *Y. Shevchenko*^{1,2} *1. Computer Systems, Dal'nevostocnyj federal'nyj universitet, Vladivostok, Russian Federation; 2. Institut prikladnoj matematiki DVO RAN, Vladivostok, Russian Federation*
- M5-06. Withdrawn**
- M5-07. Structural and Magnetic Properties of β -Mn Structured Cobalt-Zinc Thin Film Alloys.** *M. Dearg*¹, *A. Caruana*², *C. Kinane*², *G. Burnell*¹, *S. Langridge*² and *C.H. Marrows*¹ *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. ISIS, Rutherford Appleton Laboratory, STFC, Oxon, United Kingdom*
- M5-08. Energetics, Equilibrium Shape, and Vorticity of Skyrmions and Antiskyrmions Stabilized by the Anisotropic Dzyaloshinskii-Moriya Interaction in Thin Films With C_{2v} Symmetry.** *M.D. Kitcher*¹, *M. De Graef*¹ and *V. Sokalski*¹ *1. Materials Science & Engineering, Carnegie Mellon University, Pittsburgh, PA, United States*
- M5-09. Withdrawn**
- M5-10. Spin Transport Using a Magnetic Skyrmion Lattice.** *D.I. King*¹, *J. Tang*¹ and *J. Ackerman*² *1. Physics and Astronomy, University of Wyoming, Laramie, WY, United States; 2. Chemical and Petroleum Engineering, University of Wyoming, Laramie, WY, United States*
- M5-11. Skyrmions and Antiskyrmions From Current-Induced Boundary Instabilities.** *S. Sandhoefner*¹, *A.S. Raeliarijaona*¹, *R. Nepal*¹, *D. Snyder-Tinoco*² and *A.A. Kovalev*¹ *1. Physics, University of Nebraska-Lincoln, Lincoln, NE, United States; 2. California State University San Bernardino, San Bernardino, CA, United States*

- M5-12. Field and Temperature Dependence of the Skyrmion Lattice Phase and the Appearance of a Second Helical Phase in FeGe.** *D. Burn*¹, *S. Zhang*^{2,3}, *G. van der Laan*¹ and *T. Hesjedal*³
1. Magnetic Spectroscopy Group, Diamond Light Source Ltd, Didcot, United Kingdom; 2. ShanghaiTech University School of Physical Science and Technology, Shanghai, China;
3. Department of Physics, University of Oxford, Oxford, United Kingdom
- M5-13. Stabilizing Skyrmions on Pt/Co/Ta Multilayers and Ordered Arrays of Nanodomains by FORC Hall Analysis.** *J. Denardin*¹, *D. Toneto*³, *J.L. Palma*², *S. Oyarzun*¹ and *L. Dorneles*³
1. Physics, Universidad de Santiago de Chile, Santiago de Chile, Chile; 2. Universidad Central de Chile, Santiago, Chile;
3. Physics, Universidade Federal de Santa Maria, Santa Maria, Brazil
- M5-14. Magnetic Phase Diagram of Co Doped Cu₂OSeO₃: an AC Susceptibility Study.** *U. Erugu*¹, *D.I. King*¹ and *J. Tang*¹
1. Physics & Astronomy, University of Wyoming, Laramie, WY, United States

THURSDAY
 MORNING
 12:00

LIVE Q&A 13

Session M6
STRUCTURED MATERIALS
(Poster Session)

Purnima Balakrishnan, Chair
 National Institute of Standards and Technology, Menlo Park, CA,
 United States

- M6-01. Thermal Hysteresis of Thin Terbium (Tb) Films.** *F.H. Sales*¹, *J.J. Melo*¹, *A.L. Dantas*², *L.L. Oliveira*² and *A.S. Carriço*³
1. Department of Physics, Federal Institute of Education, Science and Technology of Maranhão (IFMA), São Luís, Brazil;
2. Department of Physics, University of State of Rio Grande do Norte (UERN), Natal, Brazil; 3. Department of Physics, Federal University of Rio Grande do Norte (UFRN), Natal, Brazil
- M6-02. Kerr Microscopy Real-Time Imaging of the Magnetization Reversal Process in Kagome Artificial Spin ice.** *D. Shi*¹
1. physics department, Fudan University, Shanghai, China
- M6-03. Features of Magnetization Reversal of Fe₁₀Ni₉₀/Ti/(R-Co) (R = Gd, Dy) Films.** *O.A. Adanakova*¹, *E. Kudyukov*¹, *K. Balymov*¹, *A. Rusalina*¹ and *V. Vas'kovskiy*^{1,2}
1. Ural Federal University named after the first President of Russia B.N. Yeltsin, Ekaterinburg, Russian Federation; 2. M.N. Mikheev Institute of Metal Physics UB RAS, Ekaterinburg, Russian Federation
- M6-04. The Structural, Magnetic, and Electrical Properties of Cubic Mn₃Ga.** *H. Bang*¹ and *M. Jung*¹
1. Sogang University, Mapo-gu, The Republic of Korea

- M6-05. Fine-Tuned Perpendicular Magnetic Anisotropy of Co-Doped Mn₃Ga Thin Films.** *W. Yoo*¹ and *M. Jung*¹
1. Sogang University, Mapo-gu, The Republic of Korea
- M6-06. Correlation of Strains and Interfacial DMI in Symmetric Epitaxial Pd/Co/Pd(111) Thin Films.** *A.G. Kozlov*¹,
*N. Sarnavskii*¹ and *A. Davydenko*¹ *1. School of natural sciences, Dal'nevostocnyj federal'nyj universitet, Vladivostok, Russian Federation*
- M6-07. Above Room-Temperature Ferromagnetism in Wafer-Scale two-Dimensional van der Waals Fe₃GeTe₂ Tailored by Topological Insulator.** *T. Nie*¹, *H. Wang*¹, *Y. Liu*¹, *P. Wu*¹ and *W. Hou*¹ *1. School of Microelectronics, Beihang University, Beijing, China*
- M6-08. Growth-Field-Induced Magnetic Anisotropy in Sputtered Amorphous CoAlZr-SmCoTi Artificially Layered Structures.** *P. Rani*¹, *P.E. Jönsson*¹ and *G. Andersson*¹
1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden
- M6-09. Investigation of Magnetic Anisotropy of Ultrathin Co Films Growth on Au(788) Vicinal Surface.** *R.J. Rosa*¹, *G. Gomes*²,
*R. Souza*¹ and *M. Martins*¹ *1. Centro de Desenvolvimento da Tecnologia Nuclear, Belo Horizonte, Brazil; 2. Universidade Estadual de Montes Claros, Montes Claros, Brazil*
- M6-10. NiCo₂O₄ Thin Films Prepared by Reactive Molecular Beam Epitaxy and Annealing Under High-Pressure Oxygen Atmosphere.** *A. Tsujie*¹, *Y. Hara*¹, *T. Yanase*², *T. Shimada*² and *T. Nagahama*² *1. CSE, Hokkaido University, Sapporo, Japan; 2. Graduate School of Engineering, Hokkaido University, Sapporo, Japan*
- M6-11. Tuning of Perpendicular Magnetic Anisotropy in Ta/Co_xFe_{80-x}B₂₀/MgO With Varying Fe Content.** *R.S. Yadav*¹,
*A. Kumar*¹, *K. Khan*¹ and *P.K. Muduli*¹ *1. Department of Physics, Indian Institute of Technology Delhi, New Delhi, India*
- M6-12. From Bulk Frustrated Magnetism to Magnetic Long-Range Order in Thin Films of Double Perovskite Compound BaTi_{1/2}Mn_{1/2}O₃.** *R.P. Amaral*¹, *R.L. Serrano*¹ and *P. Schio*²
1. Federal University of Uberlândia, Uberlândia, Brazil; 2. Laboratorio Nacional de Luz Sincrotron, Campinas, Brazil

Session N1
SKYRMIONS II

Mathias Klaui, Co-Chair
Universität Mainz, Mainz, Germany

Guoqiang Yu, Co-Chair
Institute of Physics, Los Angeles, CA, United States

- N1-01. Chiral and Achiral Magnetic Spin Textures in Fe/Gd Multilayers. (Invited)** *S. Montoya*¹ *1. Naval Information Warfare Center Pacific, San Diego, CA, United States*
- N1-02. Skyrmion Breathing Modes in Synthetic Ferri- and Antiferromagnets.** *M. Lonsky*¹ and *A. Hoffmann*¹ *1. Materials Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, United States*
- N1-03. Ferromagnetic Resonance of Skyrmions in Thin Film Multilayers.** *T. Srivastava*^{1,2}, *I. Ngouagnia*², *Y. Sassi*¹, *F. Ajejas*¹, *A. Vecchiola*¹, *K. Bouzehouane*¹, *N. Reyren*¹, *V. Cros*¹, *H. Hurdequint*², *J. Kim*³, *T. Devolder*³ and *G. de Loubens*² *1. Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, 91767 Palaiseau, France; 2. SPEC, CEA-Saclay, CNRS, Université Paris-Saclay, 91191 Gif-sur-Yvette, France; 3. Centre for Nanoscience and Nanotechnology, CNRS, Université Paris-Saclay, 91120 Palaiseau, France*
- N1-04. Skyrmion Generation by Ionic Liquid Gating in Ultra-Thin Films.** *Y. Zhang*^{1,2}, *G. Dubuis*^{1,2} and *S. Granville*^{1,2} *1. Robinson Research Institute, Victoria University of Wellington, Wellington, New Zealand; 2. MacDiarmid Institute for Advanced Materials and Nanotechnology, Wellington, New Zealand*
- N1-05. Anisotropic Skyrmion Diffusion Controlled by Field-Induced Symmetry Breaking.** *N. Kerber*^{1,2}, *M. Weissenhofer*³, *K. Raab*¹, *K. Litzius*^{1,4}, *J. Zázvorka*^{1,5}, *U. Nowak*³ and *M. Klaui*^{1,2} *1. Institut für Physik, Johannes Gutenberg Universität Mainz, Mainz, Germany; 2. Graduate School of Excellence Materials Science in Mainz, Mainz, Germany; 3. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 4. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States; 5. Institute of Physics, Charles University, Prague, Czechia*
- N1-06. Skyrmion Dynamics in Tracks Patterned With Magnetic Anisotropy: Theory and Simulations.** *S. Miki*^{1,2}, *C. LIU*^{2,3}, *E. TAMURA*^{1,2}, *J. Cho*⁴, *M. Goto*^{1,2}, *H. Nomura*^{1,2}, *R. NAKATANI*³ and *Y. Suzuki*^{1,2} *1. Engineering and Science, Osaka Daigaku, Toyonaka, Japan; 2. The Center for Spintronics Research Network, Toyonaka, Japan; 3. Engineering, Osaka Daigaku, Suita, Japan; 4. Nanotechnology, Daegu Gyeongbuk Institute of Science and Technology, Daegu, The Republic of Korea*

- N1-07. Spin Dynamics of Skyrmion and Chiral Soliton Lattices in Cu_2OSeO_3 Locally Resolved by Scanning Brillouin Light Scattering.** P. Che¹, T. Schönenberger², A. Kúkol'ová^{1,3}, A. Magrez⁴, H. Berger⁴, H.M. Rønnow² and D. Grundler^{1,5}
1. Laboratory of Nanoscale Magnetic Materials and Magnonics, Institute of Materials (IMX), École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; 2. Laboratory for Quantum Magnetism, Institute of Physics, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; 3. Laboratory of Semiconductor Materials, Institute of Materials (IMX), École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; 4. Crystal Growth Facility, Institut de Physique, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; 5. Institute of Microengineering (IMT), École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
- N1-08. Skyrmion Lattice Phases in Thin Film Multilayers.** J. Zázvorka^{1,2}, F. Dittrich¹, Y. Ge¹, N. Kerber^{1,3}, K. Raab¹, T. Winkler¹, K. Litzius^{1,3}, M. Veis², P. Virnau^{1,3} and M. Klau^{1,3}
1. Institute of Physics, Johannes Gutenberg Universität Mainz, Mainz, Germany; 2. Faculty of Mathematics and Physics, Univerzita Karlova, Praha, Czechia; 3. Johannes Gutenberg University Mainz Graduate School of Excellence Materials Science in Mainz, Mainz, Germany
- N1-09. Ultrafast Light-Induced Nucleation of Skyrmion Lattices.** P. Olleros-Rodríguez¹, M.S. Strungaru², S. Ruta², P.I. Gavriloaea², P. Perna¹, R. Chantrell² and O. Chubykalo-Fesenko³
1. IMDEA Nanoscience Institute, Madrid, Spain; 2. Physics, University of York, York, United Kingdom; 3. Materials Science Institute of Madrid (ICMM-CSIC), Madrid, Spain
- N1-10. Skyrmion Racetracks Defined by Light-ion Irradiation and Current Induced Skyrmion Guiding at Room Temperature.** R. Juge¹, K. Bairagi¹, K. Rana¹, M. Sall², D. Maily³, D. Ravelosona², M. Belmeguenai⁴, Y. Roussigné⁴, S. Auffret¹, L. Buda-Prejbeanu¹, G. Gaudin¹ and O. Boulle¹
1. CEA, CNRS, Grenoble INP, IRIG-SPINTEC, Université Grenoble Alpes, Saint-Martin-d'Herès, France; 2. Spin-Ion Technologies, 10 Boulevard Thomas Gobert, 91120 Palaiseau, France; 3. CNRS, Université Paris-Sud, Université Paris-Saclay, 10 boulevard Thomas Gobert, Centre de Nanosciences et de Nanotechnologies, 91120 Palaiseau, France; 4. CNRS, Université Paris 13, Laboratoire des Sciences des Procédés et des Matériaux, 93430 Villetaneuse, France
- N1-11. Topology-Dependent Brownian Gyromotion of a Single Skyrmion.** L. Zhao^{1,2}, Z. Wang^{1,2}, X. Zhang³, X. Liang³, J. Xia³, K. Wu^{1,2}, H. Zhou^{1,2}, Y. Dong^{1,2}, G. Yu⁴, K. Wang⁵, X. Liu⁶, Y. Zhou³ and W. Jiang^{1,2}
1. State Key Laboratory of Low-Dimensional Quantum Physics and Department of Physics, Tsinghua University, Beijing, China; 2. Frontier Science Center for Quantum Information, Tsinghua University, Beijing, China; 3. School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen, Shenzhen, China; 4. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 5. University of California Los Angeles Department of Electrical Engineering, Los Angeles, CA, United States; 6. Department of Electrical and Computer Engineering, Shinshu University, Nagano, Japan

- N1-12. Switching Fixed Magnetic Skyrmions in Continuous Film and Patterned Nanodots Using Voltage Control of Magnetic Anisotropy.** *D. Bhattacharya*¹, *S. Razavi*², *H. Wu*², *B. Dai*², *K. Wang*² and *J. Atulasimha*¹ *1. Virginia Commonwealth University, Richmond, VA, United States; 2. University of California Los Angeles, Los Angeles, CA, United States*

THURSDAY
AFTERNOON
12:30

LIVE Q&A 14

Session N2

SPIN WAVE II: MAGNONICS IN FERROMAGNETS AND ANTIFERROMAGNETS

Silvia Tacchi, Chair

CNR, Consiglio Nazionale delle Ricerche, Perugia, Italy

- N2-01. Theoretical Studies of Dipolar and Exchange Effects in Creating Magnetic Rogue Waves.** *M. Copus*¹ and *R. Camley*¹
1. Physics, University of Colorado at Colorado Springs, Colorado Springs, CO, United States
- N2-02. Quantum Magnonics at the Edge of Space and Time.** *G. Fabiani*¹ and *J. Mentink*¹ *1. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands*
- N2-03. Magnonic Bending, Phase Shifting and Interferometry in a 2D Reconfigurable Nanodisk Crystal.** *K. Stenning*¹, *J.C. Gartside*¹, *T. Dion*^{1,2}, *A. Vanstone*¹, *D. Arroo*² and *W. Branford*¹ *1. Imperial College London, London, United Kingdom; 2. University College London, London, United Kingdom*
- N2-04. Non-Hermitian Hybrid Magnonics. (Invited)** *X. Zhang*¹
1. Argonne National Laboratory, Lemont, IL, United States
- N2-05. Magnon Antibunching in a Nanomagnet.** *H. Yuan*¹ and *R. Duine*¹ *1. Institute for Theoretical Physics, Universiteit Utrecht, Utrecht, Netherlands*
- N2-06. Withdrawn**
- N2-07. Insight on the Time-Resolved Spin Wave Amplification in Nano-Magnonic Devices Using Spin-Orbit-Torque.** *H. Merbouche*¹, *B. Divinskiy*², *D. Gou  r  *¹, *C. Calo*⁴, *B. Paolo*³, *V. Cros*¹, *A. Anane*¹, *V.E. Demidov*² and *S. Demokritov*²
1. Unite Mixte de Physique CNRS/Thales, Palaiseau, France; 2. Institute for Applied Physics, University of Muenster, Munster, Germany; 3. Thales Research and Technology France, Palaiseau, France; 4. III-V Lab, Palaiseau, France
- N2-08. Controlling of Nonlinear Relaxation of Quantized Magnons in Nano-Devices.** *M. Mohseni*¹, *Q. Wang*², *B. Heinz*¹, *M. Kewenig*¹, *M. Schneider*¹, *F. Kohl*¹, *B. L  gel*¹, *A. Chumak*² and *P. Pirro*¹ *1. Physics, Technische Universit  t Kaiserslautern, Kaiserslautern, Germany; 2. Physics, Universit  t Wien, Wien, Austria*

- N2-09. Enhancement of the Spin Mixing Conductance at YIG/Pt Interfaces by Electrical Annealing.** R. Kohno¹, N. Thiery¹, K. An¹, P. Noël¹, L. Vila¹, v.v. naletov^{1,4}, N. Beaulieu^{2,3}, j. benyoussef³, G. de loubens² and O. Klein¹ 1. *Universite Grenoble Alpes, CEA, CNRS, Spintec, Grenoble, France*; 2. *SPEC, CEA-Saclay, CNRS, Universite Paris-Saclay, Gif-sur-Yvette, France*; 3. *LabSTICC, CNRS, Université de Bretagne Occidentale, Brest, France*; 4. *Institute of Physics, Kazan Federal University, Kazan, Russian Federation*
- N2-10. Spin-Transport and Spin-Dynamics in Ultra-low Damping Insulating Antiferromagnets.** A. Ross^{1,2}, I. Boventer³, O. Gomonay¹, L. Baldrati¹, V. Baltz⁴, U. Ebels⁴, A.L. Barra⁵, A. Anane³, A. Qaiumzadeh⁶, A. Brataas⁶, P. Kläui^{1,2} and R. Lebrun³ 1. *Institute for Physics, Johannes Gutenberg University Mainz, Mainz, Germany*; 2. *Graduate School of Excellence Materials Science in Mainz, Mainz, Germany*; 3. *Unité Mixte de Physique CNRS/Thalès, Palaiseau, France*; 4. *Université Grenoble Alpes CNRS/CEA, Grenoble INP, SPINTEC, Grenoble, France*; 5. *Laboratoire National des Champs Magnétiques Intenses, CNRS-UGA-UPS-INSA-EMFL, FR, Grenoble, France*; 6. *Center for Quantum Spintronics, Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway*
- N2-11. Optically Inspired Nanomagnonics With Patterned Spin Textures in Synthetic Antiferromagnets.** E. Albisetti¹, S. Tacchi², R. Silvani³, G. Scaramuzzi¹, S. Finizio⁴, S. Wintz⁴, C. Rinaldi¹, M. Cantoni¹, J. Raabe⁴, G. Carlotti³, R. Bertacco¹, E. Riedo⁵ and D. Petti¹ 1. *Dipartimento di Fisica, Politecnico di Milano, Milano, Italy*; 2. *CNR-IOM, Perugia, Italy*; 3. *Università di Perugia, Perugia, Italy*; 4. *Paul Scherrer Institut, Villigen, Switzerland*; 5. *New York University Tandon School of Engineering, Brooklyn, NY, United States*
- N2-12. Antiferromagnetic Spin Wave Propagation on Nonuniform Magnetic Backgrounds.** M. Hu^{1,2}, M. Hofer¹, E. Iacocca³ and M.J. Donahue⁴ 1. *Applied Mathematics, University of Colorado Boulder, Boulder, CO, United States*; 2. *Applied and Computational Mathematics Division, National Institute of Standards and Technology, Boulder, CO, United States*; 3. *Mathematics, Physics and Electrical Engineering, Northumbria University, Newcastle upon Tyne, United Kingdom*; 4. *Applied and Computational Mathematics Division, National Institute of Standards and Technology, Gaithersburg, MD, United States*
- N2-13. Withdrawn**
- N2-14. Simulating Spin Wave Noise in Synthetic Antiferromagnetic Textures.** J. Kim¹, J. Adam¹, A. Finco² and V. Jacques² 1. *Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Saclay, Palaiseau, France*; 2. *Laboratoire Charles Coulomb, CNRS, Université de Montpellier, Montpellier, France*

Session N3
MAGNETIC RECORDING VIA OPTICAL, HEAT AND
MAGNETIC EXCITATION I
(Poster Session)

Yassine Quessab, Co-Chair
New York University, New York, NY, United States
Stephanie Hernandez, Co-Chair
Seagate Technology, Minneapolis, MN, United States

- N3-01. Medium H_k Structure Effects in Microwave Assisted Magnetic Recording.** K. Kurihara¹, T. Tanaka¹, X. Ya¹, Y. Kanai² and K. Matsuyama¹ *1. ISEE, Kyushu University, Fukuoka, Japan; 2. Department of Engineering, Niigata Institute of Technology, Kashiwazaki, Japan*
- N3-02. Optimisation of Dual Structure Recording Media.** S. Greaves¹ and Y. Kanai² *1. RIEC, Tohoku Daigaku, Sendai, Japan; 2. Niigata Koka Daigaku, Kashiwazaki, Japan*
- N3-03. Separate Quantitative Evaluation of Perpendicular Magnetic Anisotropy for Disorder and Order Portion in FePt Granular Films.** T. Saito¹, K. Tham², R. Kushibiki², T. Ogawa¹ and S. Saito¹ *1. Tohoku Daigaku Daigakuin Kogaku Kenkyuka Kogakubu, Sendai, Japan; 2. Tanaka Kikinzoku Kogyo Kabushiki Kaisha, Chiyoda-ku, Japan*
- N3-04. Incoherent Magnetization Switching Within a FePt-L1₀ Grain.** Y. Yan¹ and J. Zhu¹ *1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, United States*
- N3-05. Multiscale Micromagnetic-Atomistic Modelling of the Effects of MgO/CoFeB Interfacial Anisotropy, Dzyaloshinskii-Moriya Interactions, and Spin Transfer Torque in HDD TMR Reader.** S. Jenkins¹, A. Dobrynin², K. McNeill², R. Chantrell¹ and R.F. Evans¹ *1. Physics, University of York, York, United Kingdom; 2. Research and Development, Seagate Technology (Ireland), Derry, United Kingdom*
- N3-06. Iterative Detection With Multilayer Perceptron for Bit-Patterned Media Recording.** S. Jeong¹ and J. Lee¹ *1. School of Electronic Engineering, Soongsil University, Seoul, The Republic of Korea*
- N3-07. Constrained Codes for Single-Reader/Two-Track Reading Technique in Bit-Patterned Magnetic Recording Systems.** S. Sokjabok¹, M. Mattayakan¹, C. Buajong¹, S. Koonkarnkhai², P. Kovintavewat² and c. warisarn¹ *1. College of Advanced Manufacturing Innovation (AMI), King Mongkut's Institute of Technology Ladkrabang, 1 Soi Chalongkrung 1, Ladkrabang, Bangkok 10520, Thailand., Bangkok, Thailand; 2. Data Storage Technology Research Center, Nakhon Pathom Rajabhat University (NPRU), Nakhon Pathom 73000, Thailand., Nakhon Pathom, Thailand*

- N3-08. Soft-Information Flipper Based on Long-Short Term Memory Networks for Ultra-High Density Magnetic Recording.** *N. Rueangnetr*¹, *L.M. Myint*² and *c. warisarn*¹
1. College of Advanced Manufacturing Innovation, King Mongkut's Institute of Technology Ladkrabang, KMITL, Bangkok, Thailand; 2. Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, KMITL, Bangkok, Thailand
- N3-09. A Simple Skew-Angle Detection and Alleviation Method Based on Readback Signal in Bit-Patterned Magnetic Recording Systems.** *S. Koonkarnkhai*¹, *c. warisarn*² and *P. Kovintavewat*¹ *1. Nakhon Pathom Rajabhat University, Nakhon Pathom, Thailand; 2. King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand*
- N3-10. Viscoelastic Effects of Thermal Decomposed Lubricants on the Head-Disk Interface in Heat-Assisted Magnetic Recording.** *H. Son*¹ and *P. Chung*¹ *1. Department of Energy Engineering, Inje University, Gimhae, The Republic of Korea*
- N3-11. Withdrawn**
- N3-12. The Influence of Finite-Size Effects on the Curie Temperature of $\text{L1}_0\text{-FePt}$.** *B.T. Nguyen*¹, *S. Ruta*¹, *O. Hovorka*², *R.F. Evans*¹ and *R. Chantrell*¹ *1. Physics, University of York, York, United Kingdom; 2. Engineering and Physical Sciences, University of Southampton, Southampton, United Kingdom*
- N3-13. Curvature Change of Heat Assisted Magnetic Recording Patterns With Different Bit Lengths.** *K. Xue*¹ and *R. Victora*¹
1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States
- N3-14. Effects of Thermo-Mechanical Contact on Ferromagnetic Thin Film of PMR (Perpendicular Magnetic Recording) Media.** *C. Yeo*¹, *M. He*¹, *J. Lee*¹, *M. Choi*³, *Y. Hong*³, *J. You*², *D. Purani*⁴, *J. Lee*⁵ and *H. Won*³ *1. Department of Mechanical Engineering, Texas Tech University, Lubbock, TX, United States; 2. School of Engineering, University of Saint Thomas, Saint Paul, MN, United States; 3. Department of Electrical and Computer Engineering, The University of Alabama, Tuscaloosa, AL, United States; 4. Head Disk Interface Group, Seagate Technology, Shakopee, MN, United States; 5. Hysitron Nanomechanical Test Instruments, Bruker Corporation, Eden Prairie, MN, United States*

Session N4
**MAGNETIC TUNNEL JUNCTION AND RELATED
EFFECTS, VOLTAGE CONTROLLED MAGNETISM
(Poster Session)**

Joseph Prestigiacomo, Chair
Naval Research Lab, Washington, DC, United States

- N4-01. Compact Model of Nanometer STT-MTJ Device With Scale Effect.** *M. Wang¹ and Y. Jiang¹ I. Jiangnan University, Wuxi, China*
- N4-02. Low Resistivity Spin Orbit Torque Wiring With WCu Composite Material.** *E. Komura¹, Y. Shiokawa¹, Y. Ishitani¹, K. Hamanaka¹, K. Suda¹, A. Tsumita¹, Y. Kakinuma¹, Y. Terasaki¹ and T. Sasaki¹ I. TDK Corporation, Ichikawa, Japan*
- N4-03. Measurement of Anisotropy Field Under External Perpendicular Magnetic Field in FeCoB and FeB Nanomagnets. Study of PMA Features in a Nanomagnet.** *V. Zayets¹ I. Research Institute for Advanced Electronics and Photonics, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*
- N4-04. Developing a Vampire Model for TAMR.** *B.W. Wilson¹, J.N. Scott¹, W. Hendren¹ and R. Bowman¹ I. Queen's University Belfast, Belfast, United Kingdom*
- N4-05. Withdrawn**
- N4-06. Reversible Voltage Control of Magnetism via Lithium Ion Migration in a Battery-Inspired Magneto-Ionic Heterostructure.** *M. Ameziane¹, R. Mansell¹ and S. van Dijken¹ I. Applied Physics, Aalto University, Espoo, Finland*
- N4-07. The Voltage-Controlled Magnetic Anisotropy Effect Under High Electric Field.** *B. Zhou¹, M. Xu¹, P. Khanal¹, Y. Zhang¹ and W. Wang¹ I. Physics, The University of Arizona, Tucson, AZ, United States*
- N4-08. Nonvolatile Voltage Controlled Molecular Spin State Switching for Memory Applications.** *G. Hao^{1,2}, A. Mosey³, X. Jiang¹, R.V. Chopdekar², R. Cheng³, X. Xu¹, A. Marshall⁴ and A.T. N'Diaye² I. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE, United States; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 3. Physics Department, Indiana University Purdue University at Indianapolis, Indianapolis, IN, United States; 4. Department of Electrical Engineering, University of Texas at Dallas, Austin, TX, United States*

Session N5
NOVEL SENSORS II
(Poster Session)

Jeffrey McCord, Chair
CAU Kiel, Kiel, Germany

- N5-01. Application of 90-Degree Configuration MTJ With PMA Pinned Layer and in-Plane Sensing Layer on Large Area Biosensors.** C. Lee¹, D. Su³, J. Wang² and C. Lai¹
1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; 3. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, United States
- N5-02. Serial Magnetic Tunnel Junctions Based Sensor for Nondestructive Flux Leakage Testing.** Z. Jin¹, M. Mohd Noor Sam^{1,2}, M. Oogane^{1,3} and Y. Ando^{1,4}
1. Applied Physics, Tohoku university, Sendai, Japan; 2. Graduate Program in Spintronics, Tohoku University, Sendai, Japan; 3. Center for Science and Innovation in Spintronics (Core Research Cluster), Organization for Advanced Studies, Tohoku university, Sendai, Japan; 4. Center for Spintronics Research Network, Tohoku university, Sendai, Japan
- N5-03. Sensing Scheme Design and High-Moment Magnetic Nanoparticles for Next-Generation Giant Magnetoresistance-Based Biosensors.** D. Su¹, K. Wu² and J. Wang²
1. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, United States; 2. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States
- N5-04. Design and Performance of GMR Line Devices for High Sensitive Magnetic Sensor Applications.** N. Fukatani¹, M. Ichimura¹ and J. Hayakawa¹
1. Center for Exploratory Research, Hitachi Ltd., Tokyo, Japan
- N5-05. Ultrasensitive Anomalous Hall Effect Sensor Based on CoFeB With Compensated in-Plane and Perpendicular Magnetic Anisotropies.** Y. Zhang¹, K. Wang¹ and G. Xiao¹
1. Physics, Brown University, Providence, RI, United States
- N5-06. Vibrational Electromagnetic Energy Harvester and GMI Accelerometer Combined Device.** J.J. Beato-López^{1,3}, I. Royo¹, J. Algueta-Miguel^{1,2} and C. Gómez-Polo^{1,3}
1. Universidad Publica de Navarra, Pamplona, Spain; 2. Institute of Smart Cities, Universidad Pública de Navarra, Pamplona, Spain; 3. Institute for Advanced Materials and Mathematics, INAMAT2, Universidad Pública de Navarra, Pamplona, Spain

- N5-07. Development of Highly Sensitive MI Element by Controlling Anisotropy and Noise Analysis of MI Element.** *J. Ma*¹ and *T. Uchiyama*¹ *1. Department of Electrical Engineering, Graduate School of Engineering, Nagoya University, Nagoya, Japan*
- N5-08. Withdrawn**
- N5-09. New Aspects on the Performance of a Fundamental Mode Orthogonal Fluxgate Magnetometer Based on Amorphous Wire Cores.** *M. Tibu*¹, *S. Corodeanu*¹, *C. Hlenschi*^{1,2}, *H. Chiriac*¹ and *N. Lupu*¹ *1. MDM, Institutul National de Cercetare-Dezvoltare pentru Fizica Tehnica, Iasi, Romania; 2. Physics, A. I. Cuza University of Iasi, Iasi, Romania*
- N5-10. On Reduction of the Magnetic Noise Limits of Orthogonal Fluxgate Sensor.** *M. Dressler*¹, *M. Butta*¹ and *M. Janosek*¹ *1. Department of Measurement, Czech Technical University in Prague Faculty of Electrical Engineering, Prague, Czechia*
- N5-11. Distributed Magnetic Sensor Using Reflection Coefficients From Both Ends of Single Magnetic Coaxial Cable.** *K. Takenaka*¹ and *N. Noguchi*¹ *1. Yokogawa Denki Kabushiki Kaisha, Musashino, Japan*
- N5-12. Smartphone-Based Indoor Localization Using Permanent Magnets and Artificial Intelligence for Pattern Recognition.** *E. Fisher*^{1,2}, *a. ivry*^{1,3}, *R. Alimi*¹ and *E. Weiss*¹ *1. Soreq Nuclear Research Center, Yavne, Israel; 2. Jerusalem College of Technology, Yerushalayim, Israel; 3. Technion Israel Institute of Technology, Haifa, Israel*
- N5-13. Printed Magnetic Needle Probes Sensor.** *S. Nguedjang Kouakeuo*^{1,3}, *Y. Tene Deffo*¹, *B. Ducharme*², *L. Morel*³, *M. Raulet*³, *P. Tsafack*¹, *J. Garcia-Bravo*⁴ and *B. Newell*⁴ *1. Faculty of Engineering and Technology, University of Buea, Buea, Cameroon; 2. Laboratoire de Génie Electrique et Ferroélectricité, INSA de Lyon, Villeurbanne, France; 3. Laboratoire Ampère, Université de Lyon, Villeurbanne, France; 4. School of Engineering Technology, Purdue University, West Lafayette, IN, United States*
- N5-14. High-Sensitive Symmetric Response Magnetoresistance Sensor With Magnetic Field Concentrator Using Anti-Phase AC Modulation Bridge.** *S. Shirotori*¹, *A. Kikitsu*¹, *Y. Higashi*¹, *Y. Kurosaki*¹ and *H. Iwasaki*¹ *1. Kabushiki Kaisha Toshiba Kenkyu Kaihatsu Center, Kawasaki, Japan*
- N5-15. Generation of Eddy Current at Localized Region Using Magnetic Focusing Probe for Eddy Current Testing.** *K. Sakai*¹, *T. Kiwa*¹ and *K. Tsukada*¹ *1. Graduate School of Interdisciplinary Science and Engineering in Health Systems, Okayama University, Okayama, Japan*
- N5-16. The Einstein-de Haas Effect in Yttrium Iron Garnet at 3 MHz.** *K. Mori*¹, *M. Dunsmore*¹, *J.E. Losby*^{1,2}, *D. Jenson*¹, *M. Belov*² and *M.R. Freeman*¹ *1. Physics, University of Alberta, Edmonton, AB, Canada; 2. National Research Council Canada Nanotechnology Research Centre, Edmonton, AB, Canada*

Session S7
NEW APPROACHES FOR INFORMATION
PROCESSING COUPLING SPINTRONICS AND
MAGNONICS

Tamalika Banerjee, Chair
University of Groningen, Groningen, Netherlands

3:00

- S7-01. **Towards Magnonic Devices Based on Voltage-Controlled Magnetic Anisotropy. (Invited) B. Rana¹** *1. Center for Emergent Matter Science, RIKEN, Wako, Japan*

3:36

- S7-02. **Mechanisms of the Voltage Control of Magnetic Anisotropy at Magnetic Metal/Oxide Interfaces. (Invited) F. Ibrahim¹, A. Hallal¹, H. Yang^{1,2}, B. Dieny¹ and M. Chshiev¹** *1. Univ. Grenoble Alpes, CEA, CNRS, SPINTEC, F-38000 Grenoble, France, Grenoble, France; 2. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo 315201, China, Ningbo, China*

4:12

- S7-03. **Designing Ferroelectric-Gated Mott Transistors via Interfacial Charge Engineering. (Invited) X. Hong¹** *1. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE, United States*

4:48

- S7-04. **Potential of SrTiO₃-Based 2DEG for Spin-Charge Interconversion. (Invited) A. Barthelemy¹** *1. Unite Mixte de Physique CNRS/Thales, Palaiseau, France*

5:24

- S7-05. **Controlling Magnetic Anisotropy by Rashba and Other Spin-Orbit Couplings. (Invited) J. Ieda¹** *1. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Japan*

Session 01
2D MAGNETIC MATERIALS

Yasuhiro Niimi, Chair
Osaka University, Osaka, Japan

- 01-01. Spin Transport and Spin-Orbit Proximity Phenomena in van der Waals Heterostructures. (Invited) J.F. Sierra¹, L. Benítez^{1,3}, W.F. Savero Torres¹, M. Costache¹ and S.O. Valenzuela^{1,2}** *1. Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology (BIST), Bellaterra, Spain; 2. Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain; 3. Universitat Autònoma de Barcelona, Barcelona, Spain*
- 01-02. Room-Temperature Ferromagnetism in CrTe₂ Thin Flakes Imaged by Single Spin Magnetometry. F. Fabre¹, A. Purbawati², A. Finco¹, A. Haykal¹, S. Chouaieb¹, N. Rougemaille², J. Coraux², I. Philip¹ and V. Jacques¹** *1. Laboratoire Charles Coulomb, Montpellier, France; 2. Institut NEEL, Grenoble, France*
- 01-03. Complex Spin Dynamics in Layered CrBr₃. S. Siddiqui³, J. Sklenar², D. Lebedev¹, J.T. Gish¹, M. Hersam¹ and A. Hoffmann³** *1. Department of Materials Science and Engineering, Northwestern University, Evanston, IL, United States; 2. Department of Physics and Astronomy, Wayne State University, Detroit, MI, United States; 3. Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign College of Engineering, Urbana, IL, United States*
- 01-04. Manipulation of the van der Waals Magnet Cr₂Ge₂Te₆ by Spin-Orbit Torques. V. Gupta¹, T.M. Cham¹, G.M. Stiehl¹, A. Bose¹, J.A. Mittelstaedt¹, K. Kang¹, S. Jiang¹, K. Mak¹, J. Shan¹, R. Buhrman¹ and D. Ralph^{1,2}** *1. Cornell University, Ithaca, NY, United States; 2. Kavli Institute at Cornell, Ithaca, NY, United States*
- 01-05. Distinct Magneto-Raman Signatures of Spin-Flip Phase Transitions in CrI₃. A. McCreary¹, T.T. Mai^{1,2}, F. Utermohlen², J.R. Simpson^{1,3}, K. Garrity¹, X. Feng², D.L. Shcherbakov², Y. Zhu⁴, J. Hu⁵, D. Weber², K. Watanabe⁶, T.T. taniguchi.takashi@nims.go.jp⁶, J. Goldberger², Z. Mao⁴, C. Lau², Y. Lu², N. Trivedi², R. Valdes Aguilar² and A.R. Hight Walker¹** *1. National Institute of Standards and Technology, Gaithersburg, MD, United States; 2. The Ohio State University, Columbus, OH, United States; 3. Towson University, Towson, MD, United States; 4. Pennsylvania State University, University Park, PA, United States; 5. University of Arkansas Fayetteville, Fayetteville, AR, United States; 6. National Institute for Materials Science, Ibaraki, Japan*

- 01-06. Topological Surface States-Caused Large Damping Enhancement in Dirac Semimetal-Ferromagnetic Metal Layered Structures.** *J. Ding*¹, *C. Liu*¹, *R. Yu*^{1,2}, *U. Erugu*³, *J. Tang*³, *H. Ding*², *H. Chen*^{1,4} and *M. Wu*¹ *1. Department of Physics, Colorado State University, Fort Collins, CO, United States; 2. National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, China; 3. Department of Physics and Astronomy, University of Wyoming, Laramie, WY, United States; 4. School of Advanced Materials Discovery, Colorado State University, Fort Collins, CO, United States*
- 01-07. Weak Antilocalization and Anisotropic Magnetoresistance in Topological $\text{Bi}_2\text{Te}_x\text{Se}_{3-x}$ Thin Films.** *G.M. Stephen*¹, *O. Vail*², *J. Lu*³, *P. Taylor*² and *A.L. Friedman*¹ *1. Laboratory for Physical Sciences, College Park, MD, United States; 2. Army Research Lab, Adelphi, MD, United States; 3. Materials Science and Engineering, University of Virginia, Charlottesville, VA, United States*
- 01-08. Spin-to-Charge Conversion in van der Waals Heterostructures. (Invited)** *S. Chenattukuzhiyil*¹ *1. CIC nanoGUNE, San Sebastian, Spain*
- 01-09. Electric-Field Control of Spin-Orbit Torque and Magnetic Anisotropy in Topological Insulator Heterostructures.** *T. Chiba*¹ and *T. Komine*² *1. National Institute of Technology, Fukushima College, Iwaki, Japan; 2. Faculty of Engineering, Ibaraki University, Hitachi, Japan*
- 01-10. Temperature- and Magnetic Field-Dependent Raman Spectroscopy of Layered, Antiferromagnetic FePS_3 .** *J.R. Simpson*^{1,2}, *A. McCreary*², *T.T. Mai*², *C. Dennis*³, *R. Valdes Aguilar*⁴ and *A.R. Hight Walker*² *1. Physics, Astronomy, and Geosciences, Towson University, Towson, MD, United States; 2. Physical Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, United States; 3. Materials Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, United States; 4. Physics, The Ohio State University, Columbus, OH, United States*
- 01-11. Spin Hall Effect in Paramagnetic Kagome-Lattice Semimetal $\text{Co}_3\text{Sn}_2\text{S}_2$.** *Y. Lau*^{1,2}, *K. Fujiwara*¹, *J. Ikeda*¹, *T. Seki*^{1,2}, *A. Tsukazaki*^{1,2} and *K. Takanashi*^{1,2} *1. Institute for Materials Research (IMR), Tohoku University, Sendai, Japan; 2. Center for Spintronics Research Network, Tohoku University, Sendai, Japan*

- 01-12. Ferromagnetism and Giant Magnetoresistance in Zinc-Blende FeAs/InAs Superlattice Structures.** *L. Anh*^{2,3}, T. Hayakawa¹, Y. Nakagawa⁴, H. Shinya^{5,6}, T. Fukushima^{7,8}, H. Katayama-Yoshida⁹, Y. Iwasa^{4,10} and M. Tanaka^{1,9} *1. Dept. of Electrical Engineering and Information Systems, The University of Tokyo, Tokyo, Japan; 2. Institute of Engineering Innovation, The University of Tokyo, Tokyo, Japan; 3. JST, PRESTO, Saitama, Japan; 4. QPEC & Dept. of Applied Physics, The University of Tokyo, Tokyo, Japan; 5. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 6. Center for Spintronics Research Network (CSRN), Tohoku University, Sendai, Japan; 7. Institute for Solid State Physics, The University of Tokyo, Chiba, Japan; 8. Center for Spintronics Research Network (CSRN), Osaka University, Osaka, Japan; 9. Center for Spintronics Research Network (CSRN), The University of Tokyo, Tokyo, Japan; 10. RIKEN Center for Emergent Matter Science (CEMS), Tokyo, Japan*
- 01-13. Proximity-Induced Spin Hall Effect in Graphene/WSe₂ van der Waals Heterostructures With Tunable, Highly Efficient Spin-to-Charge Conversion.** *F. Herling*^{1,2}, S. Chenattukuzhiyil¹, J. Inгла-Aynés¹, N. Ontoso¹, L.E. Hueso^{1,3} and F. Casanova^{1,3} *1. CIC nanoGUNE, San Sebastian, Spain; 2. QuESTech, Horizon 2020 ITN, Marie Skłodowska-Curie Action (No 766025), Grenoble, France; 3. IKERBASQUE, Basque Foundation for Science, Bilbao, Spain*
- 01-14. Coexistence of Quantum Oscillation and Magnetic Hysteresis in CeTe₃ Thin Films.** *M. Watanabe*¹, S. Lee¹, T. Asano¹, T. Ibe¹, M. Tokuda¹, H. Taniguchi¹, D. Ueta², Y. Okada², K. Kobayashi^{1,3} and Y. Niimi^{1,4} *1. Graduate School of Science, Osaka University, Toyonaka, Japan; 2. Okinawa Institute of Science and Technology Graduate University, Kunigami-gun, Japan; 3. Institute for Physics of Intelligence and Department of Physics, The University of Tokyo, Bunkyo-ku, Japan; 4. Center for Spintronics Research Network, Osaka University, Toyonaka, Japan*

FRIDAY
MORNING
6:00

LIVE Q&A 15

Session 02

MRAM AND MAGNETIC TUNNEL JUNCTIONS

Takayuki Nozaki, Co-Chair

Natnaol Institute of Advanced Industrial Science and Technology,
Tsukuba, Japan

Kevin Garello, Co-Chair

SPINTEC, Grenoble Cedex, France

- 02-01. Technologies for Commercial MRAM Products and Radiation Hard Applicability. (Invited)** *F.B. Mancoff*¹, S. Ikegawa¹, J. Janesky¹, S. Aggarwal¹, S. Alam¹, H. Almasi¹, M. DeHerrera¹, B. Hughes¹, H. Lee¹, K. Nagel¹, G. Shimon¹, J. Sun¹, J. Yang-Scharlotta², A. Narasimham² and S. Guertin² *1. Everspin Technologies, Inc., Chandler, AZ, United States; 2. Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States*

- 02-02. Simplified Double Magnetic Tunnel Junction With Switchable Assistance Layer for Improved STT-MRAM Performance.** *D. Sanchez Hazen*¹, *S. Auffret*¹, *I. Joumard*¹, *L. Vila*¹, *L. Buda-Prejbeanu*¹, *R. Sousa*¹, *L. Prejbeanu*¹ and *B. Dieny*¹ *1. SPINtronique et Technologie des Composants, Grenoble, France*
- 02-03. Effect of Surface Modification Treatment on top Pinned MTJ With Perpendicular Easy Axis.** *H. Honjo*¹, *M. Yasuhira*¹, *S. Ikeda*¹ and *T. Endoh*¹ *1. Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Japan*
- 02-04. Back-Hopping in Spin-Transfer-Torque Switching of Perpendicularly Magnetized Tunnel Junctions.** *T. Devolder*³, *O. Bultynck*^{1,2}, *P. Bouquin*^{3,1}, *V. Nguyen*¹, *S. Rao*¹, *D. Wan*¹, *B. Sorée*^{1,2}, *I. Radu*¹, *G.S. Kar*¹ and *S. Couet*¹ *1. IMEC, Leuven, Belgium; 2. KUL, Leuven, Belgium; 3. Université Paris-Saclay, Palaiseau, France*
- 02-05. Impact of Fe₈₀B₂₀ Insertion on the Properties of Dual-MgO Perpendicular Magnetic Tunnel Junctions.** *E. Liu*¹, *T. Lee*² and *H. Yang*¹ *1. National University of Singapore, Singapore, Singapore; 2. Globalfoundries Inc Singapore, Singapore, Singapore*
- 02-06. Enhancement of Magnetic Interaction and Magnetic Anisotropy in MTJ With Multiple CoFeB/MgO Interfaces for High Thermal Stability.** *K. Nishioka*¹, *H. Honjo*¹, *M. Yasuhira*¹, *S. Ikeda*^{1,2} and *T. Endoh*^{1,3} *1. Center for Innovative Integrated Electronic Systems, Tohoku Daigaku, Sendai, Japan; 2. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan; 3. Graduate school of Engineering, Tohoku University, Sendai, Japan*
- 02-07. Thermal Stability and Magnetization Switching of Exchanged Coupled Composite Free Layer of Perpendicular Magnetic Tunnel Junction.** *I. Volvach*¹, *E. Fullerton*³ and *V. Lomakin*² *1. Material Science and Engineering, University of California San Diego, La Jolla, CA, United States; 2. Electrical & Computer Engineering, University of California San Diego, La Jolla, CA, United States; 3. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA, United States*
- 02-08. Withdrawn**
- 02-09. Resolution of Non-Destructive Imaging for Buried Interfaces.** *A. Hirohata*¹, *B. Aditya*², *J. Wu*², *M. Ota*³ and *K. Elphick*¹ *1. Electronics Engineering, University of York, York, United Kingdom; 2. City University of Hong Kong, Kowloon, Hong Kong; 3. Nagaoka Gijutsu Kagaku Daigaku Denki Denshi Joho Kogaku Katei Denki Denshi Joho Kogaku Senko, Nagaoka, Japan*
- 02-10. Perpendicular Magnetic Anisotropy in Cu₂Sb-Type (Mn-Cr) AlGe Films: Layer Thickness and Adjacent Layer Dependence.** *T. Kubota*^{1,2}, *K. Ito*^{1,2}, *R.Y. Umetsu*^{1,2}, *M. Mizuguchi*^{1,2} and *K. Takanashi*^{1,2} *1. Institute for Materials Research, Tohoku Daigaku, Sendai, Japan; 2. Center for Spintronics Research Network, Tohoku Daigaku, Sendai, Japan*

- O2-11. Variation of Energy Barrier With Temperature in X/1X-nm Shape-Anisotropy Magnetic Tunnel Junctions.** *J. Igarashi*¹, *B. Jinnai*², *V. Desbuis*³, *S. Mangin*³, *S. Fukami*^{1,4} and *H. Ohno*^{1,4}
1. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 3. Institut Jean Lamour, Université de Lorraine, Nancy, France; 4. Center for Science and Innovation in Spintronics, Tohoku University, Sendai, Japan
- O2-12. Combined Effects of Stray Field and Dzyaloshinskii–Moriya Interaction on Magnetic Tunnel Junction With Stepped and Pillar Structures.** *C. Cheng*¹, *K. Chen*¹, *J. Wei*², *Y. Hsin*², *S. Sheu*² and *Y. Tseng*¹ *1. National Chiao Tung University, Hsinchu, Taiwan; 2. Industrial Technology Research Institute, Hsinchu, Taiwan*
- O2-13. Investigation of Acoustic Wave Induced FMR Assisted Spin Torque Switching of MTJs With Lateral Anisotropy Variation.** *W. Misba*¹, *M. Rajib*¹, *D. Bhattacharya*¹ and *J. Atulasimha*¹ *1. Virginia Commonwealth University, Richmond, VA, United States*
- O2-14. Evaluation of Read Disturbance Reduction Effect by Bi-Directional Read on Ferromagnetic Material Properties of SOT-MRAM.** *Y. Kishi*¹, *K. Tabata*¹, *M. Ke*¹ and *T. Kawahara*¹ *1. Department of Electrical Engineering, Faculty of Engineering, Tokyo University of Science, Katsushika-ku, Japan*
- O2-15. Multilevel Magnetization Switching of Magnetic Tunnel Junctions Induced by Spin-Orbit Torque.** *J. Lourembam*¹, *L. Huang*¹, *B. Chen*², *J. Qiu*¹, *H. Chung*¹, *Q. Yap*¹, *S. Lee Koon Yap*³, *S. Wong*³ and *S. Lim*¹ *1. Electronic Materials, Institute of Materials Research and Engineering, Singapore, Singapore; 2. Institute of High Performance Computing, Singapore, Singapore; 3. Institute of Materials Research and Engineering, Singapore, Singapore*
- O2-16. Effect of Edge Roughness in Spin-Orbit Torque Magnetoresistive Random-Access Memory With Damping Constant Variation.** *J. Byun*¹, *D. Kang*¹ and *M. Shin*¹ *1. School of Electrical Engineering, Korea Advanced Institute of Science and Technology, Daejeon, The Republic of Korea*

Session 03
SKYRMIONS AND BEYOND

Haifeng Du, Co-Chair

High Magnetic Field Laboratory of Chinese Academy of Sciences,
Hefei, China

Yizhou Liu, Co-Chair

Rikagaku Kenkyujo Sohatsu Bussei Kagaku Kenkyu Center,
Tianjin, China

- 03-01. Beyond Skyrmions: Alternative Magnetic Quasiparticles. (Invited)** B. Göbel^{1,2}, I. Mertig¹ and O. Tretiakov³
1. Martin-Luther-Universität Halle-Wittenberg, Halle, Germany; 2. Max Planck Institute of Microstructure Physics, Halle, Germany; 3. School of Physics, University of New South Wales, Sydney, NSW, Australia
- 03-02. Topological Half-Skyrmions and Bimerons in an Antiferromagnetic Insulator at Room Temperature.** H. Jani¹ and P. Radaelli²
1. Physics, National University of Singapore, Singapore, Singapore; 2. Physics, University of Oxford, Oxford, United Kingdom
- 03-03. Three-Dimensional Dynamics of a Magnetic Hopfion.** Y. Liu^{1,2}, W. Hou³, X. Han¹ and J. Zang³
1. Beijing National Laboratory of Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Center for Emergent Matter Science, RIKEN, Wako, Japan; 3. Department of Physics and Astronomy, University of New Hampshire, Durham, NH, United States
- 03-04. Chirality in Action: From Antiferromagnets to Novel Chiral Particles. (Invited)** Y. Mokrousov^{1,2}
1. Forschungszentrum Julich GmbH, Julich, Germany; 2. Johannes Gutenberg Universität Mainz, Mainz, Germany
- 03-05. Electric-Field Switching of Magnetic Topological Charge in Type-I Multiferroics.** C. Xu¹, P. Chen¹, H. Tan², Y. Yang³, H. Xiang⁴ and L. Bellaiche¹
1. University of Arkansas Fayetteville, Fayetteville, AR, United States; 2. Max Planck-Institute of Microstructure Physics, Halle, Germany; 3. Nanjing University, Nanjing, China; 4. Fudan University, Shanghai, China
- 03-06. Stabilization of Zero Field Skyrmions in Synthetic Antiferromagnetic Multilayers.** M. Sim^{2,1}, D. Thian², M. Ramu², X. Chen², S. Goolaup², C. Li², H. Tan², N. Lim Chee Beng², S. Lee Koon Yap², P. Ho² and A. Soumyanarayanan^{2,1}
*1. Department of Physics, National University of Singapore, Singapore, Singapore; 2. Institute of Materials Research and Engineering, Agency for Science, Technology and Research (A*STAR), Singapore, Singapore*

- 03-07. Skyrmions in Synthetic Antiferromagnets and Their Current Induced Nucleation.** R. Juge⁵, N. Sisodia⁵, V. Pham⁵, Q. Zhang⁵, K. Rana⁵, L. Aballe¹, M. Foerster¹, R. Belkhou⁴, M. Belmeguenai², G. Gaudin⁵, J. Gräfe³, M. Weigand³ and O. Boulle⁵ 1. *Sincrotron ALBA, Barcelona, Spain*; 2. *Laboratoire des Sciences des Procédés et des Matériaux, Villeneuve, France*; 3. *Max-Planck-Institute Stuttgart, Stuttgart, Germany*; 4. *Synchrotron SOLEIL, Gif-sur-Yvette, France*; 5. *Spintec, Univ. Grenoble Alpes, CNRS, CEA, Grenoble, France*
- 03-08. Stabilisation of Skyrmions in an Antiferromagnet at Room Temperature Using Exchange Bias.** K. Rana², R. Lopes Seeger², S. Ruiz-Gomez¹, R. Juge², Q. Zhang², S. Auffret², M. Foerster¹, L. Aballe¹, G. Gaudin², V. Baltz² and O. Boulle² 1. *Sincrotron ALBA, Barcelona, Spain*; 2. *Spintec, Univ. Grenoble Alpes CNRS CEA, Grenoble, France*
- 03-09. Magnonic Quadrupole Topological Insulator in Antiskyrmion Crystals.** T. Hirose¹, S.A. Diaz², J. Klinovaja² and D. Loss² 1. *Physics, University of Tokyo, Tokyo, Japan*; 2. *Physics, Universität Basel, Basel, Switzerland*
- 03-10. Withdrawn**
- 03-11. Tuning Zero-Field Magnetic Skyrmions in all-Light-Metals Multilayers.** R. Lo Conte^{1,2}, A.K. Nandy³, G. Chen⁴, A. Fernandes Cauduro⁵, A. Maity³, C. Ophus⁵, Z. Chen⁶, A.T. N'Diaye⁷, K. Liu^{6,4}, A.K. Schmid⁵ and R. Wiesendanger¹ 1. *Department of Physics, University of Hamburg, Hamburg, Germany*; 2. *Department of Materials Science and Engineering, University of California Berkeley, Berkeley, CA, United States*; 3. *School of Physical Sciences, National Institute of Science Education and Research, Jatni, India*; 4. *Department of Physics, University of California Davis, Davis, CA, United States*; 5. *Molecular Foundry, E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States*; 6. *Department of Physics, Georgetown University, Washington, DC, United States*; 7. *Advanced Light Source, E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States*
- 03-12. Observation of Opposite Topological Charges in Single D_{2d} Heusler Compound.** J. Jena^{2*}, B. Göbel², T. Ma², V. Kumar¹, R. Saha², I. Mertig³, C. Felser¹ and S.S. Parkin^{2,3} 1. *Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*; 2. *NISE, Max Planck Institute of Microstructure Physics, Halle, Germany*; 3. *Institute of Physics, Martin Luther University, Halle, Germany*
- 03-13. Micromagnetic Simulations of Skyrmionic Bubbles in the Van Der Waals Structure Fe_3GeTe_2 .** M. Grelier¹, Y. Sassi¹, B. Dlubak¹, M. Martin¹, P. Seneor¹, V. Cros¹, N. Reyren¹ and A. Fert¹ 1. *Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, Palaiseau, France*

* - Best student presentation award finalist

Session 04

SPIN HALL AND RELATED EFFECTS I

Vlad Demidov, Co-Chair

University of Muenster, Muenster, Germany

Francisco Gonçalves, Co-Chair

HZDR- Helmholtz Zentrum Dresden Rossendorf, Dresden, Germany

- 04-01. Giant Transition-State Enhancement of Quasiparticle Spin-Hall Effect in an Exchange-Spin-Split Superconductor Detected by non-Local Magnon Spin-Transport.** *K. Jeon¹, J. Jeon¹, X. Zhou¹, A. Migliorini¹, J. Yoon¹ and S.S. Parkin¹* *1. Max Planck Institute of Microstructure Physics, Halle (Saale), Germany*
- 04-02. Strong Interfacial Exchange Field in a Heavy Metal/Ferromagnetic Insulator System Determined by Spin Hall Magnetoresistance.** *J. Gomez-Perez¹, X. Zhang^{2,3}, F. Calavalle¹, M. Ilyn³, C. González-Orellana³, M. Gobbi^{1,4}, C. Rogero^{2,3}, A. Chuvilin^{1,4}, V. Golovach^{2,4}, L.E. Hueso^{1,4}, F. Bergeret^{2,4} and F. Casanova^{1,4}* *1. CIC nanoGUNE BRTA, Donostia-San Sebastián, Spain; 2. Donostia International Physics Center, San Sebastian, Spain; 3. Centro de Fisica de Materiales, San Sebastian, Spain; 4. Ikerbasque, Basque Foundation for Science, Bilbao, Spain*
- 04-03. Spin Transport in $\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3/\text{YBa}_2\text{Cu}_3\text{O}_{7.8}$ Bilayers.** *J. Wisser¹ and Y. Suzuki¹* *1. Applied Physics, Stanford University, Stanford, CA, United States*
- 04-04. Dephasing of Transverse Spin Current in Ferrimagnetic Alloys.** *Y. Lim¹, B. Khodadadi¹, J. Li², D. Viehland², A. Manchon^{3,4} and S. Emori¹* *1. Physics, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States; 2. Materials Science and Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, United States; 3. Physical Science and Engineering Division, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 4. CNRS, CINaM, Aix-Marseille Université, Marseille, France*
- 04-05. Charge-to-Spin Conversion Efficiency in Ferromagnetic Nanowires by Spin Torque Ferromagnetic Resonance: Reconciling Lineshape and Linewidth Analysis Methods.** *J. Xu¹ and A.D. Kent¹* *1. physics department, New York University, New York, NY, United States*
- 04-06. Modulation of Spin Sink Efficiency Using Magnetic Phase Transition on NiFe/Dy System.** *K. Yamanoi¹, Y. Sakakibara¹, J. Fujimoto², M. Matsuo^{2,3} and Y. Nozaki^{1,4}* *1. Department of Physics, Keio University, Yokohama, Japan; 2. Kavli Institute for Theoretical Sciences, University of Chinese Academy of Sciences School of Computer and Control Engineering, Beijing, China; 3. RIKEN Noshinkei Kagaku Kenkyu Center, Wako, Japan; 4. Center for Spintronics Research Network, Kanagawa, Japan*

- O4-07. Molecular Spintronics Utilizing a Novel Metal-Organic Interface. (Invited) S. Miwa¹** *1. The Institute for Solid State Physics (ISSP), The University of Tokyo, Kashiwa, Japan*
- O4-08. Enhancement of Spin Hall Effect in Ta_xW_{1-x} Alloys. L. Qian¹, K. Wang¹, Y. Zheng² and G. Xiao¹** *1. Physics, Brown University, Providence, RI, United States; 2. Northeastern University, Boston, MA, United States*
- O4-09. Large Spin Hall Effect in non-Equilibrium Cu-Based Binary Alloys Beyond Solubility Limit. H. Masuda¹, R. Modak², T. Seki^{1,2}, K. Uchida^{1,2}, Y. Lau^{1,3}, Y. Sakuraba^{2,4}, R. Iguchi² and K. Takanashi^{1,3}** *1. Institute for Materials Research, Tohoku university, Sendai, Japan; 2. National Institute for Materials Science, Tsukuba, Japan; 3. Center for Spintronics Research Network, Tohoku University, Sendai, Japan; 4. JST PRESTO, Saitama, Japan*
- O4-10. Observation of Inverse Spin Hall Effect at CoFeB/C₆₀ Interface. P. Sharangi¹, B.B. Singh¹ and S. Bedanta¹** *1. School of Physical Science, National Institute of Science Education and Research, Bhubaneswar, India*
- O4-11. Inverse Spin Hall Effect in Sputtered MoS₂/CoFeB Bilayers. A. Mishra¹, V. Thiruvengadam¹, K. Roy¹, P. Gupta¹, B.B. Singh¹ and S. Bedanta¹** *1. National Institute of Science Education and Research, Bhubaneswar, India*
- O4-12. Direct Observation of Spin Accumulation in Cu Induced by Spin Pumping. J. Ding², W. Zhang^{1,2}, M. Jungfleisch^{3,2}, J. Pearson², H. Ohldag^{4,5}, V. Novosad² and A. Hoffmann^{6,2}** *1. Oakland University, Rochester, MI, United States; 2. Argonne National Laboratory Materials Science Division, Lemont, IL, United States; 3. University of Delaware, Newark, DE, United States; 4. E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 5. University of California Santa Cruz Division of Physical and Biological Sciences, Santa Cruz, CA, United States; 6. University of Illinois at Urbana-Champaign, Urbana, IL, United States*

FRIDAY
MORNING
6:00

LIVE Q&A 15

Session 05
MAGNETIC MICROSCOPY AND IMAGING II
(Poster Session)

Agustina Asenjo, Chair
ICMM-CSIC, Madrid, Spain

- O5-01. Nucleation of Magnetic Singularities at Interfaces in Ferro/Ferrimagnetic Multilayers Studied by Magnetic Force Microscopy and X-ray Magnetic Tomography. J. Hermosa^{1,2}, A. Hierro-Rodriguez^{1,2}, C. Quiros^{1,2}, L. Alvarez Prado^{1,2}, R. Valcarcel³, A. Sorrentino³, E. Pereiro³, J. Martín^{1,2}, M. Velez^{1,2} and S. Ferrer³** *1. Physics Dept., Universidad de Oviedo, Oviedo, Spain; 2. CINN (CSIC – Universidad de Oviedo), El Entrego, Spain; 3. ALBA Synchrotron, Cerdanyola del Vallès, Spain*

- 05-02. Nucleation and Current-Induced Bubble Structures Motion in PMA Multilayers.** *J. Marqués Marchán*¹, *M. Pérez-Carmona*¹, *J. Prieto*² and *A. Asenjo*¹ *1. Instituto de Ciencia de Materiales de Madrid (ICMM), Consejo Superior de Investigaciones Científicas, Madrid, Spain; 2. Instituto de Sistemas Optoelectrónicos y Microtecnología (ISOM), Universidad Politécnica de Madrid, Madrid, Spain*
- 05-03. Withdrawn**
- 05-04. Magnetic Stray Field Sensing With Spin Defects in Silicon Carbide.** *M. Bejarano*¹, *F.J. Gonçalves*¹, *M. Hollenbach*^{1,2}, *T. Hache*^{1,3}, *Y. Berencén*¹, *G.V. Astakhov*¹ and *H. Schultheiss*¹ *1. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Technische Universität Dresden, Dresden, Germany; 3. Technische Universität Chemnitz, Chemnitz, Germany*
- 05-05. Magneto-Optical Investigation of Scattering by Superparamagnetic Nanoparticles Using Multi-Harmonic Analysis.** *C. Patterson*², *M. Syed*¹, *N. Fried*¹ and *T. Li*¹ *1. Physics & Optical Engineering, Rose-Hulman Institute of Technology, Terre Haute, IN, United States; 2. Physics, University of Michigan, Ann Arbor, MI, United States*
- 05-06. Characterizing Tunable Nanoparticle Systems for Thermometry.** *T.Q. Bui*¹, *A.J. Biacchi*¹, *A.R. Hight Walker*¹, *B. Correa*¹, *C. Dennis*¹ and *S. Woods*¹ *1. National Institute of Standards and Technology, Gaithersburg, MD, United States*
- 05-07. A Description of Laser Impacts on Magnetic Properties for GO Electrical Steels Under Surface Treatment With Short and Ultra-Short Pulses.** *M. Nesser*¹, *O. Maloberti*^{2,1}, *E. Salloum*¹, *J. Dupuy*³, *J. Birat*⁴, *C. Pineau*⁴, *S. Panier*¹, *J. Fortin*^{1,2} and *P. Dassonville*^{5,2} *1. LTI Laboratory, Amiens, France; 2. ESIEE Amiens, Amiens, France; 3. Multitel, Mons, Belgium; 4. Instituts de Recherche Technologique Matériaux Metallurgie Procédés, Metz, France; 5. MIS, Amiens, France*
- 05-08. Evidence of the Interfacial Dzyaloshinskii-Moriya Interaction in Ni₈₀Fe₂₀/Graphene Using Bragg-MOKE.** *N. Bansal*¹, *N. Chowdhury*¹, *A. Kumar*¹, *S. Das*² and *P.K. Muduli*¹ *1. Physics, Indian Institute of Technology Delhi, New Delhi, India; 2. Centre for Applied Research in Electronics (CARE), Indian Institute of Technology Delhi, New Delhi, India*
- 05-09. Effect of Ti as an Under and Spacer-Layer on the Perpendicular Magnetic Anisotropy of Tb-Fe Thin Film.** *A.K. Sahoo*², *J.A. Chelvane*¹ and *J.R. Mohanty*² *1. Defence Metallurgical Research Laboratory, Hyderabad 500058, India, Hyderabad, India; 2. Nanomagnetism and Microscopy Laboratory, Department of Physics, Indian Institute of Technology Hyderabad, Kandi, Sangareddy 502285, Telangana, India, Hyderabad, India*

Session 06
MICROMAGNETIC MODELLING I
(Poster Session)

Harald Oezelt, Chair
Danube University Krems, Wr. Neustadt, Austria

- O6-01. Scalable Space and Time Hierarchical Dipole-Dipole Interactions in the VAMPIRE Code.** S. Jenkins¹, A. Meo¹ and R.F. Evans¹ *1. Physics, University of York, York, United Kingdom*
- O6-02. Micromagnetic Modeling Magnetization Excitation by a Resonance.** V. Teplov¹, V. Bessonov¹, S. Batalov¹ and A. Telegin¹ *1. Institute of Metallurgy UB RAS, Yekaterinburg, Russian Federation*
- O6-03. Skyrmions in Nanodiscs of Co/Pt and the Effect of Inter-Skyrmionic Dipolar Interactions on Their Stability in Nanostructure.** Y. Kumar¹, H. Saren¹ and P. Das¹ *1. Physics, Indian Institute of Technology Delhi, New Delhi, India*
- O6-04. Possible Realization of Double Spin Vortex State in Hollow Submicron Particles.** N. Hirano¹, E. Nomura¹, M. Chiba¹, H. Magara², T. Sato², Z. Akase² and S. Kobayashi¹ *1. Faculty of Science and Engineering, Iwate University, Morioka, Japan; 2. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan*
- O6-05. Stress-Induced Modification of Gyration Eigen-Frequencies in Stacked Double-Vortex Structures.** V. Iurchuk¹, A. Kákay¹ and A. Deac¹ *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*
- O6-06. Vortex-Induced Topological Rearrangements in Permalloy Antidot Films.** V.V. Zverev^{1,2} and I.M. Izmozherov^{1,2} *1. Department of Theoretical Physics and Applied Mathematics, Ural Federal University named after the first President of Russia B N Yeltsin, Institute of Physics and Technology, Ekaterinburg, Russian Federation; 2. M N Miheev Institute of Metal Physics, Institut fiziki metallov imeni M N Miheeva Ural'skogo otdelenia Rossijskoj akademii nauk, Ekaterinburg, Russian Federation*
- O6-07. Withdrawn**
- O6-08. Spatial Magnetization Modes in Spin Hall Driven Oscillators.** E. Zhang¹ and J. Zhu¹ *1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, United States*

- 06-09. Spin Waves Transport in the 3D Magnonic Waveguides.** *A.A. Martyshkin¹, E. Beginin¹ and A. Sadovnikov¹*
1. Saratovskij nacional'nyj issledovatel'skij gosudarstvennyj universitet imeni N G Cernysevskogo, Saratov, Russian Federation
- 06-10. Shape-Related Effects on Ferromagnetic Nanoparticles: a Micromagnetic Approach for Highly Diluted and Highly Ordered Systems.** *R. Delgado-Garcia¹, G. Rodriguez-Rodriguez¹, A. López-Ortega¹ and J. Colino¹* *1. Applied Physics, Universidad de Castilla-La Mancha, Toledo, Spain*
- 06-11. The Analysis of Magnetite Nanoparticles Allowed to Warm Through Superparamagnetic Transition.** *D. McPherson¹ and K. Chesnel¹* *1. Physics and Astronomy, Brigham Young University, Provo, UT, United States*
- 06-12. Asymmetry Induced Inhomogeneous Magnetization Reversal in Hemispherical Shells.** *A. Mary¹ and S. Thomas¹*
1. Department of Physics, Cochin University of Science and Technology, Cochin 682022, India
- 06-13. Withdrawn**
- 06-14. Switching in Square Ferromagnetic Nanodot.** *P. Eroshenko², S. Komogortsev² and V.A. Fel'k¹* *1. Sibirskij gosudarstvennyj universitet nauki i tehnologij imeni akademika M F Resetneva, Krasnoarsk, Russian Federation; 2. Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russian Federation*
- 06-15. Phase-Field Simulation of Domain Evolution and Magnetization Switching Mechanism Near the Ferromagnetic Morphotropic Phase Boundary.** *C. Hu¹, Z. Zhang¹, T. Yang², W. Li¹ and L. Chen²* *1. Liaocheng University, Liaocheng, China; 2. The Pennsylvania State University, University Park, PA, US, University Park, PA, United States*
- 06-16. Withdrawn**
- 06-17. Micromagnetic Simulations of the Quasi-Static Properties of Dissimilar Bilayers.** *A. Pokhrel¹, B. Nepal¹, U. Karki¹, A. Sapkota¹, A. Rai¹, T. Mewes¹ and C. Mewes¹* *1. Physics and Astronomy, The University of Alabama System, Tuscaloosa, AL, United States*
- 06-18. Micromagnetic Modelling of Stripe Domains in Thin Films With a Columnar Microstructure.** *E. Dentina¹, A. Bolyachkin¹, N. Kulesh¹ and V. Vas'kovskiy^{1,2}* *1. Ural Federal University, Ekaterinburg, Russian Federation; 2. Insitute of Metal Physics UB RAS, Ekaterinburg, Russian Federation*

Session 07
**SPIN WAVE III: CONTROLLING SPIN WAVE
DYNAMICS**
(Poster Session)

Maciej Dabrowski, Co-Chair
University of Exeter, Exeter, United Kingdom
Juan Gabriel Ramirez, Co-Chair
Universidad de los Andes, Bogotá, Colombia

- 07-01. Systematic Micromagnetic Study of the Band Structure of One-Dimensional Artificial Magnonic Crystals in Presence of Interfacial Dzyaloshinskii-Moriya Interaction.**
R. Silvani^{1,2}, S. Tacchi³, M. Kuepferling¹ and G. Carlotti²
1. Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 2. Universita degli Studi di Perugia Dipartimento di Fisica e Geologia, Perugia, Italy; 3. Istituto Officina dei Materiali Consiglio Nazionale delle Ricerche, Trieste, Italy
- 07-02. Effect of the Interfacial Dzyaloshinskii-Moriya Interaction on Spin Waves Eigenmodes of Elliptical CoB Dots Magnetized in-Plane.** M. Alunni¹, R. Silvani^{1,2}, S. Tacchi³ and G. Carlotti¹ *1. Dept of Physics and Geology, Universita degli Studi di Perugia, Perugia, Italy; 2. Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 3. Istituto Officina dei Materiali del CNR (CNR-IOM), Perugia, Italy*
- 07-03. Spin Wave Resonance Properties of Magnetic Squares With Different Aspect Ratios Based on Co₉₀Fe₁₀.** X. Ya¹, K. Kurihara¹, T. Tanaka¹ and K. Matsuyama¹ *1. ISEE, Kyushu University, Fukuoka, Japan*
- 07-04. Withdrawn**
- 07-05. Spin Waves in Cylindrical Nanowires in the Vortex State.**
D. Caso¹, C. Bran², M. Vazquez², K.Y. Guslienko^{3,4} and F.G. Aliev¹ *1. Condensed Matter Physics, Universidad Autonoma de Madrid, Madrid, Spain; 2. Instituto de Ciencia de Materiales de Madrid, ES, Madrid, Spain; 3. Material Physics, Universidad del Pais Vasco, Bilbao, Spain; 4. Ikerbasque, Bilbao, Spain*
- 07-06. Terahertz Magnonics in 2D Chromium Trihalides With Atomically-Engineered Dzyaloshinskii-Moriya Interaction.**
R.M. de Menezes^{1,2}, D. Sabani¹, C. Bacaksiz¹, C. de Souza Silva² and M.V. Milošević¹ *1. Physics, Universiteit Antwerpen, Antwerpen, Belgium; 2. Physics, Universidade Federal de Pernambuco, Recife, Brazil*

- 07-07. Strain-Induced Spin-Wave Transport in 3D Magnonic Structures Based on YIG/PZT and YIG/GaAs Multilayers.** A. Sadovnikov¹, E. Beginin¹, A. Grachev¹, S. Sheshukova¹, A. Stognij³ and S. Nikitov^{1,2} *1. nonlinear physics, Saratovskij nacional'nyj issledovatel'skij gosudarstvennyj universitet imeni N G Cernysevskogo, Saratov, Russian Federation; 2. FGBUN Institut radiotekhniki i elektroniki imeni V A Kotel'nikova Rossijskoj akademii nauk, Moskva, Russian Federation; 3. NPC Belarus Material science, Minsk, Belarus*
- 07-08. Non-Reciprocal Spin Wave Propagation in Magnetic Bilayer Structures.** O. Gladii¹, R. Salikhov¹, O. Hellwig^{1,2}, J. Lindner¹ and H. Schultheiss¹ *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Physics, Technische Universitat Chemnitz, Chemnitz, Germany*
- 07-09. Spin Wave Spectral Probing of Possible Micro-States in Building Block of Macroscopically Degenerate Artificial Spin Ice.** N. Arora¹ and P. Das¹ *1. Department of Physics, Indian Institute of Technology Delhi, New Delhi, India*
- 07-10. The Formation of Waveguide Channels for Spin Waves in a Three-Dimensional Magnon Network Based on Multilayer Magnonic Crystall Arrays.** S. Odintsov¹, S. Sheshukova¹, S. Nikitov² and A. Sadovnikov¹ *1. Saratovskij nacional'nyj issledovatel'skij gosudarstvennyj universitet imeni N G Cernysevskogo, Saratov, Russian Federation; 2. FGBUN Institut radiotekhniki i elektroniki imeni V A Kotel'nikova Rossijskoj akademii nauk, Moscow, Russian Federation*
- 07-11. Strain-Tuned Reconfigurable Spin-Wave Transport in Magnonic Crystal/Piezoelectric Structure.** A. Grachev¹, E. Beginin¹ and A. Sadovnikov¹ *1. Saratov State University, Saratov, Russian Federation*
- 07-12. The Edge Effect on the Magnetic Skyrmion Motion Driving by Spin Wave.** T. Huang¹, K. Wu¹, Y. Lin¹, W. Peng¹, P. Chen¹ and M. Chen¹ *1. National Applied Research Laboratories, Hsinchu, Taiwan*
- 07-13. Interferometric Properties in Standing Spin Wave Resonance of Co₉₀Fe₁₀ and the Application as an Integrated Phase Comparator.** X. Ya¹, K. Kurihara¹, T. Tanaka¹ and K. Matsuyama¹ *1. ISEE, Kyushu University, Fukuoka, Japan*
- 07-14. Compressed Sensing for Time- and Space-Resolved Spin-Wave Propagation.** R. Kainuma¹, K. Matsumoto^{1,2} and T. Satoh¹ *1. Department of Physics, Tokyo Institute of Technology, Meguro-ku, Japan; 2. Department of Physics, Kyushu University, Fukuoka, Japan*
- 07-15. Modification of Magnon Threshold and Characteristics Using a Secondary Signal and Phase Noise.** A. Venugopal¹ and R. Victora¹ *1. Department of Electrical Engineering and Computer Science, University of Minnesota, Minneapolis, MN, United States*

- 07-16. Sub-GHz Resonant Magnetoelastic Coupling in Epitaxial Fe Thin Films.** J. Duquesne¹, P. Rovillain¹, C. Hepburn¹, M. Eddrief¹, P. Atkinson¹, A. Anane² and M. Marangolo¹
1. Institut des NanoSciences de Paris, Sorbonne Université, CNRS, UMR7588, F-75005 Paris, France, Paris, France;
2. Unité Mixte de Physique CNRS, Thales, Université Paris-Saclay, F-91767 Palaiseau, France, Palaiseau, France

FRIDAY
MORNING
6:30

LIVE Q&A 16

Session P1

BIOMEDICAL APPLICATIONS III - IMAGING AND DIAGNOSTIC SENSING

Pilar Marin, Co-Chair

Universidad Complutense de Madrid, Madrid, Spain

Jonathan Leliaert, Co-Chair

Ghent University, Ghent, Belgium

- P1-01. Controlling Exotic Molecular Spins Toward Next-Generation MRI Probes. (Invited)** J. Zadrozny¹, T. Ozvat¹, A. Campanella¹, M. Broussard¹ and M. Mignard¹ *1. Chemistry, Colorado State University, Fort Collins, CO, United States*
- P1-02. Superparamagnetic Particles as MRI Temperature Contrast Agent.** J.H. Hankiewicz¹, J. Stroud¹, R. Camley¹, S.E. Russek², D. Lachowicz³, A. Kmita³, M. Gajewska³, E. Trynkiewicz³, R. Wirecka³, M. Przybylski³, G. Parigi⁴ and Z. Celinski¹
1. Center for BioFrontiers, University of Colorado, Colorado Springs, CO, United States; 2. National Institute of Standards and Technology, Boulder, CO, United States; 3. Academic Centre for Materials and Nanotechnology, AGH University of Science and Technology, Krakow, Poland; 4. University of Florence, Florence, Italy
- P1-03. Development of Biocompatible Ferrite Particles for Magnetic Resonance Imaging.** J. Stroud¹, J.H. Hankiewicz², N. Alghamdi¹, T. Read², P. Bilski³, K. Klodowski⁴, J. Brown⁵, M. Przybylski^{6,7} and Z. Celinski¹ *1. Physics, University of Colorado at Colorado Springs, Colorado Springs, CO, United States; 2. Biofrontiers, University of Colorado at Colorado Springs, Colorado Springs, CO, United States; 3. Physics, Uniwersytet im Adama Mickiewicza w Poznaniu, Poznan, Poland; 4. Medical Physics and Biophysics, Akademia Gorniczo-Hutnicza imienia Stanislaw Staszica w Krakowie, Krakow, Poland; 5. Skaggs School of Pharmacy and Pharmaceutical Sciences, University of Colorado Denver - Anschutz Medical Campus, Aurora, CO, United States; 6. Academic Centre for Materials and Nanotechnology, Akademia Gorniczo-Hutnicza imienia Stanislaw Staszica w Krakowie, Krakow, Poland; 7. Physics and Applied Computer Science, Akademia Gorniczo-Hutnicza imienia Stanislaw Staszica w Krakowie, Krakow, Poland*

- P1-04. Signal to Noise Ratio of Single Domain Nanomagnet Amplification of Nuclear Magnetic Resonance Signals at Ambient Temperature.** *M. Rajib*¹, *T. Kaiser*¹, *M. Barbic*², *H. ElBidweihy*³ and *J. Atulasimha*¹ *1. Mechanical and Nuclear Engineering Department, Virginia Commonwealth University, Richmond, VA, United States; 2. Applied Physics and Instrumentation Group, Howard Hughes Medical Institute, Janelia Research Campus, Ashburn, VA, United States; 3. Electrical and Computer Engineering, United States Naval Academy, Annapolis, MD, United States*
- P1-05. Rapid Diagnostic Tests With Magnetic Particles as Mediators for Inductive Sensing.** *M. Salvador*^{1,2}, *Á. Gallo-Cordova*³, *A. Moyano*^{1,4}, *J.C. Martínez-García*¹, *M.P. Morales*³ and *M. Rivas*¹ *1. Department of Physics, Universidad de Oviedo, Gijon, Spain; 2. Istituto di Struttura della Materia - Consiglio Nazionale delle Ricerche (CNR, Rome, Italy; 3. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain; 4. Department of Physical and Analytical Chemistry, University of Oviedo, Gijon, Spain*
- P1-06. Real-Time Tracking of Coronavirus Progress Using Magnetic Sensing and Machine Learning.** *K. Hwang*¹, *V. Ortiz Jimenez*¹, *Y. Pham*¹, *B. Muchharla*¹, *O. Thiabgoh*¹, *T. Eggers*¹ and *M. Phan*¹ *1. University of South Florida, Tampa, FL, United States*
- P1-07. Issues of Magnetic Particle Transport Over Patterned Magnetic Thin Film Systems for lab-on-Chips. (Invited)** *A. Ehresmann*^{1,2} *1. Faculty of Mathematics and Sciences, Institute of Physics, University of Kassel, Kassel, Germany; 2. Center for Interdisciplinary Nanostructure Science and Technology (CINSA-T), University of Kassel, Kassel, Germany*
- P1-08. Quantitative Demultiplexing Magnetically Enriched Biological Tissues.** *M. Zamani Kouhpanji*¹ and *B. Stadler*¹ *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*
- P1-09. Withdrawn**

Session P2

**MAGNETIC RECORDING VIA OPTICAL, HEAT AND
MAGNETIC EXCITATION II**

Simon Greaves, Chair
Tohoku University, Sendai, Japan

- P2-01. Resolving the Role of Magnetic Circular Dichroism in Multishot Helicity-Dependent all-Optical Switching.** *(Invited)* Y. Quessab^{2,1}, M. Deb^{2,3}, J. Gorchon², M. Hehn², G. Malinowski² and S. Mangin² *1. Department of Physics, New York University, New York, NY, United States; 2. Institut Jean-Lamour, CNRS UMR 7198, Universite de Lorraine, Nancy, France; 3. Institut fur Physik und Astronomie, Universitat Potsdam, Potsdam, Germany*
- P2-02. Templated Growth of L1₀-FePt for HAMR Media.** B. Zhou^{2,1}, C. Xu^{2,1}, B. Varaprasad^{2,3}, D.E. Laughlin^{2,1} and J. Zhu^{2,3} *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA, United States; 2. The Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA, United States; 3. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, United States*
- P2-03. Analysis of Adjacent Track Erasure for the HAMR Media.** N.A. Natekar¹ and R. Victora¹ *1. Electrical Engineering, University of Minnesota, Minneapolis, MN, United States*
- P2-04. Rotated Read Head for High Density Heat-Assisted Shingled Magnetic Recording.** W. Hsu¹ and R. Victora¹ *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States*
- P2-05. Models of Advanced Recording Systems (MARS) - a Multi-Timescale Micromagnetic Code for Granular Film Simulations.** S.E. Rannala¹, A. Meo², S. Ruta¹, R. Chantrell¹, P. Chureemart² and J. Chureemart² *1. Physics, University of York, York, United Kingdom; 2. Physics, Mahasarakham University, Mahasarakham, Thailand*
- P2-06. Hypersonic Heat-Induced Flows of Magnons Induced by Femtosecond Laser Pulses.** S. Ruta¹, Z. Fu^{1,2}, T. Ostler³, A. Kimel⁴ and R. Chantrell¹ *1. University of York, York, United Kingdom; 2. Tongji University, Shanghai, China; 3. Sheffield Hallam University, Sheffield, United Kingdom; 4. Radboud Universiteit, Nijmegen, Netherlands*
- P2-07. Energy Barrier Calculations in Multispin Systems for Magnetic Recording Purposes.** P.I. Gavriloaea¹, S. Ruta¹ and R. Chantrell¹ *1. Department of Physics, University of York, York, United Kingdom*

- P2-08. Tuneable, Perpendicular Synthetic Ferrimagnets With Negative Remanence.** *J.N. Scott*¹, W. Hendren¹, R. Bowman¹, R. Hicken², M. Dabrowski², D. Burn³, A. Frisk³ and G. van der Laan³ *1. Queen's University Belfast, Belfast, United Kingdom; 2. University of Exeter, Exeter, United Kingdom; 3. Diamond Light Source Ltd, Didcot, United Kingdom*
- P2-09. Integration of Single-Shot all-Optical Switching Tb/Co Multilayer-Based Electrodes Within Perpendicular Magnetic Tunnel Junctions. (Invited)** L. Avilés Félix¹, A. Olivier¹, Q. Li², C. Davies^{2,3}, L. Alvaro-Gomez¹, M. Rubio-Roy¹, S. Auffret¹, A. Kirilyuk³, A. Kimel², T. Rasing², R. Sousa¹, L. Buda-Prejbeanu¹, B. Dieny¹ and L. Prejbeanu¹ *1. Spintec, Univ Grenoble Alpes, CEA, CNRS, Grenoble INP, IRIG-SPINTEC, Grenoble, France; 2. Radboud University, Institute for Molecules and Materials, Nijmegen, Netherlands; 3. FELIX Laboratory, Radboud University, Nijmegen, Netherlands*
- P2-10. Layer-Selective Magnetization Reversal and Optical Switching in Ni₃Pt/Ir/Co Synthetic Ferrimagnets.** *M. Dabrowski*¹, *J.N. Scott*², *W. Hendren*², *A. Frisk*³, *D. Burn*³, *D. Newman*¹, *C. Klewe*⁴, *A.T. N'Diaye*⁴, *P. Shafer*⁴, *P.S. Keatley*¹, *T. Hesjedal*⁵, *G. van der Laan*³, *R. Bowman*² and *R. Hicken*¹ *1. Department of Physics and Astronomy, University of Exeter, Exeter, United Kingdom; 2. School of Mathematics and Physics, Queen's University Belfast, Belfast, United Kingdom; 3. Magnetic Spectroscopy Group, Diamond Light Source Ltd, Didcot, United Kingdom; 4. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 5. Department of Physics, University of Oxford, Oxford, United Kingdom*
- P2-11. Chemical Order-Disorder Transitions in Intermetallic Alloys for High-Density Magnetic Recording.** *N.I. Polushkin*¹, *T.B. Moeller*², *S.A. Bunyaev*³, *A.V. Bondarenko*³, *M. He*⁴, *M.V. Shugaev*⁴, *J. Boneberg*² and *G.N. Kakazei*³ *1. Institut fiziki mikrostruktur Rossijskoj akademii nauk, Niznij Novgorod, Russian Federation; 2. Physics, Universitat Konstanz, Konstanz, Germany; 3. Institute of Physics for Advanced Materials, Nanotechnology and Photonics (IFIMUP)/ Departamento de Física e Astronomia, Universidade do Porto, Porto, Portugal; 4. Materials Science and Engineering, University of Virginia, Charlottesville, VA, United States*

FRIDAY
MORNING
6:30

LIVE Q&A 16

Session P3 MICROMAGNETIC MODELLING II

Ali Ghoreyshi, Chair

Seagate Technology, Sain Louis Park, MN, United States

- P3-01. Macromagnetic Simulations by Micromagnetic Superposition. (Invited)** *H. Oezelt*¹, *M. Gusenbauer*¹, *P. Zhao*², *T.G. Woodcock*² and *T. Schrefl*¹ *1. Department for Integrated Sensor Systems, Danube University Krems, Wr. Neustadt, Austria; 2. Institute for Metallic Materials, IFW Dresden, Dresden, Germany*

- P3-02. High Order Methods for Computing the Demagnetization Tensor for Periodic Boundaries.** *M.J. Donahue¹ and D.G. Porter¹* 1. *Information Technology Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, United States*
- P3-03. Micromagnetic Exchange Field Calculations for Unstructured Meshes.** *E.B. Poulsen¹, A.R. Insinga¹ and R. Bjørk¹* 1. *Department of Energy Conversion and Storage, Technical University of Denmark (DTU), Kgs. Lyngby, Denmark*
- P3-04. Coarse-Graining in Micromagnetic Simulations of Dynamic Hysteresis Loops.** *R. Behbahani^{1,2}, M.L. Plumer¹ and I. Saika-Voivod^{1,2}* 1. *Physics and Physical Oceanography, Memorial University of Newfoundland, St. John's, NL, Canada;* 2. *Applied Mathematics, Western University, London, ON, Canada*
- P3-05. High-Performance Micromagnetics on GPUs for Batched Simulations.** *X. Wang¹ and V. Lomakin¹* 1. *University of California San Diego, La Jolla, CA, United States*
- P3-06. Introducing Flatspin: Enabling Large Scale Dynamical Artificial Spin Ice Simulations.** *J.H. Jensen¹, A. Strömberg², O. Lykkebo¹, A. Penty¹, M. Sjölander¹, E. Folven² and G. Tufte¹* 1. *Department of Computer Science, Norges teknisk-naturvitenskapelige universitet, Trondheim, Norway;* 2. *Department of Electronic Systems, Norges teknisk-naturvitenskapelige universitet, Trondheim, Norway*
- P3-07. Magnetic Barkhausen Noise: a Simulation Tool.** *P. Fagan^{1,2}, B. Ducharne², L. DANIEL³ and A. SKARLATOS¹* 1. *CEA – DISC, CEA-LIST, CEA Saclay DIGITEO LABS, Gif-sur-yvette, France;* 2. *Institut National des Sciences Appliquées de Lyon, Villeurbanne, France;* 3. *Université Paris-Saclay, CentraleSupélec, CNRS, Group of Electrical Engineering-Paris (GeePs), Gif-sur-yvette, France*
- P3-08. Thermal Activation Barriers for Creation and Annihilation of Magnetic Droplet Solitons in the Presence of Spin Transfer Torque.** *G.D. Chaves¹ and D.L. Stein^{2,3}* 1. *Department of Thin Films, Polska Akademia Nauk Instytut Fizyki Molekularnej, Poznan, Poland;* 2. *Department of Physics and Courant Institute of Mathematical Sciences, New York University, New York, NY, United States;* 3. *Santa Fe Institute, Santa Fe, NM, United States*
- P3-09. Theoretical Study of Current Induced Domain Wall Motion in Magnetic Nanotubes With Azimuthal Magnetization.** *J. Hurst¹, A. De Riz¹, O. Fruchart¹, J. Toussaint² and D. Gusakova¹* 1. *Univ. Grenoble Alpes, CNRS, CEA, Grenoble INP**, Spintec, F-38000, Grenoble, France, Grenoble, France;* 2. *Univ. Grenoble Alpes, CNRS, Institut NEEL, Grenoble, France*
- P3-10. Exchange Explosions of Topological Edge Defects in a Square Micromagnet.** *S. Sløetjes¹, E. Folven² and J.K. Grepstad²* 1. *Physics and Astronomy, Uppsala Universitet, Uppsala, Sweden;* 2. *Department of Electronic Systems, Norges teknisk-naturvitenskapelige universitet, Trondheim, Norway*

- P3-11. Exploring Coercivity as a Function of Boundary Conditions in Simulated Nanochessboard Colonies: Free Surface, Semi-Infinite Single Crystal, and Intra-Colony Conditions.** *A. Savovici*¹, *Y. Jin*², *W.A. Soffa*¹ and *J.A. Floro*¹ *1. Materials Science Department, University of Virginia, Charlottesville, VA, United States; 2. Materials Science Department, Michigan Technological University, Houghton, MI, United States*
- P3-12. Magnetization Reversal of FePt Thin Films: Experiments and Simulations.** *A. Román*¹, *J. Gómez*², *A. Butera*², *K. Bouzehouane*^{3,4}, *C. García*⁵ and *L. Steren*¹ *1. Laboratorio de Nanoestructuras Magnéticas y Dispositivos, Instituto de Nanociencia y Nanotecnología CNEA-CONICET, San Martín, Argentina; 2. Centro Atómico Bariloche, Bariloche, Argentina; 3. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 4. Univ. Paris-Sud/Université Paris-Saclay, Palaiseau, France; 5. Universidad Técnica Federico Santa María, Departamento de Física & Centro Científico Tecnológico de Valparaíso-CCTVal, Valparaíso, Chile*

FRIDAY
MORNING
6:30

LIVE Q&A 16

Session P4
ANTIFERROMAGNETIC SPINTRONICS IV
(Poster Session)

Romain Lebrun, Chair
Unité Mixte de Physique CNRS/Thales, Palaiseau, France

P4-01. Withdrawn

P4-02. Withdrawn

P4-03. Spatial Oscillations of the Spin Transfer Torque in Ferrimagnetic MTJs From First Principles. *M.T. Stamenova*¹, *P.S. Stamenov*¹, *Q. Sun*², *N. Kioussis*² and *S. Sanvito*¹ *1. School of Physics and CRANN, University of Dublin Trinity College, Dublin, Ireland; 2. W. M. Keck Computational Materials Theory Center, California State University, Northridge, Northridge, CA, United States*

P4-04. Withdrawn

P4-05. Sputtering Growth of Non-Collinear Antiferromagnetic Mn₃Sn Thin Films. *V. Kalappattil*¹, *G. Street*¹ and *M. Wu*¹ *1. Department of Physics, Colorado State University, Fort Collins, CO, United States*

P4-06. Electrical Switching of Hall Resistance in Noncollinear Antiferromagnetic Antiperovskite Nitrides. *K. Matsuura*¹, *T. Hajiri*¹, *K. Sonoda*¹, *S. Ishino*¹ and *H. Asano*¹ *1. Nagoya Daigaku, Nagoya, Japan*

- P4-07. Quantifying Current-Induced Torques Leading to Néel Vector Switching in CoO/Pt Bilayers.** L. Baldrati¹, C. Schmitt¹, O. Gomonay¹, R. Lebrun¹, R. Ramos², E. Saitoh^{2,3}, J. Sinova^{1,4} and M. Klau^{1,5} *1. Johannes Gutenberg Universität Mainz, Mainz, Germany; 2. Tohoku Daigaku, Sendai, Japan; 3. Tokyo Daigaku, Bunkyo-ku, Japan; 4. Akademie věd České republiky, Praha, Czechia; 5. Johannes Gutenberg University Mainz Graduate School of Excellence Materials Science in Mainz, Mainz, Germany*
- P4-08. Antiferromagnetic Moments Switching Induced by a Topological Insulator.** X. Chen¹, C. Song¹, X. Kou² and F. Pan¹ *1. Tsinghua University, Beijing, China; 2. Shanghai Tech University, Shanghai, China*
- P4-09. Magnon Landau Levels and Topological Spin Responses in Antiferromagnets.** A.A. Kovalev¹ and B. Li¹ *1. University of Nebraska-Lincoln, Lincoln, NE, United States*
- P4-10. Withdrawn**
- P4-11. Spin-Transfer Torque Oscillator Based on Composite Synthetic Antiferromagnets.** I. Volvach¹, A.D. Kent³, E. Fullerton⁴ and V. Lomakin² *1. Material Science and Engineering, University of California San Diego, La Jolla, CA, United States; 2. Electrical & Computer Engineering, University of California San Diego, La Jolla, CA, United States; 3. Department of Physics, New York University, New York, NY, United States; 4. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA, United States*
- P4-12. Current Induced out-of-Plane Spin Accumulation on IrMn₃(001) Antiferromagnet.** Y. Liu¹, Y. Liu¹, P. He¹, K. Teo¹, T. Phung², S. Yang² and H. Yang¹ *1. National University of Singapore, Singapore, Singapore; 2. IBM Research - Almaden, San Jose, CA, United States*
- P4-13. Spin Transport Experiments in the Easy-Plane Phase of the Antiferromagnetic Insulator Hematite.** T. Wimmer^{1,2}, J. Gueckelhorn^{1,2}, M. Opel¹, S. Geprägs¹, H. Huebl^{1,2}, R. Gross^{1,2} and M. Althammer^{1,2} *1. Magnetism and Spintronics Group, Walther-Meißner-Institut, Garching, Germany; 2. Physik Department, Technische Universität München, Garching, Germany*
- P4-14. Withdrawn**

Session P5
MULTIFERROIC MATERIALS AND
HETERO-STRUCTURES II
(Poster Session)

Ales Hrabec, Chair
ETH Zurich, Villigen, Switzerland

- P5-01. Application of Bayesian Optimization to Ferroic Materials Development.** *A.R. Will-Cole², A.G. Kusne¹, P. Tonner¹, X. Liang², C. Dong², Y. Wei², H. Chen² and N.X. Sun²*
1. National Institute of Standards and Technology, Gaithersburg, MD, United States; 2. Electrical Engineering, Northeastern University, Boston, MA, United States
- P5-02. Free Layer Magnetic Anisotropy Control in the Multiferroic Tunnel Junction: a Computational Study on Materials Interfaces.** *A.P. Chen^{1,2}, W. Lin², J. Chen² and Y.P. Feng²*
1. Case Western Reserve University, Cleveland, OH, United States; 2. National University of Singapore, Singapore, Singapore
- P5-03. New Optical Approach for Development of Straintronics.** *A. Telegin¹, V.A. Bessonova¹, Y.P. Sukhorukov¹ and A.P. Nossov¹* *1. magnetic semiconductors, M.N. Miheev Institute of Metal Physics UB of RAS, Yekaterinburg, Russian Federation*
- P5-04. Magnetic Structure at Perovskite/Antiperovskite Interface.** *J. Zemen¹ and O. Heczko^{2,1}* *1. Faculty of Electrical Engineering, Czech Technical University in Prague, Praha, Czechia; 2. Magnetic Measurement and Materials, Institute of Physics CAS, Prague, Czechia*
- P5-05. The Role of Electroacoustic Magnons in Enhancing Magnetoelectric Responses.** *S. Sayedaghaee^{1,2}, C. Paillard³, S. Prosandeev¹, B. Xu⁴ and L. Bellaiche¹* *1. Physics Department and Institute for Nanoscience and Engineering, University of Arkansas Fayetteville, Fayetteville, AR, United States; 2. Microelectronics-Photonics Program, University of Arkansas Fayetteville, Fayetteville, AR, United States; 3. CentraleSupélec, Structures Propriétés et Modélisation des Solides, Gif-sur-Yvette, France; 4. School of Physical Science and Technology, Soochow University, Suzhou, China*
- P5-06. Magnetoelectric Coupling and Decoupling in Multiferroic Hexagonal YbFeO₃ Thin Films.** *X. Li¹, Y. Yun¹ and X. Xu^{1,2}*
1. Department of Physics and Astronomy, University of Nebraska, Lincoln, Lincoln, NE, United States; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, Lincoln, NE, United States
- P5-07. Microscopic Theory of Spin Driven Electric Polarization in Lacunar Spinel GaV₄S₈ and GaMo₄S₈.** *S.A. Nikolaev¹ and I. Solovyev²* *1. Tokyo Kogyo Daigaku, Meguro-ku, Japan; 2. Busshitsu Zairyo Kenkyu Kiko Kokusai Nanoarchitectonics Kenkyu Kyoten, Tsukuba, Japan*

P5-08. **Withdrawn**

P5-09. **Morphotropic BiFeO₃-PbTiO₃: Effect of La³⁺ Substitution.** R. Payyadi Porayil¹, A. Swain¹, V. Subramanian¹ and M. Rao¹
1. Indian Institute of Technology, Madras, Chennai, India

P5-10. **Jahn-Teller Distortions in (Co_{1-x}Cu_x)Cr₂O₄ (x = 0.5, 0.25) Nanoparticles: Structural, Magnetic and Electronic Properties.** P. Mohanty¹, C. Sheppard¹, B. Doyle¹, E. Carleschi¹ and A. Prinsloo¹ *1. Physics, University of Johannesburg, Auckland Park, South Africa*

P5-11. **Materials Characterization and Multiferroic Properties Optimization of Magnetolectric Composites Based on Sintered Cobalt Ferrite/Barium Titanate Nanoparticles.** F. Safi Samghabadi¹, M. Khodadadi^{1,2}, L. Chang^{3,2} and D. Litvinov^{3,1} *1. Materials Science and Engineering, University of Houston, Houston, TX, United States; 2. Center for Integrated Bio and Nano Systems, University of Houston, Houston, TX, United States; 3. Electrical and Computer Engineering, University of Houston, Houston, TX, United States*

P5-12. **Study of Ferromagnetic Resonance of Micro and Nano Size Barium Ferrite Powders.** W. Quan¹ and M.N. Afsar¹ *1. Tufts University, Medford, MA, United States*

P5-13. **Withdrawn**

P5-14. **Controlling Magnetic Properties of Epitaxial Nanocomposite Thin Films Through Ionic Liquid Gating.** S. Ning¹, E. Cho¹ and C. Ross¹ *1. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States*

FRIDAY
MORNING
6:30

LIVE Q&A 16

Session P6
SPIN HALL AND RELATED EFFECTS II
(Poster Session)

Shu Zhang, Co-Chair
University of California, Los Angeles, Los Angeles, CA, United States
Tao Zhu, Co-Chair
Institute of Physics, Chinese Academy of Sciences, Beijing, China

P6-01. **Large Field Like Torque in Amorphous Ru₂Sn₃ Originated From Intrinsic Spin Hall Effect.** T. Peterson¹, M. DC², Y. Fan¹, J. Chen¹, D. Zhang¹, H. Li¹, P. Swatek¹ and J. Wang¹
1. University of Minnesota, Minneapolis, MN, United States; 2. Stanford University, Stanford, CA, United States

P6-02. **Spin Pumping and Anti-Damping in Trilayer Structures.** P. Gupta¹, A. Kumar¹, K. Khan¹, N. Chowdhury¹ and P.K. Muduli¹ *1. Department of Physics, Indian Institute of Technology Delhi, New Delhi, India*

- P6-03. Unusual Electronic Transport Properties of Sputter-Deposited $\text{Co}_{25}\text{Fe}_{75}$ /Pt Based Heterostructured Thin Film Sample.** H. Saren¹, Y. Kumar¹, A. Deka², Y. Fukuma², H. Asada³ and P. Das¹ *1. Physics, Indian Institute of Technology Delhi, New Delhi, India; 2. Computer Science and Electronics, Kyushu Institute of Technology, Iizuka, Japan, Iizuka, Japan; 3. Graduate School of Science and Engineering, Yamaguchi University, Ube, Japan*
- P6-04. Angle Dependent Magnetoresistance in EuO_{1-x} Thin Films.** N. Shrestha¹ and J. Tang¹ *1. Department of Physics and Astronomy, University of Wyoming, Laramie, WY, United States*
- P6-05. Withdrawn**
- P6-06. Spin-Orbit Torque Induced Switching in CoFeB and β -W Bilayer With a 1 nm Ta Insert Layer.** S. Allen², A.J. Narasimham¹, M. Zhu³, A. Diebold³, V.P. LaBella³ and P. Dhagat² *1. College of Nanoscale Science and Engineering, State University of New York, Albany, NY, United States; 2. Electrical Engineering, Oregon State University, Corvallis, OR, United States; 3. SUNY PI, State University of New York, Albany, NY, United States*
- P6-07. Study of Magnetic Field Dependence of Hall Effect in FeB and FeCoB Nanomagnets. an Evidence of Contribution of Inverse Spin Hall Effect.** V. Zayets¹ and A.S. Mishchenko² *1. Research Institute for Advanced Electronics and Photonics, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 2. Center for Emergent Matter Science, RIKEN, Wako, Japan*
- P6-08. Enhancements of the Spin Seebeck Effect Owing to the Bismuth-Substitution in Thermoelectric Generators Comprising an LPE Bi-Substituted YIG Film.** M. Imamura¹, H. Asada², D. Tashima¹ and J. Kitagawa¹ *1. Fukuoka Inst. of Tech., Fukuoka, Japan; 2. Yamaguchi Univ., Ube, Japan*
- P6-09. Spin Transport Property in Thermally-Evaporated Pigment-Red Films by Using a Dynamical Spin Injection Method.** K. Nishida¹, Y. Teki¹ and E. Shikoh¹ *1. Osaka City University, Osaka, Japan*
- P6-10. Spin Injection Into Vanadium Dioxide Films From a Typical Ferromagnetic Metal, Across the Metal-Insulator Transition of the Vanadium Dioxide Films.** K. Tamura¹, T. Kanki², S. Shirai¹, H. Tanaka², Y. Teki¹ and E. Shikoh¹ *1. Osaka City University, Osaka, Japan; 2. Osaka University, Osaka, Japan*
- P6-11. Flat and Highly (100) Texture of MgO Tunnel Barrier and W/Hf Thickness Ratio Dependence in MgO/CoFeB/(W/Hf)-Multilayer Large Spin Hall Effect Electrode System.** Y. Saito¹, N. Tezuka², S. Ikeda¹ and T. Endoh¹ *1. Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Japan; 2. Department of Materials Science, Graduate School of Engineering, Tohoku University, Sendai, Japan*
- P6-12. Influence of Ferromagnetic-Layer Thickness on Dynamical Spin Injection.** S. Obinata¹, K. Miyazaki¹, K. Ohnishi¹ and T. Kimura¹ *1. Dept of Physics, Kyushu University, Fukuoka, Japan*

- P6-13. Optical Method of Determining Spin Diffusion Length of Ferromagnetic Metals.** *K. Ko*¹ and *G. Choi*^{1,2} *1. Department of Energy Science, Sungkyunkwan University, Suwon, The Republic of Korea; 2. Center for Integrated Nanostructure Physics, Institute for Basic Science (IBS), Suwon, The Republic of Korea*
- P6-14. Voltage Control of Magnetic Proximity Effect and Anomalous Hall Effect in CoFe₂O₄/Pt Bilayer by Ionic Liquid Gating.** *S. Noda*¹, *S. Ono*², *T. Yanase*³, *T. Shimada*³ and *T. Nagahama*³ *1. Hokkaido University, Graduate School of Chemical Sciences and Engineering, Sapporo, Japan; 2. Central Research Institute of Electric Power Industry, Yokosuka, Japan; 3. Hokkaido University, Graduate School of Engineering, Sapporo, Japan*
- P6-15. Effects of a Molecular Interfaces on the Spin Hall Magnetoresistance for YIG/Pt and YIG/Ta.** *S. Alotibi*¹ *1. University of Leeds, Leeds, United Kingdom*
- P6-16. Negative Spin Hall Angle and Large Spin-Charge Conversion in Thermally-Evaporated Chromium Thin Films.** *S.M. Bleser*¹, *R.W. Greening*¹, *M. Roos*¹, *X. Fan*¹ and *B.L. Zink*¹ *1. Physics and Astronomy, University of Denver, Denver, CO, United States*

FRIDAY
MORNING
9:00

SYMPOSIA

Session S8

NOVEL APPROACHES TO THE EXCITATION AND CONTROL OF NANO-SCALE PROPAGATING SPIN WAVES

Johan Åkerman, Chair
University of Gothenburg, Göteborg, Sweden

9:00

- S8-01. Control of Nonlinear Damping and Excitation of Spin Waves by Spin-Orbit Torque in Systems With Perpendicular Magnetic Anisotropy. (Invited)** *V.E. Demidov*¹, *B. Divinskiy*¹, *M. Evelt*¹, *S. Demokritov*¹, *S. Urazhdin*², *L. Soumah*³, *V. Cros*³, *j. ben youssef*⁴, *G. de loubens*⁵, *O. Klein*⁶, *B. Paolo*³ and *A. Anane*³ *1. Westfälische Wilhelms-Universität Munster, Munster, Germany; 2. Emory University, Atlanta, GA, United States; 3. Unite Mixte CNRS/Thales, Palaiseau, France; 4. Université de Bretagne Occidentale, Brest, France; 5. SPEC, CEA-Saclay, CNRS, Université Paris-Saclay, Gif-sur-Yvette, France; 6. SPINTEC, CEA-Grenoble, CNRS and Université Grenoble Alpes, Grenoble, France*

- S8-02. Robust Voltage-Control of Damping, Threshold Current, and Frequency in Spin Hall Nano-Oscillators. (Invited)** *H. Fulara*¹, *M. Zahedinejad*¹, *R. Khymyn*¹, *M. Dvornik*¹, *S. Fukami*², *S. Kanai*², *H. Ohno*² and *J. Åkerman*¹ *1. Physics, University of Gothenburg, Gothenburg, Sweden; 2. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

10:12

- S8-03. Spin-Wave Data Processing in YIG Nanostructures. (Invited)** *A. Chumak*¹ *1. Faculty of Physics, University of Vienna, Vienna, Austria*

10:48

- S8-04. Magnetic Excitations in a two-Dimensional Honeycomb Magnet CrI₃. (Invited)** *L. Zhao*¹ *1. Physics, University of Michigan, Ann Arbor, MI, United States*

11:24

- S8-05. Spin Textures as Coherent Excitation Sources for Ultrashort Spin Waves. (Invited)** *S. Wintz*^{1,2} *1. Max-Planck-Institut für Intelligente Systeme, Stuttgart, Germany; 2. Paul Scherrer Institut, Villigen PSI, Switzerland*

FRIDAY
MORNING
12:00

LIVE Q&A 17

Session Q1

HARD MAGNETIC MATERIALS: RARE-EARTH-FREE

Jeotikanta Mohapatra, Chair

University of Texas at Arlington, Arlington, TX, United States

- Q1-01. First-Principles Investigation of the Impact of Chemical Order on the Magneto-Crystalline Anisotropy in L1₀ FeNi (Tetrataenite).** *A. Izardar*¹ and *C. Ederer*¹ *1. Eidgenössische Technische Hochschule Zurich, Zurich, Switzerland*
- Q1-02. Extrusion Based 3D Printing of Partially Transformed Fe₁₆N₂/Fe Flakes Into Permanent Magnet.** *O. Zirhli*¹, *N. Gunduz Akdogan*², *Y.N. Odeh*³, *I. Misirlioglu*¹, *E. Devlin*⁴ and *O. Akdogan*⁵ *1. Materials Science and Nano Engineering, Sabanci Universitesi, Istanbul, Turkey; 2. Ship Construction, Piri Reis Universitesi, Istanbul, Turkey; 3. Faculty of Engineering and Natural Sciences, Bahcesehir Universitesi, Istanbul, Turkey; 4. Institute of Nanoscience and Nanotechnology, Ethniko Kentro Ereunas Physikou Epistemon 'Demokritos' Tomeas Epistemes Ylikon, Athens, Greece; 5. Mechatronics Engineering, Bahcesehir Universitesi, Istanbul, Turkey*
- Q1-03. Withdrawn**

- Q1-04. Novel Database Driven Method for Discovering New Co-Based Ferromagnets. (Invited)** J.K. Byland¹, S. Ding¹, Y. Shi¹, R. Mata¹, P. Klavins¹ and V. Taufour¹ *1. Physics and Astronomy, University of California, Davis, Davis, CA, United States*
- Q1-05. Investigation of Magnetic and Electromagnetic Properties of Cobalt Substituted M-Type Barium Hexaferrite in X-Band.** K. Rana¹, V. Gupta², M. Tomar² and A. Thakur^{1,3} *1. Innovative Science Research Society, Shimla, India; 2. Department of Physics & Astrophysics, University of Delhi, New Delhi, India; 3. Nanotechnology, Amity University Gurgaon, Gurgaon, India*
- Q1-06. Formation and Magnetic Properties of τ -MnAlC Synthesized by Spark Plasma Sintering Process.** F. Maccari¹, A. Aubert¹, S. Ener¹, I. Radulov¹, K. Skokov¹ and O. Gutfleisch¹ *1. Technische Universitat Darmstadt Fachbereich Material- und Geowissenschaften, Darmstadt, Germany*
- Q1-07. Recent Progress in the Development of MnAl-C Magnets.** T.G. Woodcock¹ *1. Leibniz IFW Dresden, Dresden, Germany*
- Q1-08. Rare-Earth-Free MnAl-C-Ni Permanent Magnets With State-of-the-Art Properties, Produced by Extrusion of Milled Powder.** L. Feng^{1,2}, J. Freudenberger^{1,3}, T. Mix¹, K. Nielsch^{1,2} and T.G. Woodcock¹ *1. Leibniz IFW Dresden, Dresden, Germany; 2. Institute of Materials Science, Technische Universitat Dresden, Dresden, Germany; 3. Institute of Materials Science, Technische Universitat Bergakademie Freiberg, Freiberg, Germany*
- Q1-09. Novel Ferrite Materials Possessing Record Magnetic Hardness.** E. Gorbachev^{4,2}, L.A. Trusov¹, A.E. Sleptsova⁴, E.S. Kozlyakova³, L.N. Alyabyeva⁵, M.A. Karpov¹, B.P. Gorshunov⁵, A.S. Prokhorov^{5,6} and P.E. Kazin¹ *1. Department of Chemistry, Moskovskij gosudarstvennyj universitet imeni M V Lomonosova, Moscow, Russian Federation; 2. Energy Storage, Skolkovskij institut nauki i tehnologij, Skolkovo, Russian Federation; 3. Department of Physics, Moskovskij gosudarstvennyj universitet imeni M V Lomonosova, Moscow, Russian Federation; 4. Department of Materials Science, Moskovskij gosudarstvennyj universitet imeni M V Lomonosova, Moscow, Russian Federation; 5. Moskovskij fiziko-tehniceskij institut, Dolgoprudnyj, Russian Federation; 6. Institut obsej fiziki imeni A M Prohorova RAN, Moscow, Russian Federation*
- Q1-10. Modern FORC Data Analysis and Interpretation Approaches. (Invited)** J. Gräfe¹, F. Gross¹, J.C. Martínez-García², E. Goering¹ and M. Rivas² *1. Max-Planck-Institut fur Intelligente Systeme, Stuttgart, Germany; 2. Universidad de Oviedo, Gijon, Spain*
- Q1-11. Hard Magnetic Properties of FeCoNiAlCu_xTi_x Based High Entropy Alloys.** S. Na¹, P.K. Lambert¹ and N.J. Jones¹ *1. Physical Metallurgy and Fire Performance Branch, Naval Surface Warfare Center, Carderock Division, West Bethesda, MD, United States*

- Q1-12. Sub-20nm Rare-Earth Free Ferrimagnetic Films Fabricated by Reactive Sputtering.** *W. Zhou*¹, *T. Hartnett*², *P. Balachandran*² and *J. Poon*¹ *1. Physics, University of Virginia, Charlottesville, VA, United States; 2. Material science, University of Virginia, Charlottesville, VA, United States*

FRIDAY
MORNING
12:00

LIVE Q&A 17

Session Q2

MAGNETIZATION DYNAMICS AND DAMPING V: MAGNETIZATION DYNAMICS

Benjamin Ducharne, Chair
Institut National des Sciences Appliquees de Lyon,
Villeurbanne, France

- Q2-01. Resonant Coupling Between Magnetic Layers by Acoustic Phonons.** *K. An*¹, *R. Kohn*¹, *A. Litvinenko*¹, *v.v. naletov*^{1,7}, *L. Vila*¹, *G. de loubens*², *j. ben youssef*³, *n. vukadinovic*⁴, *G. Bauer*⁵, *A.N. Slavin*⁶, *V. Tyberkevych*⁶ and *O. Klein*¹ *1. Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, INAC-Spintec, Grenoble, France; 2. SPEC, CEA-Saclay, CNRS, Université Paris-Saclay, Gif-sur-Yvette, France; 3. LabSTICC, CNRS, Université de Bretagne Occidentale, Brest, France; 4. Dassault Aviation, Saint-Cloud, France; 5. Institute for Materials Research and WPI-AIMR and CSRN, Tohoku University, Sendai, Japan; 6. Department of Physics, Oakland University, Rochester, MI, United States; 7. Kazan Federal University Institute of Physics, Tatarstan, Kazan, Russian Federation*
- Q2-02. Parametric Amplification of Magnons in Synthetic Antiferromagnets.** *A. Kamimaki*^{1,2}, *S. Iihama*^{2,3}, *K. Suzuki*^{2,3}, *N. Yoshinaga*^{4,2} and *S. Mizukami*^{2,3} *1. Department of Applied Physics, Tohoku University, Sendai, Japan; 2. WPI-AIMR, Tohoku University, Sendai, Japan; 3. CSRN, Tohoku University, Sendai, Japan; 4. MathAM-OIL, AIST, Sendai, Japan*
- Q2-03. Latent State in Time-Resolved Nonlinear Magnon Scattering in Thin Films.** *T. Qu*¹, *A. Hamill*¹, *A. Venugopal*¹, *J.J. Etheridge*¹, *P.A. Crowell*¹ and *R. Victora*¹ *1. University of Minnesota, Minneapolis, MN, United States*
- Q2-04. Discrepancy Between Constraining and Effective Fields in Ab-Initio Spin Dynamics.** *S. Streib*¹, *V. Borisov*¹, *M. Pereiro*¹, *A. Bergman*¹, *E. Sjöqvist*¹, *A. Delin*^{2,3}, *O. Eriksson*^{1,4} and *D. Thonig*^{4,1} *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. Department of Applied Physics, KTH Royal Institute of Technology, Stockholm, Sweden; 3. Swedish e-Science Research Center (SeRC), KTH Royal Institute of Technology, Stockholm, Sweden; 4. School of Science and Technology, Örebro University, Örebro, Sweden*

- Q2-05. Fractional Equation for the Anomalous Magnetic Diffusion in Ferromagnetic Materials.** *B. Ducharne*¹, *Y. Tene Deffo*², *P. Tsafack*², *B. Zhang*³ and *G. Sebald*⁴ *1. Laboratoire de Génie Electrique et Ferroélectricité – INSA de Lyon, Villeurbanne, France; 2. Faculty of Engineering and Technology, University of Buea, Buea, Cameroon; 3. Green Manufacturing R&D Laboratory, School of Mechanical, Electrical and Information Engineering, Shandong University, Weihai, China; 4. ELYTMax UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Sendai, Japan*
- Q2-06. Withdrawn**
- Q2-07. Magnon Mediated Coherent Information Manipulation and Processing. (Invited)** *C.A. Trevillian*¹ and *V. Tyberkevych*¹ *1. Physics, Oakland University, Rochester, MI, United States*
- Q2-08. Spin Dynamics and Relaxation in Thin Film La_{0.7}Sr_{0.3}MnO₃/SrTiO₃: ac Magnetic Susceptibility and Magnetic Viscosity Investigations.** *N. Mottaghi*¹, *M.S. Seehra*¹, *J. Shi*³, *M. Jain*² and *M.B. Holcomb*¹ *1. Physics and Astronomy, West Virginia University, Morgantown, WV, United States; 2. Institute of Materials Science & Department of Physics, University of Connecticut, Storrs, Storrs, CT, United States; 3. Department of Materials Science and Engineering, University of Connecticut, Storrs, CT, United States*
- Q2-09. Thermodynamics of Interacting Magnetic Nanoparticles.** *P. Torche*¹, *D. Serantes*², *D. Baldomir*², *K. Livesey*³, *O. Chubykalo-Fesenko*⁴, *S. Ruta*⁵, *R. Chantrell*⁵ and *O. Hovorka*¹ *1. University of Southampton, Southampton, United Kingdom; 2. University of Santiago de Compostela, Santiago de Compostela, Spain; 3. University of Colorado at Colorado Springs, Colorado Springs, CO, United States; 4. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain; 5. University of York, York, United Kingdom*
- Q2-10. Disentangling Local Heat Contributions in Interacting Magnetic Nanoparticles.** *C. Munoz-Menendez*^{1,2}, *D. Serantes*^{1,2}, *O. Chubykalo-Fesenko*³, *S. Ruta*⁴, *O. Hovorka*⁵, *P. Nieves*⁶, *K. Livesey*⁷, *D. Baldomir*^{1,2} and *R. Chantrell*⁴ *1. Applied Physics, Universidade de Santiago de Compostela, Santiago de Compostela, Spain; 2. Instituto de Investigaciones Tecnológicas, Universidade de Santiago de Compostela, Santiago de Compostela, Spain; 3. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain; 4. Physics, University of York, York, United Kingdom; 5. University of Southampton Faculty of Engineering and the Environment, Southampton, United Kingdom; 6. Technical University of Ostrava, Ostrava-Poruba, Czechia; 7. University of Colorado at Colorado Springs, Colorado Springs, CO, United States*
- Q2-11. Tuning the Dynamics in Fe₃O₄ Nanoparticles for Hyperthermia Optimization.** *H. Chen*¹, *D. Billington*², *E. Riordan*², *J. Blomgren*³, *S. Giblin*², *C. Johansson*³ and *S. Majetich*¹ *1. Physics, Carnegie Mellon University, Pittsburgh, PA, United States; 2. Cardiff University, Cardiff, United Kingdom; 3. RISE Research Institutes of Sweden, Göteborg, Sweden*

Session Q3
**NEUROMORPHIC COMPUTING WITH SPIN-TORQUE
OSCILLATORS**

Danijela Marković, Chair
CNRS, University of Paris-Sud, Paris, France

- Q3-01. Dynamic Effects of Exchange Inertia in Artificial Neural Networks Based on Antiferromagnetic Oscillators.** *H. Bradley*¹ and *V. Tyberkevych*¹ *1. Department of Physics, Oakland University, Rochester, MI, United States*
- Q3-02. Memristive Functionality of a Thin-Film Ferromagnet/Antiferromagnet Bilayer.** *S. Ivanov*¹ and *S. Urazhdin*¹ *1. Department of Physics, Emory University, Atlanta, GA, United States*
- Q3-03. Ideal Memristor Based on Viscous Magnetization Dynamics Driven by Spin Torque.** *G. Chen*¹, *S. Ivanov*¹ and *S. Urazhdin*¹ *1. physics, Emory University, Atlanta, GA, United States*
- Q3-04. 2D Mutually Synchronized Spin Hall Nano-Oscillator Networks for Neuromorphic Computing. (Invited)** *M. Zahedinejad*¹, *A.A. Awad*¹, *S. Muralidhar*¹, *A. Houshang*¹, *R. Khymyn*¹, *H. Fulara*¹, *M. Dvornik*¹ and *J. Åkerman*¹ *1. Department of Physics, University of Gothenburg, Goteborg, Sweden*
- Q3-05. Withdrawn**
- Q3-06. Radio-Frequency Synapses for Neural Networks Made of Spin-Torque Nano-Oscillators.** *N. Leroux*¹, *D. Marković*¹, *J. Laydevant*¹, *M. Ernoult*^{1,3}, *J. Trastoy*¹, *E. Martin*¹, *T. Petrisor*¹, *L. Martins*², *A. Jenkins*², *R. Ferreira*², *D. Querlioz*³, *A. Mizrahi*¹ and *J. Grollier*¹ *1. Unite Mixte de Physique CNRS/Thales, Palaiseau, France; 2. International Iberian Nanotechnology Laboratory, Braga, Portugal; 3. Centre de Nanosciences et de Nanotechnologies, Orsay, France*
- Q3-07. Uniform Mode Spin Hall Nano-Oscillator Array Based Scalable Learning of Classification Tasks Using Different Machine Learning Datasets.** *U. Singh*¹, *S. Kumar*², *N. Garg*³, *P.K. Muduli*³ and *D. Bhowmik*² *1. Department of Electronics and Communication Engineering, Delhi Technological University, Delhi, India; 2. Department of Electrical Engineering, Indian Institute of Technology Delhi, New Delhi, India; 3. Department of Physics, Indian Institute of Technology Delhi, New Delhi, India*

Session Q4
SPIN CURRENTS III

Lijun Zhu, Co-Chair

Cornell University, Ithaca, NY, United States

Shilei Zhang, Co-Chair

ShanghaiTech University School of Physical Science and Technology,
Shanghai, China

- Q4-01. Domain Wall Based Spin-Hall Nano-Oscillators. (Invited)**
H. Schultheiss^{1,2}, T. Hache¹, N. Sato¹, L. Körber^{1,2}, N. Puwenberg³, T. Mühl³, A.A. Awad⁴, S.S. Arekapudi⁵, F.J. Gonçalves¹, O. Hellwig^{1,5} and J. Fassbender^{1,2} *1. Institute for Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Technische Universität Dresden Fakultät Mathematik und Naturwissenschaften, Dresden, Germany; 3. Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden eV, Dresden, Germany; 4. Department of Physics, Goteborgs universitet Naturvetenskapliga Fakulteten, Goteborg, Sweden; 5. Technische Universität Chemnitz, Chemnitz, Germany*
- Q4-02. Role of Dirac Nodal Lines and Strain on the Spin Hall Conductivity of Epitaxial IrO₂ Thin Films.** *A. Bose¹, J.N. Nelson², X.S. Zhang¹, R. Jain², D.G. Schlom³, D. Ralph², D.A. Muller¹, K.M. Shen² and R. Buhrman¹* *1. AEP, Cornell University, Cornell University, Ithaca, NY, US, Ithaca, NY, United States; 2. Department of Physics, Cornell University, Cornell University, Ithaca, NY, US, Ithaca, NY, United States; 3. Department of Materials Science and Engineering, Cornell University, Cornell University, Ithaca, NY, US, Ithaca, NY, United States*
- Q4-03. Artificial Enhancement of the Spin Hall Angle of Ge Using the Interdiffusion of Atoms in Co₂FeAl_{0.5}Si_{0.5}/n-Ge Heterostructures.** *S. Kaneta-Takada¹, M. Yamada², S. Sato¹, S. Arai¹, L. Anh^{1,3}, K. Hamaya² and S. Ohya^{3,4}* *1. Department of Electrical Engineering and Information Systems, The University of Tokyo, Bunkyo-ku, Japan; 2. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 3. Institute of Engineering Innovation, The University of Tokyo, Bunkyo-ku, Japan; 4. Center for Spintronics Research Network (CSRN), The University of Tokyo, Bunkyo-ku, Japan*
- Q4-04. Agility of Spin Hall Nano-Oscillators Measured Using Time-Resolved Micro-BLS.** *F.J. Gonçalves¹, T. Hache¹, C. McKeefry¹, O. Hellwig^{1,2}, J. Fassbender¹ and H. Schultheiss¹* *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden - Rossendorf, Dresden, Germany; 2. Physics, Technische Universität Chemnitz, Chemnitz, Germany*

- Q4-05. Spin-Orbit Magnetic State Readout in Scaled Ferromagnetic/Heavy Metal Nanostructures.** *I. Groen¹, V. Pham¹, S. Manipatruni³, W. Choi¹, D. Nikonov³, E. Sagasta¹, C. Lin³, T. Gosavi³, A. Marty², L.E. Hueso¹, I. Young³ and F. Casanova¹* *1. Nanodevices, CIC nanoGUNE BRTA, San sebastian, Spain; 2. 2D and Semiconductor Spintronics, SPINTEC, CEA-INAC/CNRS/Univ. Grenoble, Grenoble, France; 3. Components Research, Intel Corp., Hillsboro, OR, United States*
- Q4-06. Spin Hall Angle Control by Doping Element Into Pt Host.** *H. Li¹, H. Yuasa¹, T. Yamauchi¹ and Y. Kurokawa¹* *1. Faculty of information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan*
- Q4-07. Current-Induced Switching From the Spin Hall Effect of BiTe.** *T. Chen¹, C. Peng¹, H. Yen¹ and C. Pai¹* *1. National Taiwan University, Taipei, Taiwan*
- Q4-08. Large Improvement on Spin-Orbit Torque Switching Efficiency in Pt-Cu Alloy.** *C. Hu¹ and C. Pai¹* *1. Materials Science and Engineering, National Taiwan University, Taipei, Taiwan*
- Q4-09. Manipulation of Coupling and Magnon Transport in Magnetic Metal-Insulator Hybrid Structures.** *Y. Fan¹, P. Quarterman², J. Finley¹, J. Han¹, P. Zhang¹, J.T. Hou¹, M.D. Stiles³, A.J. Grutter² and L. Liu¹* *1. EECS, Massachusetts Institute of Technology, Cambridge, MA, United States; 2. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD, United States; 3. Physical Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD, United States*
- Q4-10. Spintronic GdFe/Pt THz Emitters.** *R. Schneider¹, M. Fix², J. Bensmann¹, S. Michaelis de Vasconcellos¹, M. Albrecht² and R. Bratschitsch¹* *1. Institute of Physics and Center for Nanotechnology, University of Münster, Münster, Germany; 2. Institute of Physics, University of Augsburg, Augsburg, Germany*
- Q4-11. Room-Temperature non-Volatile Ferroelectric Control of Spin Hall Effect in the Semiconductor GeTe.** *S. Varotto¹, L. Nessi¹, S. Cecchi², J. Slawinska³, P. Noël⁵, S. Petrò¹, A. Novati¹, M. Cantoni¹, M. Costa⁷, R. Calarco⁸, M. Buongiorno Nardelli³, M. Bibes⁶, S. Picozzi⁴, J. Attané⁵, L. Vila⁵, R. Bertacco¹ and C. Rinaldi¹* *1. Physics, Politecnico di Milano, Milano, Italy; 2. Epitaxy, Paul-Drude-Institut für Festkörperelektronik, Berlin, Germany; 3. Physics, University of North Texas, Denton, TX, United States; 4. Consiglio Nazionale delle Ricerche - CNR-SPIN, Chieti, Italy; 5. Grenoble Alpes, CEA, CNRS Grenoble INP University, Grenoble, France; 6. CNRS Thales, Thales, France; 7. Physics, Fluminense Federal University, Rio de Janeiro, Brazil; 8. Consiglio Nazionale delle Ricerche, CNR-IMM, Roma, Italy*

Session Q5
BIOMEDICAL APPLICATIONS IV
(Poster Session)

Horia Chiriac, Chair

National Institute of Research and Development for Technical Physics,
Iasi, Romania

- Q5-01. Investigation of a Coupled Elasto-Magnetic Discs for Low Reynolds Number Pumps.** *E.L. Martin¹, M.T. Bryan², A. Pac¹, A.D. Gilbert¹ and F. Ogrin¹* 1. *The College of Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, United Kingdom;* 2. *Department of Electronic Engineering, University of London Royal Holloway, Egham, United Kingdom*
- Q5-02. Optimization of Transcranial Magnetic Stimulator Coil Using Stream Function for Reducing the Influence of Individual Variabilities of Head Geometry.** *S. Liu¹, H. Yoshioka¹, A. Kuwahata¹ and M. Sekino¹* 1. *Department of Electrical Engineering and Information Systems, Graduate School of Engineering, The University of Tokyo, Bunkyo-ku, Japan*
- Q5-03. Fe-Cr-Nb-B Magnetic Particles and STEM Cells, Triggers for Cancer Cells Apoptosis by Magneto-Mechanical Actuation.** *H. Chiriac¹, A. Minuti^{1,2}, C. Stavila^{1,2}, L. Labusca¹, D. Herea¹ and N. Lupu¹* 1. *Magnetic Materials and Devices, National Institute of Research and Development for Technical Physics, Iasi, Romania;* 2. *Faculty of Physics, "Alexandru Ioan Cuza" University, Iasi, Romania*
- Q5-04. Co/Pd-Based Synthetic Antiferromagnetic Multi-Stacks for Biomedical Applications.** *G. Varvaro¹, S. Laureti¹, M. Hassan^{1,3}, D. Peddis^{2,1}, G. Barucca³, P. Mengucci³, A. Gerardino⁴, E. Giovine⁴, O. Lik⁵ and M. Albrecht⁵* 1. *Institute of Structure of Matter, Consiglio Nazionale delle Ricerche, Roma, Italy;* 2. *DCCI, Universita degli Studi di Genova, Genova, Italy;* 3. *SIMAU, Universita Politecnica delle Marche, Ancona, Italy;* 4. *Istituto di Fotonica e Nanotecnologie, Consiglio Nazionale delle Ricerche, Roma, Italy;* 5. *Institute of Physics, Universitat Augsburg, Augsburg, Germany*
- Q5-05. Withdrawn**
- Q5-06. A Two-Dimensional Magnetic Gripper Robot Driven by a Triad of Electromagnetic Coils.** *H. Lee¹, D. Yang¹, K. Lee¹ and S. Jeon¹* 1. *Mechanical and Automotive Engineering, Kongju National University, Gongju, The Republic of Korea*
- Q5-07. Influence of Magnetic Nanoparticles on Cells of Ehrlich Ascites Carcinoma.** *S. Stolyar^{1,3}, O. Kryukova¹, R. Yaroslavtsev^{1,3} and N. Latyshev²* 1. *Krasnoyarsk Scientific Center, Krasnoyarsk, Russian Federation;* 2. *Siberian Federal University, Krasnoarsk, Russian Federation;* 3. *Kirensky Institute of Physics, Krasnoyarsk, Russian Federation*

- Q5-08. Towards Next-Generation Nerve Repair: Effects of Static Magnetic Field on Neurite Extensions.** X. Zhang¹, C. Mills², Y. Hua², R. Koppes², R. Pérez del Real³, M. Vazquez³, A. Koppes² and L. Lewis^{1,2} *1. Mechanical and Industrial Engineering, Northeastern University, Boston, MA, United States; 2. Chemical Engineering, Northeastern University, Boston, MA, United States; 3. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain*
- Q5-09. Study on the Acid-Base Balance in Blood Under Pulsed Magnetic Field Using Magnetic Beads.** S. Bang¹ and H. Lee¹ *1. Oriental Biomedical Engineering, Sangji University, Wonju, The Republic of Korea*
- Q5-10. Withdrawn**
- Q5-11. High Throughput Magnetic Single-Cell Sorting Using Spin Orbit Torque.** V.M. Estrada¹, R. Zheng¹, G. Carman¹ and A. Sepulveda¹ *1. Mechanical Engineering, University of California Los Angeles, Los Angeles, CA, United States*
- Q5-12. Portable Magnetic Particle Spectroscopy (MPS) Device for Future Rapid, One-Step and Wash-Free Bioassays.** V.K. Chugh¹, K. Wu¹, A. Nair¹, A. di Girolamo¹, N. Seekaew², L. Nguyen², R. Saha¹, W. Davies³, V. D Krishna⁴, D. Su⁵, M. C-J. Cheeran⁴ and J. Wang¹ *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, United States; 2. Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN, United States; 3. Department of Computer Science and Engineering, University of Minnesota, Minneapolis, MN, United States; 4. Department of Veterinary Population Medicine, University of Minnesota, Minneapolis, MN, United States; 5. Department of Chemical Engineering and Material Science, University of Minnesota, Minneapolis, MN, United States*

FRIDAY
MORNING
12:00

LIVE Q&A 17

Session Q6
COMPLEX OXIDES II
(Poster Session)

Suzanne te Velthuis, Chair
Argonne National Laboratory, Argonne, IL, United States

- Q6-01. Direct Observation of Double Exchange in Ferromagnetic $\text{La}_{0.7}\text{Sr}_{0.3}\text{CoO}_3$ by Broadband Ellipsometry.** A. Dubroka¹ *1. Condensed matter, IQVIA Spain, Brno, Czechia*
- Q6-02. Characterization of $\text{La}_x\text{Sr}_{1-x}\text{FeO}_3/\text{SrTiO}_3$ Superlattices Grown by Pulsed Laser Deposition.** M. Kiaba¹, T. Číž¹, O. Caha¹, G. Koster² and A. Dubroka¹ *1. Department of Condensed Matter Physics, Masaryk University, Brno, Czechia; 2. Universiteit Twente Faculteit Technische Natuurwetenschappen, Enschede, Netherlands*

Q6-03. Withdrawn

- Q6-04. Magnetic Anisotropy and Spin Scattering in (La_{2/3}Sr_{1/3}) MnO₃/CaRuO₃ Bilayers.** P.P. Balakrishnan^{1,2} and Y. Suzuki¹
1. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA, United States; 2. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD, United States
- Q6-05. High-Frequency Magnetotransport in La_{1-x}Sr_xMnO₃ (x = 0.12-0.20).** U. Chaudhuri¹ and R. Mahendiran¹
1. Physics, National University of Singapore, Singapore, Singapore
- Q6-06. Magnetic and Electron Paramagnetic Resonance Studies of Charge Ordered R_{0.5}Ca_{0.5}MnO₃ (R = Pr, Bi) Manganites.** A. K.N.¹ and S. Bhat²
1. Physics, Dr. Ambedkar Institute of Technology, Bangalore, India; 2. Physics, Indian Institute of Science, Bangalore, India
- Q6-07. Phases Competition in Half-Doped La_{0.5-x}Dy_xCa_{0.5-y}Sr_yMnO₃ Films.** Y. Tang¹, A. Zhang¹, X. Wu² and Z. Zhai³
1. Hohai University, Nanjing, China; 2. Nanjing University, Nanjing, China; 3. Huaiyin Normal University, Huai'an, China
- Q6-08. Structural and Magneto Transport Properties of Ruddlesden –Propper La_{2-2x}Sr_{2+2x}Mn₂O₇ (0.42≤x≤0.52) Layered Manganites.** A.K. Saw¹, S. Gupta², V.K. Pecharsky² and V. Dayal¹
1. Department of Physics, Maharaja Institute of Technology Mysore, Mandya, India; 2. Division of Materials Science and Engineering, Ames Laboratory, US Dept. of Energy, Ames, IA, United States
- Q6-09. Adjustment of Electromagnetic Properties in SrRuO₃ via Ru Content.** Z. Zhang¹, X. Yang¹, F. Duan¹, Y. Wang¹, T. Zhang¹, Y. Sun¹, A. Zhang² and X. Wu¹
1. Department of physics, Nanjing University, Nanjing, China; 2. College of Science, Hohai University, Nanjing, China
- Q6-10. Magnetic Anisotropy and Dzyaloshinskii-Moriya Interaction in Perovskite SrRuO₃/SrTiO₃ Oxide Heterostructures.** Z. Li¹, W. Mi¹ and H. Bai¹
1. Tianjin University, Tianjin, China
- Q6-11. Observation of Room Temperature Magnetoresistance in Graphene / CoFe₂O₄ Nanocomposite.** S. Roy^{1,2}, I. S.¹, F. Francis¹, V. G. V.¹ and A. Subramanian¹
1. Centre for Nano and Soft Matter Sciences, Bangalore, India; 2. Manipal Academy of Higher Education, Manipal, India
- Q6-12. Withdrawn**
- Q6-13. Withdrawn**

Session R1
DOMAIN WALLS

Liza Herrera Diez, Co-Chair
CNRS, University of Paris-Sud, Orsay, France

Reinoud Lavrijsen, Co-Chair
TU Eindhoven, Eindhoven, Netherlands

- R1-01. Interactions Between Spin Wave and Magnetic Domain Structures. (Invited) L. Liu¹** *1. Massachusetts Institute of Technology, Cambridge, MA, United States*
- R1-02. Magnetic Domain Formation and Shift in Magnetic Nanowire Memory Element With U-Shaped Writer Observed by Magneto-Optical Kerr Microscopy.** Y. Hori¹, M. Endo¹, N. Ishii¹ and Y. Miyamoto¹ *1. Science & Technology Research Labs., NHK (Japan Broadcasting Corp.), Setagaya-ku, Japan*
- R1-03. Withdrawn**
- R1-04. Domain Wall Dynamics in Junctions of Bi-Ring Structures.** G. Venkat¹, T.J. Hayward¹, A. Strömberg², I.T. Vidamour¹, E. Folven² and D. Allwood¹ *1. Materials Science and engineering, The University of Sheffield, Sheffield, United Kingdom; 2. Electronic Systems, Norges teknisk-naturvitenskapelige universitet, Trondheim, Norway*
- R1-05. Direct Imaging of Chiral Domain Walls due to the Dzyaloshinskii-Moriya Interaction in Ferrimagnetic Alloys at Different Temperatures.** B. Seng^{1,2}, D. Schönke¹, R.M. Reeve^{1,3}, J. Yeste¹, N. Kerber^{1,3}, D. Lacour², F. Kammerbauer¹, J. Bello², M. Hehn², S. Mangin² and P. Kläui^{1,3} *1. Institut für Physik, Johannes Gutenberg-Universität Mainz, 55099 Mainz, Germany; 2. Institut Jean Lamour, UMR CNRS 7198, Université de Lorraine, 54506 Vandoeuvre-lès-Nancy, France; 3. Graduate School of Excellence Materials Science in Mainz, 55128 Mainz, Germany*
- R1-06. Modelling of Magneto-Thermoelectric Response From a Domain Wall.** E. Saugar⁴, T. Ostler¹, C. Barton², R. Puttock², P. Klapetek³, O. Kazakova² and O. Chubykalo-Fesenko⁴ *1. Materials and Engineering Research Institute, Sheffield Hallam University, Sheffield, United Kingdom; 2. National Physical Laboratory, Hampton Rd, Teddington, Middlesex TW11 0LW, United Kingdom; 3. Czech Metrology Institute, Okružní 31, 638 00 Brno, Czechia; 4. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain*
- R1-07. Surface Acoustic Wave Assisted Depinning of Magnetic Domain Walls.** A. Adhikari¹, E. Gilroy², T.J. Hayward² and S. Adenwalla¹ *1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE, United States; 2. Department of Materials Science and Engineering, University of Sheffield, Sheffield S1 3JD, United Kingdom*

- R1-08. Experimental Observation and Control of Coupled Chiral Domain Walls in Synthetic Antiferromagnets Using in-Situ Lorentz Transmission Electron Microscopy.** *N. Pandey*¹, M.P. Li¹, M. De Graef¹ and V. Sokalski¹ *1. Carnegie Mellon University, Pittsburgh, PA, United States*
- R1-09. Domain Wall Tilt and Enhancement of the Walker Limit in Stripes With Dzyaloshinskii-Moriya Interaction and Perpendicular Anisotropy.** *O. Pylypovskiy*¹, V. Kravchuk^{2,3}, O. Volkov¹, J. Fassbender¹, D. Sheka⁴ and D. Makarov¹ *1. Helmholtz-Zentrum Dresden-Rossendorf e.V., Dresden, Germany; 2. Karlsruher Institut für Technologie, Karlsruhe, Germany; 3. Institut teoreticnoi fiziki imeni M M Bogolubova Nacional'na akademii nauk Ukraini, Kyiv, Ukraine; 4. Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*
- R1-10. Chiral Magnetic Domain Walls Dynamics in Creep Regime.** *C. Nguiepe Segnou*¹, M. Belmeguenai², S. Eimer¹, Y. Roussigne², S. Cherif², A. Stashkevich², T. Devolder¹ and J. Adam¹ *1. C2N, Paris-Saclay University, Palaiseau, France; 2. Université Sorbonne Paris Nord Institut Galilée, Villetaneuse, France*
- R1-11. Current Induced Domain Wall Motion at the Magnetic Compensation Point in Manganese Nickel Nitride (MnNiN) Thin Films.** *S. Ghosh*^{1,2}, T. Komori², A. Hallal¹, T. Hirose², J. Peña Garcia³, H. Okuno⁴, J. Vogel³, M. Chshiev¹, J. Attané¹, T. Suemasu², L. Vila¹ and S. Pizzini³ *1. Grenoble Alpes University, CEA, CNRS, Grenoble INP, IRIG-Spintec, Grenoble, France; 2. University of Tsukuba, Graduate School of Pure and Applied Sciences, Tsukuba, Japan; 3. Grenoble Alpes University, CNRS, Institut Néel, Grenoble, France; 4. Grenoble Alpes University, CEA, IRIG-MEM, Grenoble, France*
- R1-12. Directional Growth of Dendritic Domains in Co/Ni/Pt Multilayers - Significance of Domain Wall Steady-State Dynamics and Dispersive Stiffness.** *J.A. Brock*¹, M.D. Kitcher², R. Medapalli¹, V. Sokalski² and E. Fullerton¹ *1. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA, United States; 2. Materials Science and Engineering Department, Carnegie Mellon University, Pittsburgh, PA, United States*
- R1-13. Creating 3D Nanomagnetic Circuits for Spintronics Applications.** *F. Meng*³, C. Donnelly³, C. Abert⁴, S. Holmes¹, Z. Xiao², J. Liao³, D. Suess⁴ and A. Fernandez-Pacheco⁵ *1. University College London, London, United Kingdom; 2. Engineering, University of Cambridge, Cambridge, United Kingdom; 3. Physics, University of Cambridge, Cambridge, United Kingdom; 4. Physics, Universität Wien, Wien, Austria; 5. Physics, University of Glasgow, Glasgow, United Kingdom*

Session R2
**DOMAIN WALLS AND THE DZYALOSHINSKII-
MORIYA INTERACTION II**

Damien McGrouther, Chair
University of Glasgow, Glasgow, United Kingdom

- R2-01. Ultrafast Domain Wall Dynamics in Metallic and Insulating Ferrimagnets. (Invited)** *L. Caretta*^{1,2}, *S. Kim*³, *K. Lee*⁴, *C. Ross*⁵ and *G. Beach*⁵ *1. Materials Science and Engineering, University of California Berkeley, Berkeley, CA, United States; 2. Materials Sciences Division, E O Lawrence Berkeley National Laboratory, Berkeley, CA, United States; 3. Department of Physics and Astronomy, University of Missouri, Columbia, MO, United States; 4. Department of Materials Science and Engineering, Korea University, Seongbuk-gu, The Republic of Korea; 5. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA, United States*
- R2-02. Interface Engineering to Control the Dzyaloshinskii-Moriya Interaction in Ferrimagnetic GdCo: *ab Initio* Calculations.** *M. Morshed*¹, *K. Khoo*², *Y. Quessab*³, *J. Xu*³, *R. Laskowski*², *P. Balachandran*^{4,5}, *A.D. Kent*³ and *A.W. Ghosh*^{1,6} *1. Department of Electrical and Computer Engineering, University of Virginia, Charlottesville, VA, United States; 2. Institute of High Performance Computing, Agency for Science, Technology and Research, Singapore, Singapore; 3. Center for Quantum Phenomena, Department of Physics, New York University, New York, NY, United States; 4. Department of Materials Science and Engineering, University of Virginia, Charlottesville, VA, United States; 5. Department of Mechanical and Aerospace Engineering, University of Virginia, Charlottesville, VA, United States; 6. Department of Physics, University of Virginia, Charlottesville, VA, United States*
- R2-03. Tunable Magnetic Anisotropy and Dzyaloshinskii-Moriya Interaction at Cobalt/Diamond Interfaces.** *J. Jiang*¹, *J. Liang*², *Q. Cui*², *Z. Wang*², *W. Mi*¹ and *H. Yang*^{2,3} *1. Tianjin University, Tianjin, China; 2. Ningbo Institute of Industrial Technology Chinese Academy of Sciences, Ningbo, China; 3. Center of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences, Beijing, China*
- R2-04. Withdrawn**
- R2-05. Interplay Between Spin-Orbit Torque and Dzyaloshinskii-Moriya Interactions in Thin Amorphous Ferrimagnetic Films.** *Y. Quessab*¹, *J. Xu*¹, *N.N. Statuto*¹ and *A.D. Kent*¹ *1. Department of Physics, New York University, New York, NY, United States*

- R2-06. Universal High-Speed Dynamics of Distorted Bubble Skyrmions in an Uncompensated Amorphous Ferrimagnet.** *K. Litzius*¹, *F. Buettner*¹, *A. Wittmann*¹, *W. Zhou*², *C. Ma*², *J. Gräfe*³, *N. Träger*³, *S. Finizio*⁴, *Y. Quessab*⁵, *D. Suzuki*¹, *L. Caretta*¹, *M. Huang*¹, *S. Sheffels*¹, *S. Huang*¹, *H. Nembach*⁶, *G.A. Riley*⁶, *J. M. Shaw*⁶, *M. Valvidares*⁷, *P. Gargiani*⁷, *G. Schütz*³, *A.D. Kent*⁵, *J. Poon*² and *G. Beach*¹
1. Massachusetts Institute of Technology, Cambridge, MA, United States; 2. University of Virginia, Charlottesville, VA, United States; 3. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 4. Paul Scherrer Institut, Villigen, Switzerland; 5. Department of Physics, New York University, New York, NY, United States; 6. National Institute of Standards and Technology, Gaithersburg, MD, United States; 7. ALBA Synchrotron Light Source, Barcelona, Spain
- R2-07. MnGa/Co₂MnSi Bilayer for Spin-Orbit Torque Magnetization Switching.** *M. Yamanouchi*¹, *K. Jono*², *F. Shimohashi*² and *T. Uemura*² *1. Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan; 2. Division of Electronics for Informatics, Graduate School of Information Science and Technology, Hokkaido University, Sapporo, Japan*
- R2-08. In Pursuit of the Anisotropic Dzyaloshinskii-Moriya Interaction: Structural and Magnetic Characterization of Uniaxial Pt/Co-Based C_{2v} Thin Films.** *M.D. Kitcher*¹, *T. Mewes*², *C. Mewes*², *M. De Graef*¹ and *V. Sokalski*¹
1. Materials Science & Engineering, Carnegie Mellon University, Pittsburgh, PA, United States; 2. Physics and Astronomy, University of Alabama, Tuscaloosa, AL, United States
- R2-09. The Effects of Disorder on Hysteresis Loops in Chiral Magnets.** *V. Nehruji*¹, *M. Beg*¹, *H. Fangohr*^{1,2}, *T. Hesjedal*³, *T. Lancaster*⁴, *P. Hatton*⁴ and *O. Hovorka*¹ *1. University of Southampton, Southampton, United Kingdom; 2. European XFEL GmbH, Schenefeld, Germany; 3. Oxford University, Oxford, United Kingdom; 4. Durham University, Durham, United Kingdom*
- R2-10. Tuning Spin-Orbit Torques Across the Phase Transition in VO₂/NiFe Heterostructures.** *J. Kim*¹, *K. Lee*¹, *J. Cramer*¹, *D. Han*², *P. Salev*³, *P.N. Lapa*³, *N.M. Vargas*³, *I.K. Schuller*³, *G. Jakob*¹ and *M. Klaui*¹ *1. Institute of Physics, Johannes Gutenberg University, Mainz, Germany; 2. Korea Institute of Science and Technology, Seol, The Republic of Korea; 3. Department of Physics, University of California San Diego, La Jolla, CA, United States*
- R2-11. Engineering Chiral Magnetic Textures in W/Co/AuPt Thin Films.** *J. Peña Garcia*³, *L. Camosi*², *A. Fassatoui*³, *S. Pizzini*³, *O. Fruchart*⁴, *A. Thiaville*¹, *S. Rohart*¹, *F. Genuzio*⁵, *T. Onur Montes*⁵, *A. Locatelli*⁵ and *J. Vogel*³ *1. Laboratoire de Physique des Solides, Orsay, France; 2. Institut Catala de Nanociencia i Nanotecnologia, Bellaterra, Spain; 3. Institut NEEL, Grenoble, France; 4. SPINtronique et Technologie des Composants, Grenoble, France; 5. Elettra Sincrotrone Trieste SCpA, Trieste, Italy*

Session R3

MRAM, MAGNETIC LOGIC, AND RELATED DEVICES

Liliana D. Buda-Prejbeanu, Co-Chair
CEA, Paris, France

Lauren Garten, Co-Chair
Naval Research Lab, Washington, DC, United States

R3-01. Current-Driven Magnetic Domain-Wall Logic. (Invited)

Z. Luo¹, A. Hrabec¹, T. Dao¹, G. Sala¹, S. Finizio², J. Feng¹,
S. Mayr¹, J. Raabe², P. Gambardella¹ and L. Heyderman¹ *1. ETH
Zurich, Zurich, Switzerland; 2. Paul Scherrer Institut, Villigen,
Switzerland*

R3-02. Threshold Logic With Current-Driven Magnetic Domain

Walls. X. Hu¹, B.A. Hill¹, F. Garcia-Sanchez² and
J.S. Friedman¹ *1. Electrical & Computer Engineering, The
University of Texas at Dallas, Richardson, TX, United States;
2. Universidad de Salamanca, Salamanca, Spain*

R3-03. Speed Enhancement of Magnetic Logic-Memory Device by

Insulator-to-Metal Transition. Y. Pu¹ and X. Zhang¹
*1. Materials Science and Engineering, Tsinghua University,
Beijing, China*

R3-04. Walker-Like Domain Wall Motion in STTMRAM Cells:

Evidence and Consequences for the Write Error Rate.
P. Bouquin^{2,1}, J. Kim¹, O. Bultynck², S. Rao², S. Couet²,
G.S. Kar² and T. Devolder¹ *1. Université Paris-Saclay,
Palaiseau, France; 2. IMEC, Leuven, Belgium*

R3-05. Micromagnetic Instabilities Associated With Domain Wall

**Dynamics in Perpendicular Magnetized Magnetic Tunnel
Junction Nanopillars.** N.N. Statuto¹, J. Beik Mohammadi² and
A.D. Kent¹ *1. Physics Department, Center for Quantum
Phenomena, New York University, New York, NY, United States;
2. Department of Physics, Loyola University New Orleans, New
Orleans, LA, United States*

R3-06. Spintronic Control of Magnetostatically Coupled dot

Assemblies. S. Jeon¹, H. Chen¹ and S. Majetich¹ *1. Physics,
Carnegie Mellon University, Pittsburgh, PA, United States*

R3-07. Data Transmission in an Insulator Utilizing Rotational

Magnetization Wave. A. Shadman¹ and J. Zhu¹ *1. Electrical
and Computer Engineering, Carnegie Mellon University,
Pittsburgh, PA, United States*

- R3-08. The Influence of a Thermal Noise on the Accuracy of a Spectrum Analyzer Based on a Spin Torque Nano-Oscillator.** S. Louis¹, A. Litvinenko², V. Iurchuk², P. Sethi², P. Elphick³, V. Tyberkevych⁴, P. Artemchuk⁴, A. Jenkins⁵, R. Ferreira⁵, B. Dieny², U. Ebels² and A.N. Slavin⁴ 1. *Electrical and Computer Engineering, Oakland University, Rochester, MI, United States*; 2. *CEA, CNRS, INAC, SPINTEC – University Grenoble Alpes, Grenoble, France*; 3. *KOSTAL of America, Troy, MI, United States*; 4. *Physics, Oakland University, Rochester, MI, United States*; 5. *International Iberian Nanotechnology Laboratory, Braga, Portugal*
- R3-09. Entropy-Reduced Retention Times in Magnetic Memory Elements: a Case of the Meyer-Neldel Compensation Rule.** L. Desplat^{1,2} and J. Kim² 1. *Institut de Physique et de Chimie des Matériaux de Strasbourg, CNRS, Université de Strasbourg, Strasbourg, France*; 2. *Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Saclay, Palaiseau, France*
- R3-10. An Eigenvalue-Based Framework for the Magnetization Switching by Spin Torque.** Z. Lin¹, I. Volvach¹ and V. Lomakin² 1. *Materials Science and Engineering, University of California San Diego, La Jolla, CA, United States*; 2. *Department of Electrical and Computer Engineering, University of California San Diego, La Jolla, CA, United States*
- R3-11. Development of the Metastable Electrode Materials for the Huge Tunnel Magnetoresistance Effect.** T. Ichinose¹, J. Ikeda^{1,2}, Y. Onodera^{1,2}, K. Suzuki^{1,3} and S. Mizukami^{1,4} 1. *WPI-AIMR, Tohoku University, Sendai, Japan*; 2. *Department of Applied Physics, Tohoku University, Sendai, Japan*; 3. *CSRN, Tohoku University, Sendai, Japan*; 4. *CSIS and CSRN, Tohoku University, Sendai, Japan*
- R3-12. Enhancement of Magnetoresistance Characteristics of Ge-Rich Co₂Fe(Ga,Ge)-Based Current-Perpendicular-to-Plane Giant Magnetoresistance Devices.** K. Nakada¹, Y. Chikaso², T. Tanimoto², M. Inoue², K. Inubushi¹ and T. Uemura² 1. *Advanced Products Development Center, Technology & Intellectual Property HQ, TDK Corporation, Ichikawa, Japan*; 2. *Grad. School of Information Science and Technology, Hokkaido University, Sapporo, Japan*
- R3-13. Current-in-Plane Spin-Valve Magnetoresistance in Ferromagnetic Semiconductor (Ga,Fe)Sb Heterostructures With High Curie Temperature.** K. Takase¹, L. Anh^{2,3}, K. Takiguchi¹ and M. Tanaka^{1,4} 1. *Department of Electrical Engineering and Information Systems, The University of Tokyo, Bunkyo-ku, Japan*; 2. *Institute of Engineering Innovation, The University of Tokyo, Bunkyo-ku, Japan*; 3. *PRESTO, JST, Kawaguchi, Japan*; 4. *Center for Spintronics Research Network (CSRN), The University of Tokyo, Bunkyo-ku, Japan*

- R3-14. Perpendicular Magnetized Spin-Valves on Flexible Substrates. a Comparative Study Between Transfer-and-Bond Approaches and Direct Deposition on Flexible Substrates.** *G. Varvaro*¹, *M. Hassan*^{1,2}, *S. Laureti*¹, *G. Barucca*², *C. Rinaldi*³, *F. Fagiani*³, *N. Schmidt*⁴ and *M. Albrecht*⁴
1. Institute of Structure of Matter, Consiglio Nazionale delle Ricerche, Roma, Italy; 2. SIMAU, University Polytechnic Marche, Ancona, Italy; 3. Dept. of Physics, Politecnico di Milano, Milano, Italy; 4. Institute of Physics, Universitat Augsburg, Augsburg, Germany

FRIDAY
AFTERNOON
12:30

LIVE Q&A 18

Session R4
SPIN HALL AND RELATED EFFECTS III
Hidekazu Kurebayashi, Chair
University College London, London, United Kingdom

- R4-01. Robust two-Terminal Spin-Valve Effect From Chirality-Induced Spin Selectivity.** *T. Liu*¹, *X. Wang*^{2,4}, *H. Wang*², *G. Shi*³, *F. Gao*³, *H. Feng*³, *H. Deng*¹, *L. Hu*¹, *E. Lochner*¹, *P. Schlottmann*¹, *S. von Molnar*¹, *Y. Li*³, *J. Zhao*² and *P. Xiong*¹
1. Physics, Florida State University, Tallahassee, FL, United States; 2. State Key Laboratory of Superlattices and Microstructures, Institute of Semiconductors Chinese Academy of Sciences, Beijing, China; 3. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Beijing, China; 4. College of Applied Sciences, Beijing University of Technology, Beijing, China
- R4-02. Room Temperature Gate Tunable Spin-to-Charge Conversion in LaCrO₃/SrTiO₃ Heterostructures.** *S. Yang*¹, *A. Al-Tawhid*¹, *E. Vetter*¹, *D. Kumah*¹ and *D. Sun*¹
1. Department of Physics, North Carolina State University, Raleigh, NC, United States
- R4-03. Independent Geometrical Control of Spin and Charge Resistances in Curved Spintronics.** *K. Das*¹, *D. Makarov*², *P. Gentile*^{3,4}, *M. Cuoco*^{3,4}, *B. Van Wees*¹, *C. Ortix*^{5,4} and *I.J. Vera-Marun*⁶
1. Physics of Nanodevices, Zernike Institute for Advanced Materials, Rijksuniversiteit Groningen, Groningen, Netherlands; 2. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 3. CNR-SPIN, c/o Università degli Studi di Salerno, Fisciano, Italy; 4. Dipartimento di Fisica "E. R. Caianiello", Università degli Studi di Salerno, Fisciano, Italy; 5. Institute for Theoretical Physics, Center for Extreme Matter and Emergent Phenomena, Universiteit Utrecht, Utrecht, Netherlands; 6. Department of Physics and Astronomy, The University of Manchester, Manchester, United Kingdom

- R4-04. Simultaneous Observation of Anti-Damping and Inverse Spin Hall Effect in $\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3/\text{Pt}$ Bilayers.** P. Gupta¹, B.B. Singh¹, K. Roy¹, A. Sarkar², M. Waschk², T. Brueckel² and S. Bedanta¹ 1. *Laboratory for Nanomagnetism and Magnetic Materials (LNMM), School Of Physical Sciences, National Institute of Science Education and Research, Jatni- 752050, India;* 2. *Forschungszentrum Jülich GmbH, Jülich Centre for Neutron Science (JCNS-2) and Peter Grünberg Institut (PGI-4), Jaraftit-52425, Germany*
- R4-05. Impact of Symmetry on Anisotropic Magnetoresistance in Textured Ferromagnetic Thin Films.** A. Philippi-Kobs^{1,2}, A. Farhadi², L. Matheis², D. Lott³, A. Chuvilin^{4,5} and H. Oepen² 1. *Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany;* 2. *Universität Hamburg, Hamburg, Germany;* 3. *Helmholtz-Zentrum Geesthacht, Geesthacht, Germany;* 4. *CIC nanoGUNE, San Sebastian, Spain;* 5. *Ikerbasque, Bilbao, Spain*
- R4-06. Spin Seebeck Effect and Anomalous Nernst Effect in Ferrimagnetic TbCo Alloys.** A. Yagmur¹, S. Sumi¹, H. Awano¹ and K. Tanabe¹ 1. *Toyota Technological Institute, Nagoya, Japan*
- R4-07. Wave-Diffusion Approach to Spin Current Dynamics in Magnetic Multilayers Driven by THz Fields.** M. Burgard¹, D.M. Nenno² and H. Schneider¹ 1. *Physics, Technische Universität Kaiserslautern, Kaiserslautern, Germany;* 2. *Harvard University John A Paulson School of Engineering and Applied Sciences, Cambridge, MA, United States*
- R4-08. Influence of Carriers in Spin Pumping in Organic Semiconductors.** C. Nicolaidis¹ and T. Trypiniotis¹ 1. *Physics, Panepistimio Kyprou Schole Thetikon kai Epharmosmenon Epistemon, Nicosia, Cyprus*
- R4-09. Microwave and Thermally Driven Spin Currents in $\text{Tm}_3\text{Fe}_5\text{O}_{12}/\text{Pt}$ With Perpendicular Magnetic Anisotropy.** G.L. da Silva Vilela^{1,2}, J.E. Abrao³, E. Santos³, Y. Yao^{4,5}, J.B. Mendes⁶, R.L. Rodríguez-Suárez⁷, W. Han^{4,5}, S.M. Rezende³, A. Azevedo³ and J.S. Moodera^{2,8} 1. *Física de Materiais, Universidade de Pernambuco Escola Politecnica de Pernambuco, Recife, Brazil;* 2. *Plasma Science and Fusion Center, and Francis Bitter Magnet Laboratory, Massachusetts Institute of Technology, Cambridge, MA, United States;* 3. *Departamento de Física, Universidade Federal de Pernambuco, Recife, Brazil;* 4. *International Center for Quantum Materials, Peking University, Beijing, China;* 5. *Collaborative Innovation Center of Quantum Matter, Beijing, China;* 6. *Departamento de Física, Universidade Federal de Vicosa, Viçosa, Brazil;* 7. *Facultad de Física, Pontificia Universidad Catolica de Chile, Santiago, Chile;* 8. *Department of Physics, Massachusetts Institute of Technology, Cambridge, MA, United States*

R4-10. Non-Volatile Electric Control of Spin-Charge Conversion in a SrTiO₃ Rashba System. (Invited) P. Noël^{1,4}, F. Trier², L. Vincente Arche², J. Bréhin², D. Vaz^{3,2}, V. Garcia², S. Fusil², A. Barthélemy², L. Vila⁴, M. Bibes² and J. Attané⁴ 1. DMATL, Eidgenössische Technische Hochschule Zurich, Zurich, Switzerland; 2. Unité Mixte de Physique, CNRS, Thales, Université Paris-Saclay, Palaiseau, France, Palaiseau, France; 3. CIC nanoGUNE, San Sebastian, Spain; 4. SPINtronique et Technologie des Composants, Grenoble, France

R4-11. Spin Pumping From Acoustically Driven Parametric Spin Waves in a Hybrid Magnon-Phonon Resonator. N. Polzikova¹, S. Alekseev¹, V. Luzanov², A. Raevskiy² and S. Nikitov¹ 1. Kotelnikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Moscow, Russian Federation; 2. Fryazino branch Kotelnikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Fryazino, Russian Federation

R4-12. Monte Carlo Simulation of Ultrafast Nonequilibrium Spin and Charge Transport in Iron. J. Briones¹, H. Schneider¹ and B. Rethfeld¹ 1. Department of Physics and Research Center OPTIMAS, University of Kaiserslautern, Kaiserslautern, Germany

FRIDAY
AFTERNOON
12:30

LIVE Q&A 18

Session R5
SOFT MAGNETIC MATERIALS
(Poster Session)

Arkady Zhukov, Co-Chair
Basque Foundation for Science, San Sebastian, Spain
Gaoyuan Ouyang, Co-Chair
Iowa State University, Ames, IA, United States

R5-01. Magnetic Correlations and Coercivity in Nanocrystalline Alloys With Grain-Size Distribution. A. Bolyachkin¹, E. Dengina¹ and S. Komogortsev² 1. Ural Federal University, Yekaterinburg, Russian Federation; 2. Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russian Federation

R5-02. Magnetic Critical Behavior, Hall Effect, and Magnetic Interactions in Fe_{73.5-x}Cr_xCu₁Nb₃Si_{13.5}B₉ Metallic Glasses on the Road to Percolation. A. Rosales-Rivera¹, N.A. Salazar-Henao¹, R. Gonzalez-Sánchez¹, J. López Tabares¹, A.A. Velazques-Salazar¹ and F.D. Saccone² 1. Laboratorio de Magnetismo y Materiales Avanzados, Universidad Nacional de Colombia, Sede Manizales, Manizales, Colombia; 2. Departamento de Física, Facultad de Ingeniería, Universidad de Buenos Aires, Buenos Aires, DC, Argentina

- R5-03. Electronic Structure of Amorphous Fe-P-C-Ge Soft Magnet.** J. Han¹, M. Choi², H. Won², H.C. Yim¹ and Y. Hong² 1. *Physics, Sookmyung Women's University, Yongsan-gu, The Republic of Korea*; 2. *Electrical & Computer Engineering, The University of Alabama College of Arts and Sciences, Tuscaloosa, AL, United States*
- R5-04. Simulation of Magnetic Field Modulation of Magnetic Flux Concentrator.** J. Peng^{1,2}, F. Jin^{1,2}, L. Xu^{1,2}, J. Jiang^{1,2}, B. Yang^{1,2}, K. Dong^{1,2}, W. Mo^{1,2} and J. Song^{1,2} 1. *School of Automation, China University of Geosciences, Wuhan, China*; 2. *Hubei key Laboratory of Advanced Control and Intelligent Automation for Complex Systems, Wuhan, China*
- R5-05. Mild Electro-Mechanical Processing of Water-Quenched Amorphous Microwires for Property Improvements.** A. Valeriano Inchausti¹, X. Zhang², A. Jacas¹, R. Pérez del Real¹, M. Butta^{3,1}, L. Lewis^{2,1} and M. Vazquez¹ 1. *Materials for Emergent Technologies, Instituto de Ciencia de Materiales de Madrid, Madrid, Spain*; 2. *Northeastern University College of Engineering, Boston, MA, United States*; 3. *Ceske vysoké uceni technicke v Praze Fakulta elektrotechnicka, Praha, Czechia*
- R5-06. Tensile, Torsion and Bending Stresses Modulation of Co-Based Microwire's Domain Structure and Magnetoimpedance Effect.** Y. Wang¹, F. Qin¹, T. Feng¹, D. Estevez¹ and H. Peng¹ 1. *Zhejiang University, Hangzhou, China*
- R5-07. On the Path to New Magnetic Cores: Electromagnetic Simulations of Amorphous Magnetic Microwires for Inductive Applications.** C. Johnson¹, X. Zhang², R. Pérez del Real³, S. Pakdelian⁴, M. Vazquez³, L. Lewis^{2,5} and B. Lehman¹ 1. *Electrical and Computer Engineering, Northeastern University, Boston, MA, United States*; 2. *Mechanical and Industrial Engineering, Northeastern University, Boston, MA, United States*; 3. *Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain*; 4. *Electrical and Computer Engineering, University of Massachusetts Lowell, Lowell, MA, United States*; 5. *Chemical Engineering, Northeastern University, Boston, MA, United States*
- R5-08. Influence of Stress Relief on the Domain Wall Velocity of Rapidly Quenched Amorphous Submicron Wires.** S. Corodeanu¹, C. Hlenschi¹, C. Rotarescu¹, H. Chiriac¹, N. Lupu¹ and T. Óvári¹ 1. *Department of Magnetic Materials and Devices, National Institute of Research and Development for Technical Physics, Iasi, Romania*
- R5-09. High-Induction FeCo Films: Green Synthesis and Magnetic Properties.** E. Denisova^{1,2}, L. Chekanova¹, S. Komogortsev^{1,2}, I. Nemtsev³ and R. Iskhakov¹ 1. *Kirensky Institute of Physics Federal Research Center KSC SB RAS, Krasnoyarsk, Russian Federation*; 2. *Siberian Federal University, Krasnoyarsk, Russian Federation*; 3. *Federal Research Center "Krasnoyarsk Science Center of the Siberian Branch of the Russian Academy of Sciences", Krasnoyarsk, Russian Federation*
- R5-10. Research on Core Loss of Soft Magnetic Composites Based on 3D Modeling.** Y. Yang¹, Y. Wang¹ and C. Liu¹ 1. *Hebei University of Technology, Tianjin, China*

- R5-11. Comparative Analysis of High-Frequency Magnetic Properties of C-Type Amorphous and Nanocrystalline at Different Air Gap.** Y. Li¹, H. Liu¹, H. Sun¹ and Z. Wan¹
1. State Key Laboratory of Reliability and Intelligence of Electrical Equipment, Hebei University of Technology, Tianjin, China
- R5-12. Magnetic and Magnetocaloric Properties of the Nanocrystalline Pr_{0.7}Ba_{0.2}Ca_{0.1}MnO₃ Sample.** M. ¹, P. Bisht¹, A. Kumar¹ and R.N. Mahato¹ *1. School Of Physical Sciences, Jawaharlal Nehru University, New Delhi, India*
- R5-13. Synthesis and Characterization of Fe₃O₄-HfO₂ Nanoparticles by Magnetization and Hyperfine Interactions Measurements.** I.T. Matos¹, T.S. Sales¹, G. Cabrera-Pasca², A. Burimova¹, R.N. Saxena¹, L.F. Pereira¹, L. Otubo¹ and A.W. Carbonari¹ *1. Instituto de Pesquisas Energéticas e Nucleares, IPEN-CNEN/SP, São Paulo, Brazil; 2. Universidade Federal de Pará, Abaetetuba, PA, Brasil, Pará, Brazil*
- R5-14. Effect of v-Doping on the Magnetic Transition of Fe-Rich (Mn,Fe)_{1.9}(P,Si) Compounds.** O. Hamutu¹, N.v. van Dijk¹ and E. Brück¹ *1. Technische Universiteit Delft Faculteit Technische Natuurwetenschappen, Delft, Netherlands*
- R5-15. Eddy Current Loss Reduction in Axial-Flux Motors Using 3D Printing.** H. Pyo¹, S. Yang¹ and W. Kim¹ *1. Electrical Engineering, Gachon University, Seongnam, The Republic of Korea*
- R5-16. Neutron Diffraction Studies of the (Cr₈₄Re₁₆)_{100-x}V_x Alloy System.** S. Jacobs¹, A. Prinsloo¹, A. Venter², Z. Sentsho², A. Studer³ and C. Sheppard¹ *1. Physics, University of Johannesburg, Auckland Park, South Africa; 2. South African Nuclear Energy Corporation Ltd, Pretoria, South Africa; 3. Australian Nuclear Science and Technology Organisation, Kirrawee, NSW, Australia*
- R5-17. Spin Glass Behaviour in (Cr₈₄Re₁₆)_{100-x}Mn_x Alloys.** S. Jacobs¹, C. Sheppard¹, P. de Camargo² and A. Prinsloo¹
1. Physics, University of Johannesburg, Auckland Park, South Africa; 2. Physics, Universidade Federal de Sao Carlos, Sao Carlos, Brazil

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Bird, T. (E2-10)	39	Braganca, P.M. (C5-03)	25
Bird, T. (G5-03)	64	Brahlek, M. (H2-09)	70
Birge, N.O. (G1-02)	57	Bramley, F. (D1-11)	28
Birge, N.O. (G1-05)	57	Bran, C. (A1-03)	2
Birol, T. (L2-02)	105	Bran, C. (O7-05)	147
Birowska, M. (I2-09)	78	Brandon, F. (G1-13)	58
Bisht, P. (L4-04)	109	Branford, W. (C4-01)	23
Bisht, P. (R5-12)	180	Branford, W. (N2-03)	127
Biswas, A. (F2-12)	49	Brangham, J. (F1-06)	47
Biswas, A. (L4-06)	109	Brataas, A. (G1-08)	58
Björk, R. (P3-03)	153	Brataas, A. (G1-11)	58
Björling, A. (J6-07)	93	Brataas, A. (N2-10)	128
Blagg, K. (M4-12)	121	Bratschitsch, R. (M4-08)	120
Blakley, S.M. (L1-14)	104	Bratschitsch, R. (Q4-10)	166
Bleser, S.M. (P6-16)	159	Bréhin, J. (R4-10)	178
Blomgren, J. (Q2-11)	163	Breitbart, D. (E4-12)	43
Blon, T. (C4-08)	24	Brems, S. (K2-08)	96
Bloom, B. (I2-13)	78	Breth, L. (B1-13)	12
Bloom, R.P. (G4-01)	63	Brigner, W.H. (A5-01)	9
Bluegel, S. (F1-01)	46	Brigner, W.H. (A5-03)	10
Blyakhman, F.A. (J1-07)	85	Brigner, W.H. (A5-06)	10
Boes, A. (K5-07)	101	Briones, J. (G3-11)	62
Bogush, M.Y. (D4-01)	32	Briones, J. (R4-12)	178

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Carretta, S. (D2-02)	29	Chaves, G.D. (P3-08)	153
Carretta, S. (D2-03)	29	Che, P. (N1-07)	126
Carretta, S. (F5-07)	54	Cheekati, S.K. (B2-10)	14
Carretta, S. (G2-01)	59	Cheekati, S.K. (F4-06)	52
Carriço, A.S. (M6-01)	123	Cheema, S. (J4-11)	90
Caruana, A. (E1-10)	37	Chekanova, L. (G6-12)	67
Caruana, A. (E4-14)	43	Chekanova, L. (R5-09)	179
Caruana, A. (M5-07)	122	Chelvane, J.A. (D1-02)	26
Casanova, F. (K4-09)	100	Chelvane, J.A. (E5-12)	45
Casanova, F. (O1-13)	137	Chelvane, J.A. (O5-09)	144
Casanova, F. (O4-02)	142	Chen, A.P. (M2-14)	117
Casanova, F. (Q4-05)	166	Chen, A.P. (P5-02)	156
Cascales Sandoval, M. (F1-03)	46	Chen, B. (F3-11)	51
Caso, D. (L2-09)	106	Chen, B. (O2-15)	139
Caso, D. (O7-05)	147	Chen, D. (F6-02)	55
Castell-Queralt, J. (M3-10)	119	Chen, F. (J2-01)	86
Castelo-Grande, T. (B2-14)	15	Chen, G. (D1-03)	26
Castelo-Grande, T. (C3-09)	22	Chen, G. (F1-01)	46
Castro, M. (C5-05)	25	Chen, G. (I3-08)	80
Cates, J. (L3-06)	107	Chen, G. (M1-05)	113
Cavazzini, G. (F2-15)	49	Chen, G. (O3-11)	141
Cavill, S. (H1-15)	69	Chen, G. (Q3-03)	164
Cazayous, M. (K1-09)	95	Chen, H. (D2-08)	29
Ceballos, A. (A1-06)	2	Chen, H. (F3-11)	51
Cebollada, F. (D1-12)	28	Chen, H. (G2-03)	59
Cebollada, F. (F2-18)	49	Chen, H. (G4-06)	64
Cebollada, F. (H1-05)	68	Chen, H. (O1-06)	136
Cecchi, S. (Q4-11)	166	Chen, H. (P5-01)	156
Celegato, F. (J1-05)	85	Chen, H. (Q2-11)	163
Celegato, F. (L3-12)	108	Chen, H. (R3-06)	174
Celinski, Z. (H4-02)	73	Chen, J. (K4-14)	100
Celinski, Z. (I5-05)	83	Chen, J. (M1-01)	113
Celinski, Z. (P1-02)	149	Chen, J. (M2-14)	117
Celinski, Z. (P1-03)	149	Chen, J. (P5-02)	156
Cespedes, O. (D1-07)	27	Chen, J. (P6-01)	157
Chai, J. (K3-02)	97	Chen, K. (C3-03)	22
Chai, Y. (A1-06)	2	Chen, K. (O2-12)	139
Chakraborti, H. (B1-14)	12	Chen, L. (I1-09)	76
Chalise, A. (K5-04)	101	Chen, L. (J2-01)	86
Cham, T.M. (O1-04)	135	Chen, L. (O6-15)	146
Chan, J. (I4-14)	82	Chen, M. (C4-07)	24
Chan, K. (G5-03)	64	Chen, M. (O7-12)	148
Chang-Sheng, W. (G6-11)	67	Chen, P. (C4-07)	24
Chang, A. (K4-05)	99	Chen, P. (O3-05)	140
Chang, C. (C2-10)	21	Chen, P. (O7-12)	148
Chang, C. (F5-10)	54	Chen, S. (M2-14)	117
Chang, C. (I4-03)	81	Chen, T. (J4-06)	89
Chang, H.W. (F6-05)	55	Chen, T. (M4-01)	119
Chang, H.W. (F6-06)	55	Chen, T. (M4-07)	120
Chang, L. (P5-11)	157	Chen, T. (Q4-07)	166
Chang, W. (F6-05)	55	Chen, W. (K5-04)	101
Chang, W. (F6-06)	55	Chen, W. (M4-07)	120
Chang, Y. (J4-06)	89	Chen, X. (A1-04)	2
Channagoudra, G. (B4-04)	17	Chen, X. (O3-06)	140
Chantrell, R. (D1-06)	27	Chen, X. (P4-08)	155
Chantrell, R. (G3-13)	63	Chen, X. (S6-04)	112
Chantrell, R. (M1-04)	113	Chen, Y. (C1-04)	18
Chantrell, R. (N1-09)	126	Chen, Y. (F4-08)	52
Chantrell, R. (N3-05)	129	Chen, Y. (G2-05)	59
Chantrell, R. (N3-12)	130	Chen, Y. (I2-10)	78
Chantrell, R. (P2-05)	151	Chen, Y. (K2-05)	96
Chantrell, R. (P2-06)	151	Chen, Y. (M3-07)	118
Chantrell, R. (P2-07)	151	Chen, Y.P. (C5-01)	25
Chantrell, R. (Q2-09)	163	Chen, Y.P. (G5-10)	65
Chantrell, R. (Q2-10)	163	Chen, Z. (O3-11)	141
Chao, C. (K3-08)	98	Chenattukuzhiyil, S. (O1-08)	136
Charlier, J. (K4-03)	99	Chenattukuzhiyil, S. (O1-13)	137
Charlton, T.R. (D2-06)	29	Cheng, C. (M4-07)	120
Chatterjee, J. (G3-12)	63	Cheng, C. (O2-12)	139
Chatterjee, R. (C1-03)	18	Cheng, E. (J1-01)	84
Chatterjee, R. (C4-03)	23	Cheng, H. (K1-01)	94
Chaturvedi, V. (M2-03)	115	Cheng, L. (K3-02)	97
Chaudhary, V. (J2-07)	86	Cheng, M. (K3-02)	97
Chaudhuri, U. (E1-08)	37	Cheng, R. (G1-12)	58
Chaudhuri, U. (Q6-05)	169	Cheng, R. (G5-08)	65
Chauhan, N. (B1-14)	12	Cheng, R. (J6-03)	92
Chavent, A. (G4-02)	63	Cheng, R. (N4-08)	131

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Cheng, R. (S4-02)	75	Chopdekar, R.V. (S6-04)	112
Cheng, W. (I5-09)	83	Chopin, C. (F3-02).	50
Cheng, X. (A4-13)	8	Chopin, C. (F3-09).	51
Cheng, X. (G2-03)	59	Chouaieb, S. (I3-06)	80
Cheng, X. (K3-02)	97	Chouaieb, S. (O1-02)	135
Cheng, Y. (F1-06)	47	Choudhary, R. (C2-02)	20
Cheng, Y. (G1-04)	57	Choudhary, R. (D2-11)	30
Cheng, Y. (J6-04)	92	Chouhan, A. (L2-03)	105
Cheol Hong, S. (D4-10)	33	Chow, G. (M2-14)	117
Cheol Hong, S. (D4-11)	33	Chowdhury, N. (M3-06)	118
Chérif, S. (I3-11)	80	Chowdhury, N. (O5-08)	144
Cherif, S. (R1-10)	171	Chowdhury, N. (P6-02)	157
Cherifi-Hertel, S. (K1-05)	94	Chshiev, M. (R1-11)	171
Chernenko, V. (A4-05)	7	Chshiev, M. (S7-02)	134
Chesnel, K. (D1-14)	28	Chuang, T. (J4-09)	90
Chesnel, K. (E2-04)	38	Chubykalo-Fesenko, O. (A1-03)	2
Chesnel, K. (E2-05)	38	Chubykalo-Fesenko, O. (G3-13)	63
Chesnel, K. (O6-11)	146	Chubykalo-Fesenko, O. (L1-03)	103
Chi, D. (K3-02)	97	Chubykalo-Fesenko, O. (N1-09)	126
Chia, E. (K3-02)	97	Chubykalo-Fesenko, O. (Q2-09)	163
Chiang, C. (M1-11)	114	Chubykalo-Fesenko, O. (Q2-10)	163
Chiba, M. (O6-04)	145	Chubykalo-Fesenko, O. (R1-06)	170
Chiba, T. (K4-08)	99	Chudnovsky, E. (M5-01)	121
Chiba, T. (O1-09)	136	Chugh, V.K. (Q5-12)	168
Chicco, S. (F2-15)	49	Chumak, A. (E4-12)	43
Chicco, S. (F5-07)	54	Chumak, A. (N2-08)	127
Chien, C. (M1-11)	114	Chumak, A. (S8-03)	160
Chiesa, A. (D2-02)	29	Chung, H. (O2-15)	139
Chiesa, A. (D2-03)	29	Chung, P. (N3-10)	130
Chiesa, A. (F5-07)	54	Churemart, J. (P2-05)	151
Chiesa, A. (G2-01)	59	Churemart, P. (P2-05)	151
Chikara, S. (K1-01)	94	Churikova, A. (G1-02)	57
Chikaso, Y. (R3-12)	175	Churikova, A. (G1-05)	57
Chikina, I. (B2-13)	14	Chuvilin, A. (K4-09)	100
Childress, L. (C5-03)	25	Chuvilin, A. (O4-02)	142
Childress, L. (E3-05)	40	Chuvilin, A. (R4-05)	177
Chioar, I. (B1-12)	12	Cibieli, G. (B3-05)	15
Chioar, I. (I2-11)	78	Ciuciulkaite, A. (B1-12)	12
Chiocchetta, A. (A2-10)	4	Ciuciulkaite, A. (I2-11)	78
Chiriari, H. (H1-01)	67	Čiz, T. (Q6-02)	168
Chiriari, H. (N5-09)	133	Clark, A.T. (A4-13)	8
Chiriari, H. (Q5-03)	167	Clark, A.T. (G2-03)	59
Chiriari, H. (R5-08)	179	Clavel, M. (A3-04)	5
Chisholm, M. (M2-02)	115	Clavel, M. (A3-05)	5
Chistyakov, V. (J5-08)	91	Clements, E. (I4-06)	81
Chistyakov, V. (K4-13)	100	Clifford, D. (F2-12)	49
Chiu, C. (F6-06)	55	Coene, A. (S3-04)	56
Chiu, I. (H2-01)	69	Coey, M. (E1-02)	36
Chiu, I. (M2-04)	115	Coey, M. (E3-08)	41
Cho, E. (P5-14)	157	Coey, M. (I2-06)	77
Cho, H. (D3-03)	31	Coey, M. (J1-04)	85
Cho, H. (G6-06)	66	Cogulu, E. (G1-04)	57
Cho, J. (N1-06)	125	Coh, S. (G3-01)	61
Cho, S. (I4-06)	81	Coisson, M. (J1-05)	85
Cho, S. (L4-02)	108	Colbois, J. (A2-09)	4
Choi, E. (H2-09)	70	Cole-Piepkke, K. (J3-04)	87
Choi, G. (G3-09)	62	Coleman, C. (D2-04)	29
Choi, G. (J4-04)	89	Colino, J. (O6-10)	146
Choi, G. (P6-13)	159	Colis, S. (E3-08)	41
Choi, H. (F5-02)	53	Collette, D. (D1-03)	26
Choi, H. (F5-08)	54	Collin, S. (E5-08)	45
Choi, H. (H4-07)	73	Collin, S. (I3-09)	80
Choi, J. (C4-05)	24	Collin, S. (I3-10)	80
Choi, J. (D3-03)	31	Colson, D. (K1-09)	95
Choi, J. (F4-13)	53	Constable, E. (A2-03)	3
Choi, J. (G6-06)	66	Cooper, J.F. (G4-07)	64
Choi, M. (N3-14)	130	Copus, M. (E4-10)	43
Choi, M. (R5-03)	179	Copus, M. (N2-01)	127
Choi, W. (M2-02)	115	Coraux, J. (O1-02)	135
Choi, W. (Q4-05)	166	Corbae, P. (H1-12)	69
Choi, Y. (H2-09)	70	Corbae, P. (J4-03)	89
Chopdekar, R.V. (B1-05)	11	Corodeanu, S. (N5-09)	133
Chopdekar, R.V. (B1-06)	11	Corodeanu, S. (R5-08)	179
Chopdekar, R.V. (G1-04)	57	Correa, B. (H1-14)	69
Chopdekar, R.V. (H2-09)	70	Correa, B. (O5-06)	144
Chopdekar, R.V. (L1-12)	104	Corte-León, H. (L1-01)	102
Chopdekar, R.V. (N4-08)	131	Cortés-Ortuño, D. (I3-01)	79

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Costa, M. (Q4-11)	166	Das, S. (M3-06)	118
Costache, M. (O1-01)	135	Das, S. (O5-08)	144
Couet, S. (E3-01)	40	Dasari, S. (J2-07)	86
Couet, S. (L2-05)	105	Dassonville, P. (O5-07)	144
Couet, S. (O2-04)	138	David, P. (I3-06)	80
Couet, S. (R3-04)	174	Davies, C. (I2-11)	78
Couture, P. (I5-05)	83	Davies, C. (P2-09)	152
Cowburn, R. (F1-03)	46	Davies, W. (Q5-12)	168
Cox, C. (E1-10)	37	Davydenko, A. (M6-06)	124
Cox, C. (E4-14)	43	Dawidek, R. (G4-07)	64
Cramer, J. (G3-08)	62	Day-Roberts, E. (L2-02)	105
Cramer, J. (R2-10)	173	Dayal, V. (B4-04)	17
cropper, m. (E1-10)	37	Dayal, V. (Q6-08)	169
cropper, m. (E4-14)	43	DC, M. (P6-01)	157
Cros, V. (B3-05)	15	DC, M. (S1-04)	34
Cros, V. (B3-06)	16	De Biasi, E. (J1-08)	85
Cros, V. (B3-10)	16	De Brion, S. (A2-03)	3
Cros, V. (C1-10)	19	de Camargo, P. (R5-17)	180
Cros, V. (E5-08)	45	de Coster, G. (K4-05)	99
Cros, V. (F3-08)	51	De Graef, M. (I3-03)	79
Cros, V. (I3-09)	80	De Graef, M. (M5-08)	122
Cros, V. (I3-10)	80	De Graef, M. (R1-08)	171
Cros, V. (L1-11)	104	De Graef, M. (R2-08)	173
Cros, V. (M3-08)	118	de Juan, F. (K4-09)	100
Cros, V. (N1-03)	125	de la Barrière, O. (J2-03)	86
Cros, V. (N2-07)	127	de la Presa, P. (E2-13)	39
Cros, V. (O3-13)	141	de la Presa, P. (M2-08)	116
Cros, V. (S8-01)	159	de loubens, G. (M4-09)	121
Crotti, D. (L2-05)	105	de loubens, G. (M4-11)	121
Crowell, P.A. (A3-12)	6	de loubens, G. (N1-03)	125
Crowell, P.A. (K3-05)	98	de loubens, G. (N2-09)	128
Crowell, P.A. (K3-06)	98	de loubens, G. (Q2-01)	162
Crowell, P.A. (Q2-03)	162	de loubens, G. (S8-01)	159
Csaba, G. (S5-02)	111	de Melo, C. (G3-02)	61
Cugat, O. (S3-02)	56	de Menezes, R.M. (O7-06)	147
Cugini, F. (F2-15)	49	De Renzi, R. (F5-07)	54
Cui, C. (A5-01)	9	De Riz, A. (P3-09)	153
Cui, C. (A5-05)	10	de Souza Silva, C. (O7-06)	147
Cui, Q. (E1-12)	37	de Teresa, J. (A1-02)	1
Cui, Q. (R2-03)	172	de Teresa, J. (E2-01)	38
Cui, W. (C3-08)	22	de Teresa, J. (L1-03)	103
Cuoco, M. (R4-03)	176	Deac, A. (E3-08)	41
Curcio, A. (J1-06)	85	Deac, A. (O6-05)	145
Cuya Huaman, J. (C3-01)	21	Dearg, M. (J5-05)	91
- D -			
D Krishna, V. (Q5-12)	168	Dearg, M. (M5-07)	122
D.C., B. (L3-09)	107	Deb, M. (P2-01)	151
da Silva Vilela, G.L. (R4-09)	177	Debray, J. (A2-03)	3
Dabrowski, M. (P2-08)	152	Decorse, C. (A2-03)	3
Dabrowski, M. (P2-10)	152	Deepchand, V. (D4-02)	32
Daffe, N. (C1-07)	19	Deffenbaugh, M. (F4-09)	52
Dai, B. (I3-05)	80	DeHerrera, M. (O2-01)	137
Dai, B. (N1-12)	127	Deka, A. (P6-03)	158
Dalgliesh, R.M. (D2-14)	30	Del Rose, T. (J5-14)	92
Danailov, M. (G3-05)	61	del Valle, J. (L2-01)	105
Dang, T. (A4-13)	8	del-Valle, N. (M3-10)	119
D'Angelo, C. (C3-11)	22	Delaney, R. (J2-06)	86
DANIEL, L. (P3-07)	153	Delattre, G. (S3-02)	56
Dantas, A.L. (M6-01)	123	Delczeg-Czirjak, E.K. (E1-07)	37
Dao, T. (R3-01)	174	Delgado-Garcia, R. (O6-10)	146
Darwin, E. (M5-02)	122	Delin, A. (D2-10)	30
Das Gupta, K. (B1-14)	12	Delin, A. (E2-02)	38
Das, A. (G1-06)	57	Delin, A. (L3-04)	107
Das, A. (M2-06)	116	Delin, A. (Q2-04)	162
Das, B. (E2-03)	38	DeLong, L.E. (S6-04)	112
Das, G. (H1-11)	68	DeMann, A. (S5-02)	111
Das, K. (M4-10)	121	Demidov, V.E. (N2-07)	127
Das, K. (R4-03)	176	Demidov, V.E. (S8-01)	159
Das, P. (B1-14)	12	Demin, G.D. (G6-05)	66
Das, P. (O6-03)	145	Demokritov, S. (N2-07)	127
Das, P. (O7-09)	148	Demokritov, S. (S8-01)	159
Das, P. (P6-03)	158	Denardin, J. (M5-13)	123
Das, R. (E1-08)	37	Deng, H. (R4-01)	176
Das, R. (I4-06)	81	Deng, L. (I2-10)	78
Das, R. (L4-02)	108	Deng, L. (I2-12)	78
		Dengina, E. (O6-18)	146
		Dengina, E. (R5-01)	178
		Denisova, E. (G6-12)	67

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Eimer, S. (R1-10)	171	Fan, Y. (Q4-09)	166
Ekomasov, A. (C5-04)	25	Fang, W. (M1-07).	114
Ekomasov, E. (C5-04)	25	Fangohr, H. (D1-07).	27
Ekomasov, E. (L3-03)	106	Fangohr, H. (I3-01)	79
El Hadri, M. (F2-01)	47	Fangohr, H. (R2-09).	173
ElBidweihy, H. (I1-05)	76	Farhadi, A. (R4-05)	177
ElBidweihy, H. (P1-04)	150	Farhan, A. (S6-03)	112
Elkins, J. (G5-13)	65	Fariborzi, H. (C5-08)	26
Elkins, J. (K5-04)	101	Farmer, B. (S6-04)	112
Ellis, M.O. (A5-04)	10	Farmer, T. (H2-09).	70
Ellis, M.O. (G3-13)	63	Faske, T. (F2-04)	48
Elphick, K. (O2-09)	138	Fassatoui, A. (L2-06)	105
Elphick, P. (R3-08).	175	Fassatoui, A. (R2-11)	173
Emelyanova, S. (L4-07).	109	Fassbender, J. (B3-02)	15
Emori, S. (A3-01)	5	Fassbender, J. (E4-06)	42
Emori, S. (A3-02)	5	Fassbender, J. (F3-12)	51
Emori, S. (A3-04)	5	Fassbender, J. (J6-05).	93
Emori, S. (A3-05)	5	Fassbender, J. (Q4-01)	165
Emori, S. (A3-08)	6	Fassbender, J. (Q4-04)	165
Emori, S. (O4-04)	142	Fassbender, J. (R1-09)	171
Endo, M. (R1-02).	170	Fast, K. (G2-11)	60
Endo, Y. (L3-10)	107	Faupel, F. (F3-11).	51
Endoh, T. (O2-03)	138	Favaro, F. (L1-09)	103
Endoh, T. (O2-06)	138	Fecova, L. (L3-05).	107
Endoh, T. (P6-11).	158	Fedor, J. (L1-02)	102
Ener, S. (F2-03)	48	Fedotov, I.V. (L1-14)	104
Ener, S. (H3-09)	72	Feilhauer, J. (L1-02).	102
Ener, S. (Q1-06)	161	Fel'k, V.A. (O6-14)	146
Enokido, Y. (C2-09)	21	Felser, C. (E1-01).	36
Ensslin, K. (K4-09)	100	Felser, C. (J5-02)	90
Erickson, M.J. (K3-05)	98	Felser, C. (O3-12)	141
Erickson, T. (K2-13)	97	Felser, C. (S1-01).	34
Eriksson, O. (D2-10)	30	Felton, J. (M1-09)	114
Eriksson, O. (E1-07)	37	Feng, H. (R4-01)	176
Eriksson, O. (E2-02)	38	Feng, J. (R3-01)	174
Eriksson, O. (Q2-04)	162	Feng, L. (Q1-08)	161
Ernault, M. (Q3-06)	164	Feng, M. (M2-04)	115
Eroshenko, P. (O6-14)	146	Feng, T. (M4-03)	120
Ersan, F. (E1-03)	36	Feng, T. (R5-06).	179
Erugu, U. (M5-14)	123	Feng, X. (O1-05)	135
Erugu, U. (O1-06)	136	Feng, Y. (C3-08).	22
Escobar-Steinvall, S. (A1-07)	2	Feng, Y.P. (M2-14).	117
Escoda, M. (L4-09)	109	Feng, Y.P. (P5-02)	156
Espinosa-Magaña, F. (L4-03).	109	Feringa, F. (M4-10)	121
Espinosa, A. (J1-06).	85	Fermon, C. (F3-02)	50
Estevez, D. (R5-06)	179	Fermon, C. (F3-08)	51
Estrada, V.M. (I2-03)	77	Fermon, C. (F3-09)	51
Estrada, V.M. (Q5-11)	168	Fernandes Cauduro, A. (F1-01)	46
Etheridge, J.J. (Q2-03).	162	Fernandes Cauduro, A. (O3-11).	141
Evans, R.F. (D1-06)	27	Fernandes, R. (L2-02)	105
Evans, R.F. (G3-13)	63	Fernandez- Roldan, J.A. (L1-03).	103
Evans, R.F. (L1-06)	103	Fernandez-Pacheco, A. (A1-02).	1
Evans, R.F. (M1-04).	113	Fernandez-Pacheco, A. (A1-09).	2
Evans, R.F. (N3-05).	129	Fernandez-Pacheco, A. (F1-03).	46
Evans, R.F. (N3-12)	130	Fernandez-Pacheco, A. (R1-13).	171
Evans, R.F. (O6-01)	145	Fernandez-Roldan, J. (A1-03)	2
Evelt, M. (S8-01)	159	Ferrara, E. (J2-03)	86
Everschor-Sitte, K. (A5-07).	10	Ferrari, V. (K2-13)	97
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Fabbrici, S. (F2-15)	49	Ferreira, A. (G5-03)	64
Fabiani, G. (N2-02)	127	Ferreira, R. (B3-03)	15
Fabre, F. (I3-06)	80	Ferreira, R. (B3-04)	15
Fabre, F. (O1-02)	135	Ferreira, R. (B3-05)	15
Fagan, P. (P3-07)	153	Ferreira, R. (B3-06)	16
Fagiani, F. (R3-14).	176	Ferreira, R. (B3-09)	16
Fähler, S. (I1-01)	76	Ferreira, R. (M3-08).	118
Fähler, S. (K1-03)	94	Ferreira, R. (Q3-06)	164
Fakhrul, T. (C1-02)	18	Ferreira, R. (R3-08)	175
Falus, P. (D2-14)	30	Ferreira, W. (D4-08)	33
Fan, R. (I3-01)	79	Ferreira, W. (F5-06)	54
Fan, X. (H5-08)	75	Ferrer, S. (A1-02).	1
Fan, X. (P6-16)	159	Ferrer, S. (L1-10)	104
Fan, Y. (G1-12)	58	Ferrer, S. (O5-01).	143
Fan, Y. (K2-04)	96	Fert, A. (E5-08)	45
Fan, Y. (P6-01).	157	Fert, A. (I3-09)	80
		Fert, A. (I3-10)	80
		Fert, A. (O3-13)	141
		feuchtwanger, J.F. (A4-05).	7

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Gammer, C. (H1-06)	68	Ghirri, A. (D2-05)	29
Gandha, K. (C2-08)	21	Ghosh, A.W. (R2-02)	172
Ganesh, P. (M2-02)	115	Ghosh, S. (H2-04)	70
Gangopadhyay, S. (J5-13)	92	Ghosh, S. (R1-11)	171
Gao, F. (R4-01)	176	Giacchetti, L. (J1-04)	85
Gao, L. (H4-08)	73	Gibbons, J. (J6-12)	93
Gao, P. (M4-03)	120	Giblin, S. (Q2-11)	163
Gao, Q. (E1-04)	36	Gilbert, A.D. (Q5-01)	167
Gao, X. (H2-09)	70	Gilbert, M. (S1-03)	34
Gao, X. (M2-02)	115	Gilroy, E. (R1-07)	170
Gaponov, M.S. (L3-08)	107	Giordano, A. (M1-08)	114
Garanin, D. (M5-01)	121	Giordano, M. (A1-07)	2
García-Arribas, A. (L1-03)	103	Giovine, E. (Q5-04)	167
Garcia-Bravo, J. (N5-13)	133	Giraud, R. (J5-07)	91
Garcia-Sanchez, F. (A5-01)	9	Gish, J.T. (O1-03)	135
Garcia-Sanchez, F. (A5-03)	10	Gladii, O. (O7-08)	148
Garcia-Sanchez, F. (A5-06)	10	Gliga, S. (B1-01)	11
Garcia-Sanchez, F. (L3-12)	108	Glowinski, H. (E4-02)	41
Garcia-Sanchez, F. (R3-02)	174	Gnoli, L. (E5-02)	44
García, C. (P3-12)	154	Gobbi, M. (O4-02)	142
Garcia, F. (C1-08)	19	Gobbo, J. (J4-01)	88
Garcia, L.M. (B2-04)	13	Göbel, B. (O3-01)	140
Garcia, V. (K1-07)	94	Göbel, B. (O3-12)	141
Garcia, V. (R4-10)	178	Godel, F. (K4-03)	99
Garello, K. (E3-01)	40	Goennenwein, S. (E1-01)	36
Garesci, F. (M1-08)	114	Goering, E. (Q1-10)	161
Garg, N. (Q3-07)	164	Goh, K. (K3-02)	97
Gargiani, P. (J5-12)	92	Goiriena-Goikoetxea, M. (L1-03)	103
Gargiani, P. (L1-11)	104	Gokhale, V.J. (G2-07)	59
Gargiani, P. (R2-06)	173	Goldberger, J. (J4-01)	88
Garlatti, E. (B2-03)	13	Goldberger, J. (O1-05)	135
Garlatti, E. (D2-01)	28	Goldman, S. (H4-02)	73
Garlatti, E. (F5-07)	54	Golovach, V. (O4-02)	142
Garlatti, E. (G2-01)	59	Golubeva, E. (F3-01)	50
Garrity, K. (G5-11)	65	Golubeva, E. (F3-11)	51
Garrity, K. (O1-05)	135	Gomes, G. (M6-09)	124
Garshev, A.V. (A4-17)	9	Gomez-Perez, J. (O4-02)	142
Gartside, J.C. (C4-01)	23	Gómez-Polo, C. (N5-06)	132
Gartside, J.C. (N2-03)	127	Gómez, J. (P3-12)	154
Gary, D. (F4-04)	52	Gomonay, O. (G1-09)	58
Gas, K. (M1-09)	114	Gomonay, O. (G1-11)	58
Gassmann, J. (C2-06)	21	Gomonay, O. (J6-07)	93
Gassmann, J. (C2-07)	21	Gomonay, O. (N2-10)	128
Gaudin, G. (I3-06)	80	Gomonay, O. (P4-07)	155
Gaudin, G. (N1-10)	126	Gonçalves, A. (M3-07)	118
Gaudin, G. (O3-07)	141	Gonçalves, F.J. (B3-02)	15
Gaudin, G. (O3-08)	141	Gonçalves, F.J. (E4-10)	43
Gault, B. (H3-09)	72	Gonçalves, F.J. (O5-04)	144
Gaur, A. (L4-04)	109	Gonçalves, F.J. (Q4-01)	165
Gaur, A.B. (S3-01)	56	Gonçalves, F.J. (Q4-04)	165
Gavriloaea, P.I. (N1-09)	126	Gonçalves, V. (F5-06)	54
Gavriloaea, P.I. (P2-07)	151	Gong, C. (E1-09)	37
Gavriloaea, M.A. (D4-01)	32	Gong, S. (E1-09)	37
Gawryluk, D. (F2-07)	48	González-Gómez, L. (M3-10)	119
Gay, J. (A1-07)	2	González-Orellana, C. (O4-02)	142
Gayles, J. (E1-01)	36	González-Ruano, C. (L2-09)*	106
Gazibegovic, S. (K3-06)	98	Gonzalez-Sánchez, R. (R5-02)	178
Ge, J. (F3-12)	51	gonzalez, J. (L4-09)	109
Ge, Y. (N1-08)	126	González, J.M. (D1-12)	28
Gebara, P. (F2-08)	48	González, J.M. (F2-18)	49
Geerts, W.J. (G2-12)	60	González, J.M. (H1-05)	68
Geerts, W.J. (L3-09)	107	González, J.M. (M1-06)	113
Gentile, P. (R4-03)	176	Goodway, C. (D2-14)	30
Gentillon, A. (F1-11)	47	Goolaup, S. (O3-06)	140
Gentry, C. (E1-07)	37	Gorbachev, E. (Q1-09)	161
Genuzio, F. (R2-11)	173	Gorchon, J. (G3-02)	61
George, T.F. (G3-10)	62	Gorchon, J. (M3-04)	118
Georgieva, Z. (I2-13)	78	Gorchon, J. (P2-01)	151
Geprägs, S. (P4-13)	155	Gorman, J.J. (G2-07)	59
Gerardino, A. (Q5-04)	167	Gorshunov, B.P. (Q1-09)	161
Gerasimenko, A. (E5-07)	44	Gort, R. (G3-06)	62
Gerasimova, N. (G3-06)	62	Gosavi, T. (Q4-05)	166
Gercsi, Z. (E1-02)	36	Goss, G. (K5-07)	101
Gerevenkov, P. (A3-13)	6	Gosteau, J. (H2-02)	70
Germov, A.Y. (H2-12)	71	Gotić, M. (F4-12)	53
Gerrity, M. (E1-07)	37	Goto, M. (C5-06)	26
Ghirri, A. (B2-02)	13	Goto, M. (N1-06)	125

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Hameed, S. (M2-03)	115	Hehn, M. (E4-11)	43
Hamill, A. (Q2-03)	162	Hehn, M. (L2-09)	106
Hammel, P. (B3-08)	16	Hehn, M. (M3-04)	118
Hammel, P. (F1-06)	47	Hehn, M. (P2-01)	151
Hamrle, J. (E1-11)	37	Hehn, M. (R1-05)	170
Hamutu, O. (R5-14)	180	Heigl, M. (D1-04)	27
Han, D. (J4-05)	89	Heinonen, O. (B1-01)	11
Han, D. (R2-10)	173	Heinonen, O. (J5-03)	91
Han, J. (D4-12)	33	Heinonen, O. (S1-02)	34
Han, J. (G1-12)*	58	Heinonen, O. (S5-02)	111
Han, J. (G6-10)	67	Heinz, B. (N2-08)	127
Han, J. (I2-01)	77	Heinze, L. (A2-01)	3
Han, J. (Q4-09)	166	Heischmidt, B. (K3-06)	98
Han, J. (R5-03)	179	Heistracher, P. (B1-02)	11
Han, M. (M2-02)	115	Held, K. (K3-02)	97
Han, W. (R4-09)	177	Hellbrück, L. (E1-07)	37
Han, X. (O3-03)	140	Hellman, F. (A1-06)	2
Hanajiri, T. (B1-14)	12	Hellman, F. (H1-12)	69
Haney, P.M. (M4-05)	120	Hellman, F. (J4-03)	89
Haney, P.M. (S5-04)	111	Hellman, F. (J4-11)	90
Hanke, J. (J4-05)	89	Hellsvik, J. (L3-04)	107
Hankiewicz, J.H. (P1-02)	149	Hellwig, O. (B3-02)	15
Hankiewicz, J.H. (P1-03)	149	Hellwig, O. (F1-11)	47
Hanley, T. (G2-08)	60	Hellwig, O. (O7-08)	148
Hannachi, E. (J3-09)	88	Hellwig, O. (Q4-01)	165
Hansen, T. (A4-05)	7	Hellwig, O. (Q4-04)	165
Hao, G. (N4-08)	131	Helms, B. (A1-06)	2
Hara, R. (H4-04)	73	Heltemes, K. (L2-02)	105
Hara, S. (F6-03)	55	Hemme, P. (K1-09)	95
Hara, Y. (M6-10)	124	Hendren, W. (A3-10)	6
Haran, K.S. (D3-03)	31	Hendren, W. (N4-04)	131
Harikumar, P. (H5-07)	74	Hendren, W. (P2-08)	152
Harmon, B. (G5-02)	64	Hendren, W. (P2-10)	152
Harrington, S. (K4-05)	99	Henry, Y. (E4-11)	43
Harris, V. (C1-04)	18	Henschel, M. (C4-08)	24
Harris, V. (G2-05)	59	Hepburn, C. (O7-16)	149
Harrison, R. (E2-04)	38	Herea, D. (Q5-03)	167
Harrison, R. (E2-05)	38	Heremans, J. (A3-04)	5
Hartnett, T. (A3-04)	5	Herling, F. (K4-09)	100
Hartnett, T. (J5-13)	92	Herling, F. (O1-13)	137
Hartnett, T. (Q1-12)	162	Hermans, T.M. (E3-08)	41
Hashizume, H. (I5-09)	83	Hermans, T.M. (J1-04)	85
Haskel, D. (H2-09)	70	Hermosa, G.C. (C3-03)	22
Haslinger, M.J. (B1-13)	12	Hermosa, G.C. (K2-05)	96
haspot, V. (K1-07)	94	Hermosa, J. (O5-01)	143
Hassan, M. (Q5-04)	167	Hernández García, L. (C3-09)	22
Hassan, M. (R3-14)	176	Hernández, L. (B2-14)	15
Hassan, N. (A5-01)	9	Hernandez, L.A. (H5-08)	75
Hassan, N. (A5-03)	10	Hernando, A. (E2-13)	39
Hassan, N. (A5-05)	10	Hernando, A. (M2-08)	116
Hassan, N. (A5-06)	10	Herrero-Albillos, J. (B2-04)	13
Hassan, P. (K5-05)	101	Herrero-Martin, J. (B2-04)	13
Hastings, J.T. (S6-04)	112	Herrero, A. (A4-17)	9
Hatton, P. (I3-01)	79	Herrero, A. (A4-18)	9
Hatton, P. (R2-09)	173	Hersam, M. (O1-03)	135
Haug, M. (I1-02)	76	Hesjedal, T. (E4-01)	41
Hauser, A.J. (A3-03)	5	Hesjedal, T. (M5-12)	123
Hauser, A.J. (A3-09)	6	Hesjedal, T. (P2-10)	152
Hayakawa, J. (N5-04)	132	Hesjedal, T. (R2-09)	173
Hayakawa, T. (O1-12)	137	Hesjedal, T. (S2-01)	35
Hayashi, K. (H5-04)	74	Heyderman, L. (A2-09)	4
Hayashida, M. (I4-15)	82	Heyderman, L. (B1-05)	11
Haykal, A. (I3-06)	80	Heyderman, L. (G3-07)	62
Haykal, A. (O1-02)	135	Heyderman, L. (R3-01)	174
Hayward, T.J. (A1-04)	2	Hicken, R. (P2-08)	152
Hayward, T.J. (A5-04)	10	Hicken, R. (P2-10)	152
Hayward, T.J. (G4-07)	64	Hickey, B. (D1-07)	27
Hayward, T.J. (R1-04)	170	Hierro-Rodriguez, A. (A1-02)	1
Hayward, T.J. (R1-07)	170	Hierro-Rodriguez, A. (L1-10)	104
He, L. (E1-04)	36	Hierro-Rodriguez, A. (O5-01)	143
He, M. (N3-14)	130	Higashi, Y. (N5-14)	133
He, M. (P2-11)	152	Hight Walker, A. (G5-11)	65
He, P. (P4-12)	155	Hight Walker, A.R. (H1-14)	69
He, S. (D3-05)	31	Hight Walker, A.R. (O1-05)	135
He, S. (F4-04)	52	Hight Walker, A.R. (O1-10)	136
He, Z. (J2-04)	86	Hight Walker, A.R. (O5-06)	144
Heczko, O. (P5-04)	156	Higo, T. (M4-01)	119

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Hill, B.A. (R3-02)	174	Hrabec, A. (R3-01).	174
Hillebrands, B. (E4-12)	43	Hsin, Y. (O2-12).	139
Hillier, A. (J3-08)	87	Hsu, C. (J4-03).	89
Himmel, M. (F2-05)	48	Hsu, C. (J4-11)	90
Hindmarch, A. (S2-03).	35	Hsu, T. (G5-04)	64
Hinokihara, T. (C2-01).	20	Hsu, W. (F6-06)	55
Hirano, N. (O6-04).	145	Hsu, W. (P2-04)	151
Hirayama, M. (M4-01).	119	Hu, C. (O6-15).	146
Hirohata, A. (O2-09)	138	Hu, C. (Q4-08).	166
Hirosawa, S. (H3-10)	72	Hu, J. (O1-05)	135
Hirosawa, T. (O3-09)	141	Hu, L. (R4-01)	176
Hirose, T. (R1-11)	171	Hu, M. (N2-12)	128
Hitosugi, T. (I4-05)	81	Hu, W. (S6-04).	112
Hjörvarsson, B. (B1-04).	11	Hu, X. (A5-01).	9
Hjörvarsson, B. (B1-12).	12	Hu, X. (A5-02).	10
Hjörvarsson, B. (C4-06).	24	Hu, X. (A5-03).	10
Hlawacek, G. (E3-08)	41	Hu, X. (A5-06).	10
Hlenschi, C. (N5-09)	133	Hu, X. (R3-02).	174
Hlenschi, C. (R5-08)	179	Hu, Z. (E4-13)	43
Hlova, I.Z. (L4-06).	109	Hu, Z. (F2-14)	49
Ho, P. (O3-06)	140	Hu, Z. (L4-11)	110
Hofer, J. (G3-03)	61	Hua, Y. (Q5-08)	168
Hofer, J. (G3-11)	62	Huang, B. (K3-08).	98
Hofer, M. (N2-12)	128	Huang, J.A. (J5-08)	91
Hoffmann, A. (G1-13)	58	Huang, J.A. (K4-13).	100
Hoffmann, A. (J6-12).	93	Huang, L. (O2-15)	139
Hoffmann, A. (M3-03).	118	Huang, M. (R2-06).	173
Hoffmann, A. (N1-02)	125	Huang, N. (C3-14).	23
Hoffmann, A. (O1-03)	135	Huang, Q. (F6-02)	55
Hoffmann, A. (O4-12)	143	Huang, S. (C1-02)	18
Hoffmann, A. (S1-03)	34	Huang, S. (I4-13)	82
Hoffmann, A. (S5-02)	111	Huang, S. (J4-09).	90
Hoffmann, M. (F1-01)	46	Huang, S. (M1-11)	114
Hofherr, M. (E1-07)	37	Huang, S. (R2-06)	173
Hofhuis, K. (A2-09).	4	Huang, T. (C4-07)	24
Hofhuis, K. (B1-02).	11	Huang, T. (O7-12)	148
Hofhuis, K. (B1-05)	11	Huang, Y. (B1-05)	11
Hohlfeld, J. (M3-04)	118	Huang, Z. (E3-04)	40
Holcomb, M.B. (Q2-08).	163	Huang, Z. (I2-13)	78
Hollenbach, M. (O5-04).	144	Hubert, O. (F4-04).	52
Holmes-Hewett, W. (D1-11)	28	Hubert, O. (I5-03)	83
Holmes-Hewett, W. (I4-14)	82	Hudait, M. (A3-04)	5
Holmes-Hewett, W. (J5-09)	91	Hudait, M. (A3-05)	5
Holmes, S. (R1-13)	171	Huebl, H. (J4-07)	89
Holt, S.J. (E5-14)	45	Huebl, H. (P4-13).	155
Hon, K. (C5-06)	26	Hueso, L.E. (K4-09).	100
Hong, D. (G1-13).	58	Hueso, L.E. (O1-13).	137
Hong, J. (C5-07)	26	Hueso, L.E. (O4-02).	142
Hong, M. (M4-07)	120	Hueso, L.E. (Q4-05).	166
Hong, X. (S7-03)	134	Hug, H.J. (D1-04)	27
Hong, Y. (N3-14)	130	Hughes, B. (O2-01)	137
Hong, Y. (R5-03)	179	Hui, Y. (M2-14)	117
Honjo, H. (O2-03)	138	Hula, T. (E4-06)	42
Honjo, H. (O2-06)	138	Hula, T. (E4-10)	43
Hono, K. (H3-02).	71	Hung, C. (I4-06).	81
Hono, K. (H3-10).	72	Hung, C. (L4-02)	108
Hontecillas, I. (D1-05).	27	Hunt, D. (K2-13)	97
Hori, Y. (R1-02)	170	Hunt, M.O. (B1-15)	12
Horn, A. (G2-05)	59	Hunt, M.O. (C4-10)	24
Hosokai, Y. (K5-08)	102	Hurdequint, H. (N1-03)	125
Hotta, T. (K2-10)	97	Hurst, J. (P3-09).	153
Hou, J.T. (Q4-09).	166	Huxtable, A.J. (M5-02)	122
Hou, V.D. (S1-04)	34	Huy, P. (I4-06)	81
Hou, W. (M6-07)	124	Hwang, J. (J6-04).	92
Hou, W. (O3-03)	140	Hwang, K. (P1-06).	150
Houshang, A. (Q3-04)	164		
Hovorka, O. (I3-01)	79		
Hovorka, O. (N3-12)	130		
Hovorka, O. (Q2-09)	163		
Hovorka, O. (Q2-10)	163		
Hovorka, O. (R2-09)	173		
Howe, B.M. (A3-08)	6		
Howells, B. (J3-03)	87		
Howlader, C.Q. (G2-12).	60		
Hoyt, M. (J2-06)	86		
Hrabec, A. (A2-09)	4		
Hrabec, A. (B1-05).	11		

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Iacocca, E. (B1-01)	11
Iacocca, E. (N2-12)	128
Ibarra, M. (C5-05)	25
Ibe, T. (O1-14)	137
Ibrahim, F. (S7-02).	134
Ichimura, M. (N5-04).	132
Ichimura, T. (I4-15)	82
Ichinose, T. (R3-11)	175
Ichiyonagi, Y. (K5-08)	102

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Jiang, Z. (A3-04)	5	Kambayashi, M. (H3-10)	72
Jike, K. (I2-04)	77	Kamboj, I. (E2-03)	38
Jiles, D.C. (A4-12)	8	Kamimaki, A. (B3-10)	16
Jiles, D.C. (K5-06)	101	Kamimaki, A. (Q2-02)	162
Jiles, D.C. (K5-07)	101	Kamiya, N. (A3-07)	6
Jiles, D.C. (L4-14)	110	Kammerbauer, F. (R1-05)	170
Jimenez, A. (H1-02)	67	Kanai, S. (E3-02)	40
Jin, C. (K1-02)	94	Kanai, S. (J6-09)	93
Jin, F. (R5-04)	179	Kanai, S. (S8-02)	160
Jin, M. (K5-04)	101	Kanai, Y. (N3-01)	129
Jin, Y. (P3-11)	154	Kanai, Y. (N3-02)	129
Jin, Z. (F3-07)	50	Kanareykin, A. (G2-07)	59
Jin, Z. (N5-02)	132	Kane, A.M. (M2-04)	115
Jing, C. (G2-07)	59	Kane, M. (M2-01)	115
Jinnai, B. (O2-11)	139	Kaneta-Takada, S. (Q4-03)	165
Jiraskova, Y. (C3-13)	23	Kang, D. (O2-16)	139
Johansson, C. (Q2-11)	163	Kang, K. (D2-16)	30
Johansson, N. (M1-12)	114	Kang, K. (G3-09)	62
Johnsen, L.G. (L2-09)	106	Kang, K. (O1-04)	135
Johnson, C. (R5-07)	179	Kanki, T. (P6-10)	158
Johnson, D.D. (L4-06)	109	Kantorovich, S. (A4-15)	9
Joldos, M. (L2-04)	105	Kantorovich, S. (B2-07)	14
Jones, L. (S2-05)	35	Kantorovich, S. (K2-12)	97
Jones, N.J. (Q1-11)	161	Kao, C. (G5-04)	64
Jono, K. (R2-07)	173	Kao, I. (J4-01)	88
Jönsson, P.E. (B1-12)	12	Kapaklis, V. (B1-04)	11
Jönsson, P.E. (H3-03)	71	Kapaklis, V. (B1-12)	12
Jönsson, P.E. (M6-08)	124	Kapaklis, V. (C4-06)	24
Joseph, N. (D4-07)	33	Kapaklis, V. (I2-11)	78
Joseyphus, R.J. (E2-14)	39	Kapitan, D. (A2-04)	3
Joshi, N.N. (M2-15)	117	Kapitan, D. (D1-13)	28
Jotta Garcia, M. (B3-06)	16	Kapitan, D. (M5-05)	122
Jotta Garcia, M. (F3-08)	51	Kapitan, V.Y. (A2-04)	3
Joumard, I. (G4-02)	63	Kapitan, V.Y. (D1-13)	28
Joumard, I. (I3-11)	80	Kapitan, V.Y. (M5-05)	122
Joumard, I. (O2-02)	138	Kapteyn, H. (E1-07)	37
Jovičević Klug, M. (F3-01)	50	Kar, G.S. (E3-01)	40
Juang, J. (F2-02)	48	Kar, G.S. (L2-05)	105
Juge, R. (N1-10)	126	Kar, G.S. (O2-04)	138
Juge, R. (O3-07)	141	Kar, G.S. (R3-04)	174
Juge, R. (O3-08)	141	Karaiskaj, D. (I4-13)	82
Jung, M. (M6-04)	123	Karel, J. (H1-12)	69
Jung, M. (M6-05)	124	Karel, J. (J4-03)	89
Jungfleisch, M. (B1-11)	12	Karel, J. (J4-11)	90
Jungfleisch, M. (O4-12)	143	Karimeddiny, S. (J4-10)	90
Jungwirth, T. (J6-07)	93	Karki, U. (E1-03)	36
Jungwirth, T. (M1-09)	114	Karki, U. (O6-17)	146
Jurkin, T. (F4-12)	53	Karpenkov, A.Y. (F2-04)	48
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K R S, P. (H2-08)	70	Karpov, M.A. (Q1-09)	161
K, A. (A4-01)	7	Karumuri, S. (K2-10)	97
K.N., A. (M2-09)	116	Kashyap, A. (B4-06)	17
K.N., A. (Q6-06)	169	Kashyap, A. (B4-08)	18
K.S., B. (M2-09)	116	Kashyap, A. (C3-02)	22
Kačmarčík, J. (G6-09)	66	Kassem, M. (L1-04)	103
Kahmei, R.R. (C1-13)	20	Kataria, G. (M2-05)	115
Kainuma, R. (O7-14)	148	Katayama-Yoshida, H. (O1-12)	137
Kaisar, T. (P1-04)	150	Katayanagi, H. (K5-08)	102
Kaiser, M. (B2-07)	14	Katine, J. (G4-05)	63
Kákay, A. (A1-05)	2	Katine, J. (M3-07)	118
Kákay, A. (E4-06)	42	Kato, F. (H1-04)	68
Kákay, A. (E4-10)	43	Kato, F. (I1-07)	76
Kákay, A. (O6-05)	145	Kato, H. (D3-01)	31
Kakazei, G.N. (P2-11)	152	Kato, H. (F5-05)	53
Kakinuma, Y. (N4-02)	131	Kato, H. (F6-03)	55
Kalappattil, V. (G5-07)	65	Kato, H. (F6-04)	55
Kalappattil, V. (K2-07)	96	Kato, T. (A3-07)	6
Kalappattil, V. (P4-05)	154	Katoch, J. (J4-01)	88
Kalashnikova, A. (A3-13)	6	Katsuki, A. (C3-06)	22
Kalcheim, Y. (L2-01)	105	Katz, M.B. (G2-07)	59
Kalkan, B. (H2-03)	70	Kaul, S. (K1-12)	95
Kally, J. (S5-02)	111	Kaun, C. (K3-08)	98
Kalpana, G. (E1-05)	36	Kav, A. (G2-11)	60
Kaltenbrunner, M. (F3-12)	51	Kavand, M. (S4-02)	75
Kalvig, R. (I4-10)	82	Kawahara, T. (O2-14)	139
		Kay, A. (G1-11)	58
		Kaynar, M. (H2-03)	70
		Kazakova, O. (L1-01)	102

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Kazakova, O. (R1-06)	170	Kimura, K. (A2-06)	4
Kazin, P.E. (Q1-09)	161	Kimura, T. (P6-12)	158
KC, S. (A3-03)	5	Kinane, C. (M5-07)	122
KC, S. (A3-09)	6	Kinane, C. (S2-03)	35
KC, S. (E1-03)	36	King, D.I. (M5-10)	122
KC, S. (E1-06)	36	King, D.I. (M5-14)	123
Ke, L. (G5-02)	64	Kioussis, N. (P4-03)	154
Ke, M. (O2-14)	139	Kirby, B. (F1-04)	46
Keatley, P.S. (H1-15)	69	Kirby, B. (J5-01)	90
Keatley, P.S. (P2-10)	152	Kirihara, A. (M4-02)	120
Keavney, D. (D1-14)	28	Kirilyuk, A. (I2-11)	78
Kelly, N. (A4-04)	7	Kirilyuk, A. (P2-09)	152
Kent, A.D. (G1-04)	57	Kirimura, M. (J1-09)	85
Kent, A.D. (O4-05)	142	Kirk, E. (G3-07)	62
Kent, A.D. (P4-11)	155	Kishi, Y. (O2-14)	139
Kent, A.D. (R2-02)	172	Kishine, J. (L3-03)	106
Kent, A.D. (R2-05)	172	Kiskinova, M. (G3-05)	61
Kent, A.D. (R2-06)	173	Kitagawa, J. (P6-08)	158
Kent, A.D. (R3-05)	174	Kitamoto, Y. (C2-09)	21
Kent, A.D. (S5-03)	111	Kitcher, M.D. (M5-08)	122
Kent, N. (A1-06)	2	Kitcher, M.D. (R1-12)	171
Kepaptsoglou, D. (E2-10)	39	Kitcher, M.D. (R2-08)	173
Kerber, N. (G3-08)	62	Kiwa, T. (N5-15)	133
Kerber, N. (N1-05)	125	Kiwi, M. (D1-01)	26
Kerber, N. (N1-08)	126	Kiwi, M. (K2-06)	96
Kerber, N. (R1-05)	170	Klapetek, P. (R1-06)	170
Keskinbora, K. (E4-07)	42	Klaui, M. (G1-11)	58
Keswani, N. (B1-14)	12	Klaui, M. (G3-08)	62
Kewenig, M. (N2-08)	127	Klaui, M. (J4-05)	89
Khadka, D. (I4-13)	82	Klaui, M. (L1-05)	103
Khalili Amiri, P. (E4-13)	43	Klaui, M. (M1-02)	113
Khalili Amiri, P. (G4-05)	63	Klaui, M. (N1-05)	125
Khan, G.A. (M2-05)	115	Klaui, M. (N1-08)	126
Khan, K. (M6-11)	124	Klaui, M. (P4-07)	155
Khan, K. (P6-02)	157	Klaui, M. (R2-10)	173
Khan, M. (F2-05)	48	Kläui, P. (N2-10)	128
Khanal, P. (N4-07)	131	Kläui, P. (R1-05)	170
Khanduri, H. (F4-02)	52	Kläui, P. (S4-04)	75
Khatri, Y. (B4-08)	18	Klavins, P. (Q1-04)	161
Khodadadi, B. (O4-04)	142	Kleibert, A. (B1-05)	11
Khodadadi, M. (P5-11)	157	Kleibert, A. (I2-11)	78
Khokhlov, N. (A3-13)	6	Klein, O. (M4-09)	121
Khomskii, D. (A2-10)	4	Klein, O. (M4-11)	121
Khoo, K. (R2-02)	172	Klein, O. (N2-09)	128
Khovaylo, V. (F2-14)	49	Klein, O. (Q2-01)	162
Khovaylo, V. (L4-11)	110	Klein, O. (S8-01)	159
Khusyainov, D. (L3-07)	107	Kleiner, R. (E2-01)	38
Khymyn, R. (Q3-04)	164	Klevets, P. (F5-01)	53
Khymyn, R. (S8-02)	160	Klewe, C. (A3-08)	6
Kiaba, M. (Q6-02)	168	Klewe, C. (P2-10)	152
Kiarie, W.M. (A4-12)	8	Klič, A. (D2-09)	29
Kiarie, W.M. (L4-14)	110	Klinovaja, J. (O3-09)	141
Kiecana, A. (L4-01)	108	Klodowski, K. (P1-03)	149
Kikitsu, A. (N5-14)	133	Kmita, A. (P1-02)	149
Kim, B. (D3-08)	31	Knopke, C. (S3-01)	56
Kim, C. (F5-02)	53	Ko, K. (P6-13)	159
Kim, C. (F5-08)	54	Kobayashi, K. (G5-05)	65
Kim, D. (F6-07)	55	Kobayashi, K. (O1-14)	137
Kim, G. (F5-04)	53	Kobayashi, S. (C4-05)	24
Kim, J. (M3-12)	119	Kobayashi, S. (H3-02)	71
Kim, J. (N1-03)	125	Kobayashi, S. (O6-04)	145
Kim, J. (N2-14)	128	Koblischka-Veneva, A. (J3-09)	88
Kim, J. (R2-10)	173	Koblischka-Veneva, A. (M2-07)	116
Kim, J. (R3-04)	174	Koblischka, M.R. (J3-09)	88
Kim, J. (R3-09)	175	Koblischka, M.R. (M2-07)	116
Kim, K. (J4-04)	89	Kochat, V. (M2-15)	117
Kim, M. (F3-07)	50	Koda, A. (C2-09)	21
Kim, P. (A1-06)	2	Koelle, D. (E2-01)	38
Kim, S. (F6-07)	55	Koenig, A. (J3-04)	87
Kim, S. (G1-01)	57	Koerner, L.J. (L4-10)	109
Kim, S. (R2-01)	172	Koganezawa, T. (I4-15)	82
Kim, W. (L2-05)	105	Kohl, F. (N2-08)	127
Kim, W. (R5-15)	180	Kohno, R. (M4-09)	121
Kim, Y. (F3-07)	50	Kohno, R. (M4-11)	121
Kimel, A. (I2-11)	78	Kohno, R. (N2-09)	128
Kimel, A. (P2-06)	151	Kohno, R. (Q2-01)	162
Kimel, A. (P2-09)	152	Koike, K. (F6-03)	55

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Koike, K. (F6-04)	55	Kubota, H. (B3-05)	15
Koike, Y. (J4-02)	88	Kubota, H. (B3-10)	16
Kolesnikov, A. (E5-07)	44	Kubota, H. (F3-08)	51
Kolesnikov, A. (E5-13)	45	Kubota, H. (L2-03)	105
Kolezhuk, A. (F5-03)	53	Kubota, T. (E1-11)	37
Komine, T. (K4-08)	99	Kubota, T. (M4-06)	120
Komine, T. (O1-09)	136	Kubota, T. (O2-10)	138
Komineas, S. (M3-11)	119	Kuchi, R. (F6-07)	55
Komissinskiy, P. (H3-14)	72	Kudinoor, A.S. (E4-04)	42
Komogortsev, S. (C4-02)	23	Kudryavtsev, R. (C5-04)	25
Komogortsev, S. (O6-14)	146	Kudyukov, E. (D1-09)	27
Komogortsev, S. (R5-01)	178	Kudyukov, E. (M6-03)	123
Komogortsev, S. (R5-09)	179	Kuepferling, M. (O7-01)	147
Komori, M. (D3-01)	31	Kúkol'ová, A. (N1-07)	126
Komori, S. (K4-04)	99	Kukreja, R. (G2-02)	59
Komori, T. (R1-11)	171	Kulesh, N. (O6-18)	146
Kompouras, K. (E1-07)	37	Kumah, D. (R4-02)	176
Komura, E. (N4-02)	131	Kumar Nag, P. (S1-01)	34
Kondo, K. (K4-04)	99	Kumar, A. (M3-06)	118
Kondo, K. (K4-12)	100	Kumar, A. (M6-11)	124
Kononenko, D. (J6-05)	93	Kumar, A. (O5-08)	144
Kononova, M. (F2-14)	49	Kumar, A. (P6-02)	157
Kononova, M. (L4-11)	110	Kumar, A. (R5-12)	180
Konopelnik, Y. (F2-07)	48	Kumar, D. (F1-09)	47
Kons, C. (E2-02)	38	Kumar, D. (F2-06)	48
Koo, B. (B4-01)	17	Kumar, N. (J5-04)	91
Koo, T. (F3-07)	50	Kumar, P. (C4-12)	24
Koomson, V. (C1-06)	18	Kumar, P. (F4-02)	52
Koonkarnkhai, S. (N3-07)	129	Kumar, R. (I3-11)	80
Koonkarnkhai, S. (N3-09)	130	Kumar, R. (M2-05)	115
Koppes, A. (Q5-08)	168	Kumar, S. (B1-14)	12
Koppes, R. (Q5-08)	168	Kumar, S. (C1-03)	18
Koraltan, S. (B1-02)	11	Kumar, S. (D3-09)	32
Koraltan, S. (B1-05)	11	Kumar, S. (I4-12)	82
Körber, L. (E4-06)	42	Kumar, S. (Q3-07)	164
Körber, L. (Q4-01)	165	Kumar, V. (O3-12)	141
Korenistov, P. (H5-02)	74	Kumar, Y. (O6-03)	145
Koretsune, T. (M4-01)	119	Kumar, Y. (P6-03)	158
Korol, A.O. (D1-13)	28	Kumatani, A. (C5-01)	25
Korol, A.O. (M5-05)	122	Kumbhare, D. (J1-02)	84
Korostynski, C. (E2-03)	38	Kunchur, N. (J5-07)	91
Kortright, J. (E2-04)	38	Kundu, S. (L2-05)	105
Kosaka, T. (I1-03)	76	Kundys, B. (E3-08)	41
Koster, G. (Q6-02)	168	Kunstmann, J. (I2-09)	78
Kotter, S. (E2-05)	38	Kuo, M. (I4-03)	81
Kou, X. (P4-08)	155	Küpper, K. (C1-11)	19
Kovac, J. (H5-03)	74	Kura, H. (I4-15)	82
Kovalev, A.A. (M5-11)	122	Kurahashi, M. (L1-06)	103
Kovalev, A.A. (P4-09)	155	Kurian, J. (E3-08)	41
Kovintavewat, P. (N3-07)	129	Kurihara, K. (N3-01)	129
Kovintavewat, P. (N3-09)	130	Kurihara, K. (O7-03)	147
Kozlov, A.G. (M6-06)	124	Kurihara, K. (O7-13)	148
Kozlyakova, E.S. (Q1-09)	161	Kurlyandskaya, G.V. (J1-07)	85
Kraimia, M. (E4-09)	42	Kurokawa, Y. (Q4-06)	166
Král, D. (E1-11)	37	Kurosaki, Y. (N5-14)	133
Krasikov, A. (C4-02)	23	Kuroshima, S. (M4-02)	120
Kravchuk, V. (R1-09)	171	Kurta, R. (G3-06)	62
Kravtsov, E. (D1-09)	27	Kurzmann, A. (K4-09)	100
Krawczyk, M. (E4-02)	41	Kuschel, T. (C1-11)	19
Krawczyk, M. (E4-07)	42	Kuschel, T. (E1-11)	37
Krenkel, E. (K1-01)	94	Kuschel, T. (F1-05)	46
Krenn, H. (H1-06)	68	Kushibiki, R. (N3-03)	129
Kriegner, D. (E1-01)	36	Kusne, A.G. (P5-01)	156
Kriegner, D. (J6-07)	93	Kuswik, P. (E4-02)	41
Kriegner, D. (M1-09)	114	Kuszewski, P. (E4-09)	42
Krivorotov, I. (M3-07)	118	Kuttner, C. (J1-06)	85
Krizakova, V. (E3-01)	40	Kuwabiraki, Y. (C5-06)	26
Krizek, F. (G1-10)	58	Kuwahara, M. (I3-07)	80
Krizek, F. (J6-07)	93	Kuwahata, A. (Q5-02)	167
Kröger, R. (E2-10)	39	Kuznetsov, M.A. (A4-02)	7
Kronast, F. (F1-02)	46	Kuzovnikova, L. (G6-12)	67
Kronast, F. (G1-11)	58	Kvashnin, Y. (D2-10)	30
Krycka, K.L. (E2-02)	38	Kvashnin, Y. (E1-07)	37
Kryukova, O. (Q5-07)	167	Kwo, J. (M4-07)	120
Ksenzov, D. (G3-08)	62	Kwok, W. (L3-15)	108
Kubo, Y. (F6-04)	55	Kyle, S. (G4-07)	64
Kubomura, K.H. (H4-04)	73	Kyle, S.J. (A5-04)	10

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LaBella, V.P. (P6-06)	158	Lee, J. (G6-06)	66
Labracherie, V. (J5-07)	91	Lee, J. (M1-03)	113
Labusca, L. (Q5-03)	167	Lee, J. (N3-06)	129
Lachowicz, D. (P1-02)	149	Lee, J. (N3-14)	130
Lacour, D. (E4-11)	43	Lee, J.R. (K2-06)	96
Lacour, D. (G3-08)	62	Lee, K. (J4-04)	89
Lacour, D. (R1-05)	170	Lee, K. (J4-05)	89
Ladak, S. (B1-15)	12	Lee, K. (Q5-06)	167
Ladak, S. (C4-10)	24	Lee, K. (R2-01)	172
Ladygina, V. (C4-02)	23	Lee, K. (R2-10)	173
Lägel, B. (E4-12)	43	Lee, M. (H2-01)	69
Lägel, B. (N2-08)	127	Lee, M.S. (B1-06)	11
Lai, C. (N5-01)	132	Lee, S. (A3-12)	6
Lai, H. (F5-10)	54	lee, s. (J4-04)	89
Lai, H. (J5-06)	91	Lee, S. (J4-09)	90
Lambert, P.K. (Q1-11)	161	Lee, S. (M4-07)	120
Lammel, M. (E1-01)	36	Lee, S. (O1-14)	137
Lan, Q. (F6-02)	55	Lee, T. (A1-10)	3
Lancaster, T. (R2-09)	173	Lee, T. (L4-05)	109
Landeros, P. (A1-05)	2	Lee, T. (L4-10)	109
Langbein, W. (C4-10)	24	Lee, T. (L4-16)	110
Langridge, S. (M5-07)	122	Lee, T. (O2-05)	138
Lapa, P.N. (H2-01)	69	Lee, Y. (F6-06)	55
Lapa, P.N. (R2-10)	173	Lee, Y. (G5-02)	64
Lari, L. (E2-10)	39	Lee, Y. (G5-04)	64
Lasheras, A. (K1-10)	95	Lees, M. (E5-14)	45
Laskowski, R. (R2-02)	172	Legrand, W. (E5-08)	45
Latyshev, N. (Q5-07)	167	Legrand, W. (I3-09)	80
Lau, C. (O1-05)	135	Legrand, W. (I3-10)	80
Lau, J.W. (G2-07)	59	Legrand, W. (L1-11)	104
Lau, Y. (O1-11)	136	Lehman, B. (R5-07)	179
Lau, Y. (O4-09)	143	Leighton, C. (E2-03)	38
Laughlin, D.E. (P2-02)	151	Leighton, C. (K3-05)	98
Laur, V. (C1-01)	18	Leighton, C. (L2-02)	105
Laurenson, A. (I3-01)	79	Leighton, C. (M2-03)	115
Laureti, S. (Q5-04)	167	Leistner, K. (C4-08)	24
Laureti, S. (R3-14)	176	Leistner, K. (K1-03)	94
Laurson, L. (M3-13)	119	Lejeune, B. (H1-08)	68
Lavernia, E. (J2-06)	86	Leliaert, J. (L1-13)	104
Law, J. (E1-03)	36	Leliaert, J. (S3-04)	56
Law, J. (E1-06)	36	Leliaert, J. (S6-05)	112
Law, J. (F2-08)	48	Lelièvre-Berna, E. (D2-14)	30
Law, K. (A3-03)	5	Lemaître, A. (E4-09)	42
Law, K. (A3-09)	6	Lemaître, A. (M3-04)	118
Laydevant, J. (Q3-06)	164	Lendinez, S. (B1-11)	12
Lazpita, P. (A4-05)	7	Lenne, S. (E3-07)	40
Le Denmat, S. (I3-06)	80	Lenz, K. (C1-07)	19
Le Fevre, P. (E1-13)	37	Lenz, K. (E4-03)	41
Le Guyader, L. (G3-06)	62	Lenz, K. (M3-05)	118
Le, M. (A2-01)	3	Leo, N. (B1-02)	11
Leary, A. (J3-04)	87	Leo, N. (B1-05)	11
Lebedev, D. (O1-03)	135	Leo, N. (S6-05)	112
Lebourgeois, R. (C1-01)	18	Leon, A.O. (J5-11)	91
Lebrun, R. (B3-06)	16	Leone, A. (L3-06)	107
Lebrun, R. (C1-10)	19	Leonov, A.O. (D2-14)	30
Lebrun, R. (G1-11)	58	Lepalovskij, V. (D1-09)	27
Lebrun, R. (M1-02)	113	Lere-Adams, A.J. (D4-14)	33
Lebrun, R. (N2-10)	128	Leroux, N. (Q3-06)	164
Lebrun, R. (P4-07)	155	Leveille, C. (L1-11)	104
LeClair, P. (A3-09)	6	Lewinska, S. (E5-10)	45
LeClair, P. (E1-03)	36	Lewis, A. (L3-06)	107
LeClair, P. (E1-06)	36	Lewis, L. (H1-02)	67
Lee Koon Yap, S. (O2-15)	139	Lewis, L. (H1-08)	68
Lee Koon Yap, S. (O3-06)	140	Lewis, L. (Q5-08)	168
Lee, C. (N5-01)	132	Lewis, L. (R5-05)	179
Lee, C. (S1-04)	34	Lewis, L. (R5-07)	179
Lee, D. (J4-04)	89	Li, B. (P4-09)	155
Lee, H. (D3-08)	31	Li, C. (G1-08)	58
Lee, H. (H2-09)	70	Li, C. (I1-06)	76
Lee, H. (J4-04)	89	Li, C. (O3-06)	140
Lee, H. (M2-02)	115	Li, G. (I5-07)	83
Lee, H. (M3-07)	118	Li, H. (H5-04)	74
Lee, H. (O2-01)	137	Li, H. (P6-01)	157
Lee, H. (Q5-06)	167	Li, H. (Q4-06)	166
Lee, H. (Q5-09)	168	Li, J. (A4-13)	8
Lee, I. (B3-08)	16	Li, J. (D3-05)	31
		Li, J. (G1-08)	58

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Li, J. (G2-02)	59	Lisenkov, I. (I2-02)	77
Li, J. (I5-07)	83	Lisiecki, F. (E4-02)	41
Li, J. (J5-04)	91	Litvinenko, A. (B3-09)	16
Li, J. (M4-03)	120	Litvinenko, A. (C5-05)	25
Li, J. (O4-04)	142	Litvinenko, A. (M4-09)	121
Li, J. (S4-02)	75	Litvinenko, A. (Q2-01)	162
Li, L. (J3-10)	88	Litvinenko, A. (R3-08)	175
Li, M.P. (A3-06)	5	Litvinov, D. (P5-11)	157
Li, M.P. (I3-03)	79	Litzius, K. (G3-08)	62
Li, M.P. (R1-08)	171	Litzius, K. (N1-05)	125
Li, P. (S1-04)	34	Litzius, K. (N1-08)	126
Li, P. (S5-02)	111	Litzius, K. (R2-06)	173
Li, Q. (A3-08)	6	Liu, A. (G2-07)	59
Li, Q. (C1-04)	18	Liu, C. (A3-11)	6
Li, Q. (G2-05)	59	Liu, C. (C1-09)	19
Li, Q. (P2-09)	152	Liu, C. (G1-13)	58
Li, R. (J5-03)	91	LIU, C. (N1-06)	125
Li, S. (C5-07)	26	Liu, C. (O1-06)	136
Li, T. (O5-05)	144	Liu, C. (R5-10)	179
Li, W. (O6-15)	146	Liu, E. (O2-05)	138
Li, X. (I3-05)	80	Liu, E. (S1-01)	34
Li, X. (P5-06)	156	liu, f. (I2-13)	78
Li, X. (S1-04)	34	Liu, H. (I4-13)	82
Li, Y. (B3-02)	15	Liu, H. (I5-08)	83
Li, Y. (F4-08)	52	Liu, H. (R5-11)	180
Li, Y. (G5-08)	65	Liu, J. (D4-04)	32
Li, Y. (I5-02)	83	Liu, K. (F1-01)	46
Li, Y. (I5-08)	83	Liu, K. (I3-08)	80
Li, Y. (L3-15)	108	Liu, K. (L2-07)	105
Li, Y. (M3-02)	117	Liu, K. (L2-08)	106
Li, Y. (M3-03)	118	Liu, K. (O3-11)	141
Li, Y. (M4-03)	120	Liu, L. (G1-12)	58
Li, Y. (R4-01)	176	Liu, L. (K2-04)	96
Li, Y. (R5-11)	180	Liu, L. (M2-14)	117
Li, Z. (Q6-10)	169	Liu, L. (M4-03)	120
liang, J. (E1-12)	37	Liu, L. (Q4-09)	166
Liang, J. (R2-03)	172	Liu, L. (R1-01)	170
Liang, X. (N1-11)	126	Liu, M. (G5-07)	65
Liang, X. (P5-01)	156	Liu, M. (K2-07)	96
Liao, C. (K2-05)	96	Liu, P. (G5-13)	65
Liao, J. (R1-13)	171	Liu, P. (G6-10)	67
Liao, Z. (M2-02)	115	Liu, P. (K5-04)	101
Lichtenstein, A. (G3-06)	62	Liu, Q. (I2-10)	78
Liebl, M. (S3-03)	56	Liu, S. (G6-10)	67
Liensberger, L. (E4-10)	43	Liu, S. (G6-11)	67
Liensberger, L. (J4-07)	89	Liu, S. (I2-12)	78
Lik, O. (Q5-04)	167	Liu, S. (Q5-02)	167
Lilly, M.P. (M4-12)	121	Liu, T. (R4-01)	176
Lim Chee Beng, N. (O3-06)	140	Liu, W. (A1-04)	2
Lim, M. (J4-04)	89	Liu, W. (F2-16)	49
Lim, S. (O2-15)	139	Liu, X. (A1-06)	2
Lim, Y. (A3-04)	5	Liu, X. (C2-03)	20
Lim, Y. (O4-04)	142	Liu, X. (C2-08)	21
Lima Jr., E. (J1-08)	85	Liu, X. (H3-04)	71
Lin, C. (Q4-05)	166	Liu, X. (I4-09)	81
Lin, G. (F6-05)	55	Liu, X. (N1-11)	126
Lin, J. (E2-01)	38	Liu, Y. (J4-06)	89
Lin, J. (K5-01)	101	Liu, Y. (M4-07)	120
Lin, K. (G5-04)	64	Liu, Y. (M6-07)	124
Lin, P. (K2-08)	96	Liu, Y. (O3-03)	140
Lin, S. (S1-04)	34	Liu, Y. (P4-12)	155
Lin, W. (M2-14)	117	Liu, Y. (S5-02)	111
Lin, W. (P5-02)	156	Livesey, K. (D1-10)	27
Lin, Y. (C4-07)	24	Livesey, K. (E4-04)	42
Lin, Y. (O7-12)	148	Livesey, K. (I5-05)	83
Lin, Z. (D4-09)	33	Livesey, K. (Q2-09)	163
Lin, Z. (F6-08)	56	Livesey, K. (Q2-10)	163
Lin, Z. (J3-05)	87	Liz-Marzán, L. (J1-06)	85
Lin, Z. (R3-10)	175	Llacsahuanga Allcca, A.E. (G5-10)	65
Linder, J. (L2-09)	106	Llois, A.M. (I4-07)	81
Lindgren, B. (I2-11)	78	Lloyd, B. (M4-12)	121
Lindner, J. (E3-08)	41	Lo Conte, R. (F1-01)	46
Lindner, J. (E4-03)	41	Lo Conte, R. (M3-04)	118
Lindner, J. (M3-05)	118	Lo Conte, R. (O3-11)	141
Lindner, J. (O7-08)	148	Lo, T. (J4-06)	89
Linfield, E. (M5-02)	122	Lobo-Checa, J. (B2-04)	13
Lipp, V. (G3-05)	61		

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Locatelli, A. (R2-11)	173	Macaluso, E. (D2-03)	29
Lochner, E. (R4-01)	176	Maccari, F. (H3-09)	72
Lograsso, T.A. (D2-14)	30	Maccari, F. (Q1-06)	161
Lohmann, M. (S4-02)	75	Maccherozzi, F. (G1-10)	58
Loidl, A. (A2-10)	4	Maccherozzi, F. (G4-07)	64
Lomakin, V. (O2-07)	138	Maccherozzi, F. (H1-15)	69
Lomakin, V. (P3-05)	153	Maccherozzi, F. (J6-07)	93
Lomakin, V. (P4-11)	155	Maccherozzi, F. (M1-09)	114
Lomakin, V. (R3-10)	175	Macedo, R. (E4-04)	42
Lone, A. (C5-08)	26	Machado, F. (K1-14)	95
Lonsky, M. (N1-02)	125	Madhogaria, R.M. (L4-02)	108
Loomis, L. (G4-03)	63	Magara, H. (O6-04)	145
Lopes Seeger, R. (O3-08)	141	Magen, C. (A1-02)	1
Lopes, A. (K1-10)	95	Magen, C. (D1-12)	28
Lopez Dominguez, V. (E4-13)	43	Magen, C. (E2-01)	38
Lopez Dominguez, V. (G4-05)	63	Magén, C. (L1-03)	103
López Paz, S.A. (J3-08)	87	Magni, A. (J2-03)	86
López Tabares, J. (R5-02)	178	Magno, J.F. (D4-08)	33
López-Ortega, A. (O6-10)	146	Magrez, A. (N1-07)	126
Lopez-Quintas, I. (G3-08)	62	Mahajan, R. (C3-02)	22
López, M. (L4-08)	109	Mahat, R. (E1-03)	36
Losby, J.E. (G2-11)	60	Mahat, R. (E1-06)	36
Losby, J.E. (N5-16)	133	Mahato, R.N. (L4-04)	109
Loss, D. (O3-09)	141	Mahato, R.N. (R5-12)	180
Lostun, M. (H1-01)	67	Mahendiran, R. (E1-08)	37
Lott, D. (R4-05)	177	Mahendiran, R. (Q6-05)	169
Loudon, J. (I3-01)	79	Mai, T.T. (G5-11)	65
Louis, S. (B3-09)	16	Mai, T.T. (O1-05)	135
Louis, S. (R3-08)	175	Mai, T.T. (O1-10)	136
Lourebam, J. (O2-15)	139	Mailly, D. (N1-10)	126
Lovery, B. (I3-11)	80	Maity, A. (O3-11)	141
Lu, J. (O1-07)	136	Majetich, S. (G4-04)	63
Lu, X. (E1-04)	36	Majetich, S. (G4-06)	64
Lu, Y. (O1-05)	135	Majetich, S. (Q2-11)	163
Lu, Z. (C3-14)	23	Majetich, S. (R3-06)	174
Luber, E. (G2-11)	60	Major, M. (H3-14)	72
Luders, U. (H2-08)	70	Mak, K. (O1-04)	135
Luengo, Y. (F2-18)	49	Makarov, A. (D1-13)	28
Luis, F. (D2-03)	29	Makarov, D. (A1-05)	2
Lujan, D. (I3-05)	80	Makarov, D. (F3-12)	51
Lumetzberger, J. (C1-07)	19	Makarov, D. (I4-01)	81
Luna, C. (H5-03)	74	Makarov, D. (J6-05)	93
Lunacek, J. (C3-13)	23	Makarov, D. (R1-09)	171
Lunghi, A. (D2-01)	28	Makarov, D. (R4-03)	176
Luo, Y. (G1-13)	58	Makarova, K. (D1-13)	28
Luo, Z. (A2-09)	4	Makarovsky, O. (M1-09)	114
Luo, Z. (G3-07)	62	Malaviya, D. (F2-05)	48
Luo, Z. (J6-11)	93	Maletinsky, P. (L1-09)	103
Luo, Z. (R3-01)	174	Malik, M.A. (M2-05)	115
Lupu, N. (H1-01)	67	Malinowski, G. (G3-02)	61
Lupu, N. (N5-09)	133	Malinowski, G. (M3-04)	118
Lupu, N. (Q5-03)	167	Malinowski, G. (P2-01)	151
Lupu, N. (R5-08)	179	Mallah, T. (D2-05)	29
Luzanov, V. (R4-11)	178	Mallick, D. (C3-10)	22
Lv, Y. (G4-01)	63	Mallick, D. (K1-06)	94
Lv, Y. (H4-01)	72	Maloberti, O. (O5-07)	144
Lv, Y. (K2-04)	96	Mamiya, H. (C3-01)	21
Lyakh, A.S. (F5-09)	54	Manchanda, P. (E2-12)	39
Lykkebø, O. (P3-06)	153	Manchon, A. (O4-04)	142
Lynnyk, A. (E5-10)	45	Manchon, A. (S4-01)	75
- M -			
M. (L4-04)	109	Mancilla, D. (C5-05)	25
M. (R5-12)	180	Mancilla, D. (E5-01)	44
M. Shaw, J. (C1-02)	18	Mancoff, F.B. (O2-01)	137
M. Shaw, J. (C1-12)	19	Mandru, A. (D1-04)	27
M. Shaw, J. (E1-07)	37	Mandrus, D. (C3-14)	23
M. Shaw, J. (R2-06)	173	Manfreda, M. (G3-05)	61
Ma, B. (D4-04)	32	Manfrinetti, P. (A4-18)	9
Ma, C. (R2-06)	173	Mangin, P. (J1-04)	85
Ma, J. (N5-07)	133	Mangin, S. (F2-01)	47
Ma, T. (O3-12)	141	Mangin, S. (G3-02)	61
Ma, Y. (K2-13)	97	Mangin, S. (M3-04)	118
Maat, S. (I5-05)	83	Mangin, S. (O2-11)	139
Maazaz, Z. (I5-03)	83	Mangin, S. (P2-01)	151
Macaluso, E. (D2-02)	29	Mangin, S. (R1-05)	170
		Manipatruni, S. (Q4-05)	166
		Mankey, G. (L3-06)	107
		Manna, P.K. (D1-02)	26

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Mansell, R. (F1-02)	46	Matsumoto, Y. (A2-06)	4
Mansell, R. (F1-03)	46	Matsuo, M. (O4-06)	142
Mansell, R. (N4-06)	131	Matsuura, K. (F5-05)	53
Mansouri Tehrani, A. (H2-07)	70	Matsuura, K. (P4-06)	154
Mansouri, S. (F2-02)	48	Matsuyama, K. (N3-01)	129
Mansueto, M. (G4-02)	63	Matsuyama, K. (O7-03)	147
Mantel, A. (L2-06)	105	Matsuyama, K. (O7-13)	148
Mao, Z. (O1-05)	135	Mattayakan, M. (N3-07)	129
Marangolo, M. (O7-16)	149	Mattevi, C. (K4-03)	99
Marchenkov, V. (H5-02)	74	Matyushov, A. (F3-11)	51
Marchenkov, V. (H5-05)	74	Matyushov, A. (I2-02)	77
Marchenkov, V. (J5-08)	91	May, A. (B1-15)	12
Marchenkov, V. (K4-13)	100	Mayoh, D. (E5-14)	45
Marchenkov, V. (L4-07)	109	Mayr, S. (E4-03)	41
Marchfield, D. (A4-13)	8	Mayr, S. (R3-01)	174
Marchi, F. (S3-02)	56	Maziewski, A. (E5-10)	45
Marciesky, M. (I2-13)	78	Mazza, A.R. (D2-06)	29
Marcos, J. (B2-14)	15	Mazzoli, C. (S6-04)	112
Margaillan, F. (E4-09)	42	Mccall, S. (C2-05)	20
Marić, I. (F4-12)	53	Mccall, S. (I2-01)	77
Marin, J.M. (K1-14)	95	McCloy, J. (D4-14)	33
Marin, P. (E2-13)	39	McCollum, E. (A3-11)	6
Marin, P. (H1-08)	68	McCord, J. (F3-01)	50
Marin, P. (H1-09)	68	McCord, J. (F3-11)	51
Marinella, M.J. (A5-01)	9	McCreary, A. (G5-11)	65
Marinella, M.J. (A5-02)	10	McCreary, A. (O1-05)	135
Marinella, M.J. (A5-03)	10	McCreary, A. (O1-10)	136
Marinella, M.J. (A5-05)	10	McCullian, B. (B3-08)	16
Marinella, M.J. (A5-06)	10	McDonald, N.R. (G4-03)	63
Maripdeddi, R. (L2-03)	105	McDonough, C. (K5-01)	101
Markou, A. (E1-01)	36	McGhie, H. (F1-11)	47
Marković, D. (Q3-06)	164	McGrath, B.R. (D1-10)	27
Marqués Marchán, J. (O5-02)	144	McKeefry, C. (Q4-04)	165
Marrows, C.H. (J5-05)	91	McKeever, C. (L3-14)	108
Marrows, C.H. (M5-02)	122	McMaster, M.R. (A3-10)	6
Marrows, C.H. (M5-07)	122	McMichael, R.D. (L1-08)	103
Marshall, A. (N4-08)	131	McNeill, K. (N3-05)	129
Marshall, R.A. (J3-03)	87	McNulty, J. (D1-11)	28
Martin, E. (M3-04)	118	McPhearson, D. (E2-04)	38
Martin, E. (Q3-06)	164	McPherson, D. (O6-11)	146
Martin, E.L. (Q5-01)	167	McVitie, S. (A1-02)	1
Martin, I. (S1-02)	34	McVitie, S. (L1-10)	104
Martín, J. (L1-10)	104	Medapalli, R. (R1-12)	171
Martin, J. (O5-01)	143	Mehta, A. (M2-01)	115
Martin, M. (K4-03)	99	Mehta, A. (M2-04)	115
Martin, M. (O3-13)	141	Mehta, J. (G2-02)	59
Martínez Criado, G. (H1-05)	68	Mehta, U.M. (J1-01)	84
Martínez-García, J.C. (P1-05)	150	Mei, A. (M1-03)	113
Martínez-García, J.C. (Q1-10)	161	Mello, A. (C1-08)	19
Martínez-Perez, M. (E2-01)	38	Melo, J.J. (M6-01)	123
Martínez, B. (D1-12)	28	Memshawy, S. (M3-08)	118
Martínez, J. (D2-03)	29	Mendawar, B. (A5-02)	10
Martínez, Y. (B2-07)	14	Mendes, J.B. (R4-09)	177
Martino, L. (J2-03)	86	Mendisch, S. (E5-02)	44
Martins, L. (B3-03)	15	Mendoza-Reséndez, R. (H5-03)	74
Martins, L. (Q3-06)	164	Meng, C. (G6-11)	67
Martins, M. (M6-09)	124	Meng, F. (A1-09)	2
Marty, A. (Q4-05)	166	Meng, F. (R1-13)	171
Martyszhkin, A.A. (O6-09)	146	Meng, K. (K2-13)	97
Mary, A. (O6-12)	146	Mengucci, P. (Q5-04)	167
Mascaraque, A. (F1-01)	46	Menniti, M. (B1-02)	11
Mason, J. (B1-06)	11	Menniti, M. (S6-05)	112
Mason, N. (S1-03)	34	Mentink, J. (N2-02)	127
Masuda, H. (O4-09)	143	Meny, C. (D1-08)	27
Masuda, K. (M4-06)	120	Meny, C. (F1-10)	47
Mata, R. (Q1-04)	161	Meo, A. (O6-01)	145
Mathaudhu, S. (G3-01)	61	Meo, A. (P2-05)	151
Matheis, L. (R4-05)	177	Merbouche, H. (C1-10)	19
Mathias, S. (E1-07)	37	Merbouche, H. (K1-07)	94
Matos, I.T. (F5-11)	54	Merbouche, H. (N2-07)	127
Matos, I.T. (R5-13)	180	Mercadier, L. (G3-06)	62
Matsui, N. (I1-03)	76	Merchán, L. (B2-14)	15
Matsuki, H. (D3-07)	31	Mercurio, G. (G3-06)	62
Matsuki, H. (D3-10)	32	Mertig, I. (O3-01)	140
Matsumori, H. (I1-03)	76	Mertig, I. (O3-12)	141
Matsumoto, K. (F1-08)	47	Mesa, J. (H1-02)	67
Matsumoto, K. (O7-14)	148	Mewes, C. (A3-03)	5

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Mewes, C. (A3-04)	5	Miyazaki, Y. (H5-04)	74
Mewes, C. (A3-06)	5	Miyazawa, Y. (I2-04)	77
Mewes, C. (A3-09)	6	Mizrahi, A. (Q3-06)	164
Mewes, C. (I3-03)	79	Mizuguchi, M. (I4-15)	82
Mewes, C. (J3-04)	87	Mizuguchi, M. (O2-10)	138
Mewes, C. (L3-06)	107	Mizukami, S. (C5-01)	25
Mewes, C. (O6-17)	146	Mizukami, S. (E3-02)	40
Mewes, C. (R2-08)	173	Mizukami, S. (E3-03)	40
Mewes, T. (A3-03)	5	Mizukami, S. (J4-02)	88
Mewes, T. (A3-04)	5	Mizukami, S. (Q2-02)	162
Mewes, T. (A3-05)	5	Mizukami, S. (R3-11)	175
Mewes, T. (A3-06)	5	Mizuno, Y. (F6-04)	55
Mewes, T. (A3-09)	6	Mizutani, D. (I1-03)	76
Mewes, T. (I3-03)	79	Mo, C. (F6-06)	55
Mewes, T. (J3-04)	87	Mo, W. (R5-04)	179
Mewes, T. (L3-06)	107	Modak, R. (O4-09)	143
Mewes, T. (O6-17)	146	Moeller, T.B. (P2-11)	152
Mewes, T. (R2-08)	173	Mohan, R. (G3-01)	61
Meyers, D. (I5-05)	83	Mohanty, H.N. (E5-12)	45
Mi, W. (G5-09)	65	Mohanty, J.R. (E5-12)	45
Mi, W. (I4-02)	81	Mohanty, J.R. (O5-09)	144
Mi, W. (Q6-10)	169	Mohanty, P. (H2-05)	70
Mi, W. (R2-03)	172	Mohanty, P. (P5-10)	157
Mican, S. (L2-04)	105	Mohapatra, J. (G5-13)	65
Michaelis de Vasconcellos, S. (M4-08)	120	Mohapatra, J. (K5-04)	101
Michaelis de Vasconcellos, S. (Q4-10)	166	Mohd Noor Sam, M. (N5-02)	132
Michel, E.G. (F1-01)	46	Mohelsky, I. (H5-01)	74
Michez, L. (I4-10)	82	Mohseni, M. (N2-08)	127
Middelkamp, M. (M4-10)	121	Mokrousov, Y. (G3-08)	62
Migliorini, A. (O4-01)	142	Mokrousov, Y. (J4-05)	89
Mignard, M. (P1-01)	149	Mokrousov, Y. (O3-04)	140
Miki, S. (N1-06)	125	Mole, R. (A2-01)	3
Mila, F. (A2-09)	4	Molina-Luna, L. (H3-14)	72
Milinska, E. (E5-10)	45	Molodtsov, S. (G3-06)	62
Milkovic, O. (H5-03)	74	Momose, S. (I3-07)	80
Miller, J. (I4-14)	82	Mondelli, C. (A4-05)	7
Mills, C. (Q5-08)	168	Monson, T. (J2-06)	86
Mills, S.C. (E2-08)	39	Monteblanco, E. (F3-02)	50
Milošević, M.V. (O7-06)	147	Monton, C. (K2-06)	96
Min, B. (J4-04)	89	Montoya, I. (D1-01)	26
Mina, M. (G6-01)	66	Montoya, S. (N1-01)	125
Mina, M. (I2-16)	79	Moodera, J.S. (R4-09)	177
Minami, S. (M4-01)	119	Moody, S. (I3-01)	79
Mineo, F. (M3-12)	119	Moore, T. (H1-15)	69
Minikayev, R. (E5-10)	45	Moorsom, T. (D1-07)	27
Minuti, A. (Q5-03)	167	Morales, I. (E2-13)	39
Misba, W. (O2-13)	139	Morales, M.P. (F2-18)	49
Mishchenko, A.S. (P6-07)	158	Morales, M.P. (P1-05)	150
Mishina, E. (L3-07)	107	Morales, R. (D1-01)	26
Mishina, E. (L3-08)	107	Morali, N. (S1-01)	34
Mishra, A. (H1-11)	68	Morel, L. (N5-13)	133
Mishra, A. (O4-11)	143	Moreno-Ramirez, L.M. (A4-09)	8
Mishra, K. (I2-11)	78	Mori, K. (N5-16)	133
Mishra, S.R. (H4-05)	73	Morishima, K. (K4-12)	100
Misirliloglu, I. (Q1-02)	160	Moro, M.V. (C1-07)	19
Mitobe, K. (K5-03)	101	Moro, M.V. (I2-11)	78
Mitrofanov, A. (K3-01)	97	Morozkin, A.V. (A4-17)	9
Mittelstaedt, J.A. (J4-10)	90	Morrison, K. (E1-10)	37
Mittelstaedt, J.A. (O1-04)	135	Morrison, K. (E4-14)	43
Mitteramskogler, T. (B1-13)	12	Morshed, M. (R2-02)	172
Miura, A. (M4-06)	120	Mosey, A. (N4-08)	131
Miura, D. (M4-04)	120	Moskalev, M. (D1-09)	27
Miura, Y. (M4-06)	120	Mostarac, D. (A4-15)	9
Miwa, S. (M4-01)	119	Mottaghi, N. (Q2-08)	163
Miwa, S. (O4-07)	143	Moulin, J. (F3-02)	50
Mix, T. (Q1-08)	161	Moulin, J. (F3-08)	51
Miyahara, S. (D3-07)	31	Moyano, A. (P1-05)	150
Miyahara, S. (D3-10)	32	Mucha, N. (F1-09)	47
Miyamoto, Y. (R1-02)	170	Mucha, N. (F2-06)	48
Miyamura, H. (C3-01)	21	Muchharla, B. (G5-07)	65
Miyashita, S. (C2-01)	20	Muchharla, B. (K2-07)	96
Miyazaki, K. (P6-12)	158	Muchharla, B. (P1-06)	150
Miyazaki, T. (I1-03)	76	Mudgal, R. (M3-06)	118
Miyazaki, T. (L3-10)	107	Mudryk, Y. (F2-12)	49
Miyazaki, Y. (F5-12)	54	Mudryk, Y. (J5-14)	92
		Mudryk, Y. (L4-06)	109
		Muduli, P.K. (M3-06)	118

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Nikitov, S. (O7-07)	148	Ogrin, F. (Q5-01)	167
Nikitov, S. (O7-10)	148	Oh, J. (J4-04)	89
Nikitov, S. (R4-11)	178	Oh, J. (S1-03)	34
Nikolaev, S.A. (B4-02)	17	Ohashi, K. (F6-03)	55
Nikolaev, S.A. (P5-07)	156	Ohkoshi, S. (C1-05)	18
Nikonov, D. (Q4-05)	166	Ohkoshi, S. (I2-05)	77
Ning, S. (P5-14)	157	Ohkubo, T. (H3-02)	71
Niraula, G. (C1-08)	19	Ohkubo, T. (H3-10)	72
Nishida, K. (P6-09)	158	Ohldag, H. (G1-04)	57
Nishimoto, S. (A2-01)	3	Ohldag, H. (M3-05)	118
Nishino, M. (C2-01)	20	Ohldag, H. (O4-12)	143
Nishio-Hamane, D. (H3-08)	72	Ohmer, D. (A4-07)	8
Nishio-Hamane, D. (M4-01)	119	Ohmer, D. (A4-08)	8
Nishio, T. (I4-15)	82	Ohmer, D. (H3-14)	72
Nishioka, K. (O2-06)	138	Ohnishi, K. (P6-12)	158
Nlebedim, I.C. (B2-09)	14	Ohno, H. (B1-14)	12
Nlebedim, I.C. (C2-03)	20	Ohno, H. (J6-09)	93
Nlebedim, I.C. (C2-08)	21	Ohno, H. (O2-11)	139
Nlebedim, I.C. (H3-04)	71	Ohno, H. (S8-02)	160
Nodo, S. (P6-14)	159	Ohno, Y. (B1-14)	12
Noebe, R. (J3-04)	87	Ohshima, R. (J4-07)	89
Noël, P. (N2-09)	128	Ohshima, R. (L3-11)	108
Noël, P. (Q4-11)	166	Ohshima, R. (M3-01)	117
Noël, P. (R4-10)	178	Ohta, H. (F6-03)	55
Nogovitsyna, T. (E5-03)	44	Ohta, T. (G5-05)	65
Noguchi, N. (N5-11)	133	Ohya, S. (Q4-03)	165
Noh, M. (C3-05)	22	Ok, J. (H2-09)	70
Noky, J. (E1-01)	36	Ok, J. (M2-02)	115
Nomoto, T. (M4-01)	119	Okada, Y. (G5-05)	65
Nomura, E. (O6-04)	145	Okada, Y. (O1-14)	137
Nomura, H. (C5-06)	26	Okamoto, S. (H2-09)	70
Nomura, H. (N1-06)	125	Okano, G. (C5-02)	25
Nordström, L. (D2-10)	30	Okawauchi, Y. (I1-03)	76
Nossof, A.P. (P5-03)	156	Okita, C. (F6-03)	55
Nouailhetas, Q. (J3-09)	88	Okita, K. (H4-03)	73
Novák, V. (G1-10)	58	Okubo, S. (F6-03)	55
Novák, V. (J6-07)	93	Okuno, H. (R1-11)	171
Novák, V. (M1-09)	114	Oleaga, A. (A4-17)	9
Novati, A. (Q4-11)	166	Oleaga, A. (A4-18)	9
Novosad, V. (L3-15)	108	Olejník, K. (M1-09)	114
Novosad, V. (M3-03)	118	Olive Méndez, S. (L4-03)	109
Novosad, V. (O4-12)	143	Oliveira, J. (L4-12)	110
Novosad, V. (S5-02)	111	Oliveira, L.L. (M6-01)	123
Nowak, U. (N1-05)	125	Olivier, A. (P2-09)	152
Nozaki, T. (L2-03)	105	Ollefs, K. (H3-14)	72
Nozaki, Y. (C5-02)	25	Olleros-Rodríguez, P. (N1-09)	126
Nozaki, Y. (E4-08)	42	Omori, Y. (M4-02)	120
Nozaki, Y. (O4-06)	142	One, R. (L2-04)	105
Nozawa, K. (H4-03)	73	Ono, K. (H1-03)	67
Ntallis, N. (B2-05)	14	Ono, S. (P6-14)	159
Ntallis, N. (B2-13)	14	Onodera, Y. (R3-11)	175
Ntallis, N. (E2-02)	38	Ontoso, N. (K4-09)	100
Nunez, A. (A4-11)	8	Ontoso, N. (O1-13)	137
Núñez, A. (E5-01)	44	Onur Mentés, T. (R2-11)	173
- O -			
O'Brien, J. (L3-01)	106	Oogane, M. (F3-06)	50
O'Brien, L. (K3-05)	98	Oogane, M. (F3-07)	50
Obinata, S. (P6-12)	158	Oogane, M. (N5-02)	132
Och, M. (K4-03)	99	Opel, M. (P4-13)	155
Ochirkhuyag, T. (D4-10)	33	Opelt, K. (C2-06)	21
Odeh, Y.N. (Q1-02)	160	Ophus, C. (F1-01)	46
Odintsov, S. (O7-10)	148	Ophus, C. (O3-11)	141
Odkhuu, D. (D4-10)	33	Oppeneer, P.M. (I2-11)	78
Odkhuu, D. (D4-11)	33	Orlandi, F. (F2-15)	49
Oepen, H. (G3-05)	61	Ortega, D. (S3-05)	57
Oepen, H. (R4-05)	177	Ortega, J. (S3-05)	57
Oezelt, H. (P3-01)	152	Ortix, C. (R4-03)	176
Ogata, K. (I2-05)	77	Ortiz Jimenez, V. (G5-07)	65
Ogawa, D. (H3-10)	72	Ortiz Jimenez, V. (K2-07)	96
Ogawa, T. (N3-03)	129	Ortiz Jimenez, V. (P1-06)	150
Ogawa, Y. (H3-08)	72	Ortiz, V.H. (G3-01)	61
Ogloblichev, V.V. (H2-12)	71	Oshima, D. (A3-07)	6
Ognev, A. (E5-07)	44	Ostler, T. (P2-06)	151
Ognev, A. (E5-13)	45	Ostler, T. (R1-06)	170
Ogrin, F. (I3-01)	79	Östman, E. (B1-12)	12
		Ota, M. (O2-09)	138
		Otani, Y. (S4-05)	75
		Otubo, L. (F5-11)	54

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Sahu, P. (K4-14)	100	Sanvito, S. (P4-03)	154
Sai, R. (C1-13)	20	Sanyal, B. (H2-04)	70
Sai, R. (I2-04)	77	Sanz-Hernandez, D. (A1-02)	1
Saied, J. (C1-01)	18	Sanz-Hernandez, D. (A1-09)	2
Saika-Voivod, I. (P3-04)	153	Sapkota, A. (A3-03)	5
Saito, G. (H3-10)	72	Sapkota, A. (A3-04)	5
Saito, H. (K3-04)	98	Sapkota, A. (A3-06)	5
Saito, S. (N3-03)	129	Sapkota, A. (I3-03)	79
Saito, T. (D4-13)	33	Sapkota, A. (O6-17)	146
Saito, T. (H3-05)	71	Sapozhnikov, M.V. (A4-02)	7
Saito, T. (H3-08)	72	Saren, H. (O6-03)	145
Saito, T. (N3-03)	129	Saren, H. (P6-03)	158
Saito, Y. (F6-03)	55	Sari, D. (J3-08)	87
Saito, Y. (P6-11)	158	Sarkar, A. (B2-09)	14
Saitoh, E. (M1-02)	113	Sarkar, A. (C2-03)	20
Saitoh, E. (P4-07)	155	Sarkar, A. (R4-04)	177
Sakai, A. (A2-06)	4	Sarnavskii, N. (M6-06)	124
Sakai, A. (M4-01)	119	Sasaki, D.Y. (B1-06)	11
Sakai, K. (G5-05)	65	Sasaki, D.Y. (L2-01)	105
Sakai, K. (N5-15)	133	Sasaki, D.Y. (M2-04)	115
Sakai, N. (D3-01)	31	Sasaki, S. (D3-10)	32
Sakai, T. (A2-07)	4	Sasaki, S. (G5-01)	64
Sakakibara, M. (G2-13)	60	Sasaki, T. (N4-02)	131
Sakakibara, T. (A2-06)	4	Sassi, Y. (E5-08)	45
Sakakibara, Y. (O4-06)	142	Sassi, Y. (I3-09)	80
Sakuma, A. (M4-04)	120	Sassi, Y. (I3-10)	80
Sakuraba, Y. (M4-06)	120	Sassi, Y. (L1-11)	104
Sakuraba, Y. (O4-09)	143	Sassi, Y. (N1-03)	125
Sala, G. (E3-01)	40	Sassi, Y. (O3-13)	141
Sala, G. (R3-01)	174	sato, f. (D3-07)	31
Salahuddin, S. (J4-03)	89	sato, f. (D3-10)	32
Salahuddin, S. (J4-11)	90	Sato, F. (J1-09)	85
Salazar-Henao, N.A. (R5-02)	178	Sato, H. (F6-04)	55
Salazar, A. (A4-17)	9	Sato, H. (H1-04)	68
Salazar, A. (A4-18)	9	Sato, H. (I1-07)	76
Salazar, D. (H3-07)	71	Sato, N. (Q4-01)	165
Sales, F.H. (M6-01)	123	Sato, S. (Q4-03)	165
Sales, T.S. (D4-08)	33	Sato, T. (O6-04)	145
Sales, T.S. (F5-06)	54	Satoh, T. (O7-14)	148
Sales, T.S. (F5-11)	54	Sauer, V. (G2-11)	60
Sales, T.S. (R5-13)	180	Saugar, E. (R1-06)	170
Salev, P. (L2-01)	105	Saurina, J. (L4-09)	109
Salev, P. (R2-10)	173	Sauter, R. (E4-07)	42
Salikhov, R. (O7-08)	148	Savero Torres, W.F. (O1-01)	135
Sall, M. (N1-10)	126	Savovici, A. (P3-11)	154
Salloum, E. (O5-07)	144	Saw, A.K. (Q6-08)	169
Salvador, M. (P1-05)	150	Sawa, T. (D3-10)	32
Samanta, T. (K2-02)	96	Sawada, R. (M4-02)	120
Samardak, A. (E5-07)	44	Sawicki, M. (M1-09)	114
Samardak, A.S. (E5-07)	44	Saxena, R.N. (D4-08)	33
Samardak, A.S. (E5-13)	45	Saxena, R.N. (F5-06)	54
Samarth, N. (S5-02)	111	Saxena, R.N. (F5-11)	54
Sambi, M. (B2-03)	13	Saxena, R.N. (R5-13)	180
Sambi, M. (B2-04)	13	Sayed, S. (J4-11)	90
Samsonov, K. (C5-04)	25	Sayedaghaee, S. (P5-05)	156
San Emeterio Alvarez, L. (B3-04)	15	Scagnoli, V. (G3-07)	62
San Emeterio Alvarez, L. (M3-08)	118	Scalise, L. (F5-06)	54
Sanchez Hazen, D. (O2-02)	138	Scaramuzzi, G. (N2-11)	128
Sánchez Llamazares, J.L. (L4-08)	109	Schaefer, L. (H3-09)	72
Sánchez Valdés, C.F. (L4-08)	109	Schäfer, R. (K1-03)	94
Sánchez-Agudo, M. (H1-05)	68	Schaffers, T. (E4-03)	41
Sánchez-Tejerina, L. (M1-08)	114	Schaffers, T. (M3-05)	118
Sanchez, J. (H1-09)	68	Schanilec, V. (A2-05)	3
Sánchez, P.A. (A4-15)	9	Schánilec, V. (A2-08)	4
Sánchez, P.A. (A4-16)	9	Scheibel, F. (F2-03)	48
Sandeman, K.G. (F2-10)	49	Scheibel, F. (F2-04)	48
Sandhoefner, S. (M5-11)	122	Scheibel, F. (F2-16)	49
Sankey, J. (C5-03)	25	Scherz, A. (G3-05)	61
Sankey, J. (E3-05)	40	Scherz, A. (G3-06)	62
Sanli, U. (E4-07)	42	Scheumann, B. (B3-02)	15
Sannidhi, A. (G2-08)	60	Schier, P. (S3-03)	56
Santana, A. (S3-05)	57	Schiewitz, D. (F3-01)	50
Santini, P. (D2-01)	28	Schiffer, P. (S6-01)	112
Santini, P. (D2-02)	29	Schio, P. (M6-12)	124
Santini, P. (G2-01)	59	Schlagel, D.L. (D2-14)	30
Santos, E. (R4-09)	177	Schlappa, J. (G3-06)	62
Sanvito, S. (D2-01)	28	Schleife, A. (D2-16)	30

*Best student presentation award finalist

Schlenhoff, A. (I3-04)	79	Sentsho, Z. (R5-16)	180
Schliep, K.B. (G2-07)	59	Seo, J. (F5-02)	53
Schlitz, R. (E1-01)	36	Seo, J. (F5-08)	54
Schlom, D.G. (M1-03)	113	Seo, S. (F4-13)	53
Schlom, D.G. (Q4-02)	165	Sepehri Amin, H. (H3-02)	71
Schlottmann, P. (R4-01)	176	Sepehri Amin, H. (H3-10)	72
Schmauch, J. (M2-07)	116	Sepulveda, A. (I2-03)	77
Schmid, A.K. (F1-01)	46	Sepulveda, A. (Q5-11)	168
Schmid, A.K. (I3-08)	80	Serantes, D. (Q2-09)	163
Schmid, A.K. (O3-11)	141	Serantes, D. (Q2-10)	163
Schmidt, A. (B2-07)	14	Seren, H.R. (F4-09)	52
Schmidt, N. (R3-14)	176	Serga, A.A. (E4-12)	43
Schmitt, C. (M1-02)	113	Serrano, A. (H1-09)	68
Schmitt, C. (P4-07)	155	Serrano, R.L. (M6-12)	124
Schneider, H. (G3-03)	61	Sert, E. (H2-03)	70
Schneider, H. (R4-07)	177	Servet, B. (K4-03)	99
Schneider, H. (R4-12)	178	Sese, J. (E2-01)	38
Schneider, M. (E4-12)	43	Sessoli, R. (D2-01)	28
Schneider, M. (N2-08)	127	Sessoli, R. (F5-07)	54
Schneider, R. (M4-08)	120	Sethi, P. (B3-09)	16
Schneider, R. (Q4-10)	166	Sethi, P. (R3-08)	175
Schneider, S. (K1-03)	94	Sha, C. (M3-07)	118
Scholl, A. (S6-04)	112	Sha, Y. (J2-04)	86
Schönenberger, T. (N1-07)	126	Shadman, A. (R3-07)	174
Schönfeldt, M. (C2-06)	21	Shafer, P. (A3-08)	6
Schönke, D. (L1-05)	103	Shafer, P. (C1-11)	19
Schönke, D. (R1-05)	170	Shafer, P. (M2-04)	115
Schotter, J. (B1-13)	12	Shafer, P. (P2-10)	152
Schrefl, T. (B1-13)	12	Shah, P.J. (I2-02)	77
Schrefl, T. (P3-01)	152	Shahrokhvand, M. (M1-09)	114
Schreiber, F. (M1-02)*	113	Shaib, A. (I4-14)	82
Schrittwiesser, S. (B1-13)	12	Shaikh, M. (H2-04)	70
Schuller, I.K. (D1-01)	26	Shaji, S. (F2-06)	48
Schuller, I.K. (H2-01)	69	Shan, J. (O1-04)	135
Schuller, I.K. (K2-06)	96	Shao, Y. (E4-13)	43
Schuller, I.K. (L2-01)	105	Shao, Y. (G4-05)	63
Schuller, I.K. (R2-10)	173	Sharafullin, I. (M5-04)	122
Schultheiss, H. (B3-02)	15	Sharangi, P. (A4-14)	8
Schultheiss, H. (E4-06)	42	Sharangi, P. (J5-12)	92
Schultheiss, H. (E4-10)	43	Sharangi, P. (O4-10)	143
Schultheiss, H. (O5-04)	144	Sharma, P. (C4-03)	23
Schultheiss, H. (O7-08)	148	Sharma, S. (H3-14)	72
Schultheiss, H. (Q4-01)	165	Sharma, S.K. (C1-08)	19
Schultheiss, H. (Q4-04)	165	Shcherbakov, D.L. (O1-05)	135
Schultheiss, K. (E4-06)	42	Shcherbinin, S.V. (J1-07)	85
Schultheiss, K. (E4-10)	43	Sheffels, S. (R2-06)	173
Schütz, G. (I3-01)	79	Sheka, D. (A1-05)	2
Schütz, G. (R2-06)	173	Sheka, D. (J6-05)	93
Scipioni, L. (G1-02)	57	Sheka, D. (R1-09)	171
Scipioni, L. (G1-05)	57	Shen, K.M. (Q4-02)	165
Scott, B. (K1-01)	94	Shen, Q. (A4-03)	7
Scott, E. (J5-02)	90	Shen, X. (K3-07)	98
Scott, J.N. (A3-10)	6	Shen, X. (M3-02)	117
Scott, J.N. (N4-04)	131	Shepard, A. (G1-02)	57
Scott, J.N. (P2-08)	152	Shepard, A. (G1-05)	57
Scott, J.N. (P2-10)	152	Shepeta, N. (G6-12)	67
Sebald, G. (Q2-05)	163	Sheppard, C. (D2-04)	29
Sedona, F. (B2-03)	13	Sheppard, C. (H2-05)	70
Sedona, F. (B2-04)	13	Sheppard, C. (P5-10)	157
Seehra, M.S. (Q2-08)	163	Sheppard, C. (R5-16)	180
Seekaew, N. (Q5-12)	168	Sheppard, C. (R5-17)	180
Seibel, C. (G3-03)	61	Sheridan, R.S. (H3-13)	72
Seibel, C. (G3-11)	62	Sherwin, M. (S4-02)	75
Seki, T. (M4-06)	120	Sheshukova, S. (O7-07)	148
Seki, T. (O1-11)	136	Sheshukova, S. (O7-10)	148
Seki, T. (O4-09)	143	Sheu, S. (O2-12)	139
Sekiguchi, F. (A2-10)	4	Shevchenko, Y. (D1-13)	28
Sekino, M. (Q5-02)	167	Shevchenko, Y. (M5-05)	122
Sellmyer, D.J. (B4-08)	18	Shi, D. (F6-02)	55
Sellmyer, D.J. (E2-06)	38	Shi, D. (M1-05)	113
Sellmyer, D.J. (E2-12)	39	Shi, D. (M6-02)	123
Semiannikova, A. (H5-02)	74	Shi, G. (R4-01)	176
Semiannikova, A. (H5-05)	74	Shi, J. (A4-10)	8
Seneor, P. (K4-03)	99	Shi, J. (G1-08)	58
Seneor, P. (O3-13)	141	Shi, J. (Q2-08)	163
Seng, B. (G3-08)	62	Shi, J. (S4-02)	75
Seng, B. (R1-05)	170	Shi, S. (A1-06)	2

*Best student presentation award finalist

Shi, S. (S5-05)	111	Singh, M. (M4-12)	121
Shi, X. (I4-02)	81	Singh, N. (B1-10)	12
Shi, X. (M3-04)	118	Singh, P. (B4-07)	18
Shi, Y. (F6-02)	55	Singh, S. (B3-08)	16
Shi, Y. (Q1-04)	161	Singh, S. (J4-01)	88
Shigematsu, E. (J4-07)	89	Singh, U. (Q3-07)	164
Shigematsu, E. (M3-01)	117	Singleton, J. (K1-01)	94
Shikin, V.S. (B2-13)	14	Sinitsyn, V. (L3-03)	106
Shikoh, E. (P6-09)	158	Sinova, J. (G1-11)	58
Shikoh, E. (P6-10)	158	Sinova, J. (P4-07)	155
Shim, J.S. (S1-03)	34	Sisodia, N. (O3-07)	141
Shima, T. (H3-10)	72	Själänder, M. (P3-06)	153
Shimada, T. (M6-10)	124	Sjöqvist, E. (D2-10)	30
Shimada, T. (P6-14)	159	Sjöqvist, E. (E2-02)	38
Shimada, Y. (I4-15)	82	Sjöqvist, E. (Q2-04)	162
Shimizu, R. (I4-05)	81	SKARLATOS, A. (P3-07)	153
Shimohashi, F. (R2-07)	173	Skaugen, A. (M3-13)	119
Shimon, G. (O2-01)	137	Skjærvø, S.H. (B1-05)	11
Shimura, M. (C5-01)	25	Sklenar, J. (G5-06)	65
Shin, J. (D3-08)	31	Sklenar, J. (M3-03)	118
Shin, K. (D3-03)	31	Sklenar, J. (O1-03)	135
Shin, K. (G6-06)	66	Sklenar, J. (S1-03)	34
Shin, M. (O2-16)	139	Skokov, K. (C2-07)	21
Shinjo, T. (J4-07)	89	Skokov, K. (F2-03)	48
Shinjo, T. (L3-11)	108	Skokov, K. (F2-04)	48
Shinjo, T. (M3-01)	117	Skokov, K. (F2-14)	49
Shinnoh, T. (G2-13)	60	Skokov, K. (F2-16)	49
Shinya, H. (O1-12)	137	Skokov, K. (H3-09)	72
Shiokawa, Y. (N4-02)	131	Skokov, K. (H3-14)	72
Shirai, M. (M4-06)	120	Skokov, K. (L4-11)	110
Shirai, S. (P6-10)	158	Skokov, K. (Q1-06)	161
Shiraishi, M. (J4-07)	89	Skomski, R. (B4-08)	18
Shiraishi, M. (L3-11)	108	Skomski, R. (E2-06)	38
Shiraishi, M. (M3-01)	117	Skomski, R. (E2-12)	39
Shirokura, T. (J4-08)	89	Skoric, L. (A1-09)	2
Shirotori, S. (N5-14)	133	Skoropata, E. (D2-06)	29
Shivashankar, S. (C1-13)	20	Skoropata, E. (H2-09)	70
Shoshi, A. (B1-13)	12	Skourski, Y. (B4-01)	17
Shoup, J. (I4-13)	82	Skovdal, B. (C4-06)	24
Shousha, M. (I1-02)	76	Slanovec, F. (B1-02)	11
Shrestha, N. (P6-04)	158	Slavin, A.N. (B3-09)	16
Shu, X. (M1-01)	113	Slavin, A.N. (E4-12)	43
Shu, X. (M2-14)	117	Slavin, A.N. (M4-09)	121
Shuang, X. (I2-10)	78	Slavin, A.N. (Q2-01)	162
Shugaev, M.V. (P2-11)	152	Slavin, A.N. (R3-08)	175
Shukla, A. (L2-03)	105	Slawinska, J. (Q4-11)	166
Si, Q. (J5-06)	91	Sleptsova, A.E. (Q1-09)	161
Sichelschmidt, J. (B4-01)	17	Slimani, Y. (J3-09)	88
Siddiqui, S. (O1-03)	135	Sløetjes, S. (B1-04)	11
Sidi El Valli, A. (B3-09)	16	Sløetjes, S. (P3-10)	153
Sierra, J.F. (O1-01)	135	Slovinska, L. (J1-03)	84
Siewierska, K.E. (E1-02)	36	Smirnov, A.V. (L4-06)	109
Siewierska, K.E. (I2-06)	77	Smirnov, D. (C3-14)	23
Sigov, A. (L3-07)	107	Smith-Gray, N. (D4-14)	33
Sikola, T. (A2-08)	4	Smith, A.R. (K2-13)	97
Sikola, T. (H5-01)	74	Smith, D. (E2-05)	38
Silber, R. (E1-11)	37	Smith, D.A. (A3-04)	5
Silva, D. (L4-12)	110	Smith, D.A. (A3-05)	5
Silva, T. (E1-07)	37	Smythe, N. (K1-01)	94
Silvani, R. (N2-11)	128	Snyder-Tinoco, D. (M5-11)	122
Silvani, R. (O7-01)	147	Snyder, M. (I2-15)	78
Silvani, R. (O7-02)	147	Soares, G. (L3-12)	108
Sim, M. (O3-06)	140	Soffa, W.A. (P3-11)	154
Simensen, H.T. (G1-08)	58	Soh, J. (M3-09)	119
Simonet, V. (A2-03)	3	Soh, Y. (J5-04)	91
Simpson, J. (G5-11)	65	Sohn, C. (H2-09)	70
Simpson, J.R. (O1-05)	135	Sokalski, V. (A3-06)	5
Simpson, J.R. (O1-10)	136	Sokalski, V. (I3-03)	79
Sinaga, S. (G4-05)	63	Sokalski, V. (M5-08)	122
Sinclair, R. (S5-02)	111	Sokalski, V. (R1-08)	171
Singh, A. (F4-02)	52	Sokalski, V. (R1-12)	171
Singh, B.B. (A4-14)	8	Sokalski, V. (R2-08)	173
Singh, B.B. (D1-02)	26	Sokjabok, S. (N3-07)	129
Singh, B.B. (O4-10)	143	Sokolov, E. (F4-03)	52
Singh, B.B. (O4-11)	143	Sola, A. (J2-03)	86
Singh, B.B. (R4-04)	177	Soldatov, I. (E5-13)	45
Singh, K. (F4-02)	52	Soldatov, I. (K1-03)	94

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Soldatov, K. (D1-13)	28	Stejskal, O. (E1-11)	37
Soldatov, K. (M5-05)	122	Stemmer, S. (J5-01)	90
Solheid, P. (I2-14)	78	Stenning, K. (C4-01)	23
Solignac, A. (F3-02)	50	Stenning, K. (N2-03)	127
Solignac, A. (F3-08)	51	Stepanov, S. (C5-04)	25
Solignac, A. (F3-09)	51	Stephan, O. (S3-02)	56
Solovyev, I. (B4-02)	17	Stephen, G.M. (O1-07)	136
Solovyev, I. (P5-07)	156	Steren, L. (P3-12)	154
Soltys, J. (L1-02)	102	Stevens, T. (J2-06)	86
Solyom, A. (C5-03)	25	Stewart, A. (A3-09)	6
Solyom, A. (E3-05)	40	Stiehl, G.M. (O1-04)	135
Solzi, M. (F2-15)	49	Stiehl, M. (G3-03)	61
Son, H. (N3-10)	130	Stiehl, M. (G3-11)	62
Song, C. (P4-08)	155	Stienen, S. (E4-03)	41
Song, J. (K3-02)	97	Stiles, M.D. (Q4-09)	166
Song, J. (R5-04)	179	Stiles, M.D. (S5-04)	111
Sonoda, K. (P4-06)	154	Stoeckl, P. (D4-05)	32
Sorace, L. (F5-07)	54	Stoeffler, D. (E4-11)	43
Sorée, B. (O2-04)	138	Stognij, A. (O7-07)	148
Sorrenti, A. (J1-04)	85	Stoian, G. (H1-01)	67
Sorrentino, A. (A1-02)	1	Stolbov, O. (A4-16)	9
Sorrentino, A. (L1-10)	104	Stoll, H. (L1-05)	103
Sorrentino, A. (O5-01)	143	Stoll, L. (L3-06)	107
Soumah, L. (S8-01)	159	Stolyar, S. (C4-02)	23
Soumyanarayanan, A. (O3-06)	140	Stolyar, S. (Q5-07)	167
Sousa, R. (B3-09)	16	Stopfel, H. (B1-12)	12
Sousa, R. (G4-02)	63	Stopfel, H. (C4-06)	24
Sousa, R. (O2-02)	138	Stopfel, H. (H3-03)	71
Sousa, R. (P2-09)	152	Strandqvist, N. (C4-06)	24
Souza, R. (M6-09)	124	Stransky, M. (G3-05)	61
Sozinov, A. (A4-05)	7	Street, G. (P4-05)	154
Spaldin, N.A. (H2-07)	70	Streib, S. (Q2-04)	162
Spaldin, N.A. (M2-13)	116	Strelkov, N. (C5-05)	25
Spatarelu, C. (S3-01)	56	Streltsov, S. (B4-02)	17
Spetzler, B. (F3-11)	51	Streubel, R. (A1-06)	2
Spießler, A.M. (K3-04)	98	Stromberg, A. (P3-06)	153
Srikanth, H. (E2-02)	38	Stromberg, A. (R1-04)	170
Srikanth, H. (I4-06)	81	Stroud, J. (P1-02)	149
Srikanth, H. (L4-02)	108	Stroud, J. (P1-03)	149
Srinivasan, K. (A3-11)	6	Strungaru, M.S. (G3-13)	63
Srinivasan, K. (I2-14)	78	Strungaru, M.S. (N1-09)	126
Srivastava, A. (A3-04)	5	Stückler, M. (H1-06)	68
Srivastava, A. (J3-04)	87	Studer, A. (R5-16)	180
Srivastava, T. (N1-03)	125	Su, D. (N5-01)	132
Stadler, B. (I2-14)	78	Su, D. (N5-03)	132
Stadler, B. (P1-08)	150	Su, D. (Q5-12)	168
Stadtmüller, B. (G3-03)	61	Subramanian, A. (J2-05)	86
Stadtmüller, B. (G3-11)	62	Subramanian, A. (Q6-11)	169
Stamenov, P. (L3-01)	106	Subramanian, V. (P5-09)	157
Stamenov, P.S. (E3-07)	40	Suda, K. (N4-02)	131
Stamenov, P.S. (G2-14)	60	Suellow, S. (A2-01)	3
Stamenov, P.S. (I2-06)	77	Suemasu, T. (R1-11)	171
Stamenov, P.S. (P4-03)	154	Suess, D. (B1-02)	11
Stamenova, M.T. (P4-03)	154	Suess, D. (B1-05)	11
Stamps, R. (S6-02)	112	Suess, D. (D1-04)	27
Stanescu, S. (F1-03)	46	Suess, D. (R1-13)	171
Stankiewicz, A. (F3-05)	50	Sugai, M. (K5-10)	102
Stansill, S. (D1-07)	27	Sugawara, A. (L1-04)	103
Stark, A. (L1-09)	103	Suh, P. (C3-12)	23
Starr, N.E. (E2-08)	39	Sukhorukov, Y.P. (P5-03)	156
Stashkevich, A. (I3-11)	80	Sulla, I. (J1-03)	84
Stashkevich, A. (R1-10)	171	Sumi, S. (F1-08)	47
Stasiak, J. (C4-11)	24	Sumi, S. (R4-06)	177
Statuto, N.N. (G1-04)	57	Sun, A. (C2-10)	21
Statuto, N.N. (R2-05)	172	Sun, A. (C3-03)	22
Statuto, N.N. (R3-05)	174	Sun, A. (I4-03)	81
Stavila, C. (Q5-03)	167	Sun, A. (K2-05)	96
Stavrou, E. (C2-05)	20	Sun, D. (E3-04)	40
Steadman, P. (I3-01)	79	Sun, D. (I2-13)	78
Stebliy, M. (E5-07)	44	Sun, D. (R4-02)	176
Stebliy, M. (E5-13)	45	Sun, G. (F5-02)	53
Štefanić, G. (F4-12)	53	Sun, G. (F5-08)	54
Stein, A. (B1-12)	12	Sun, H. (I5-08)	83
Stein, D.L. (P3-08)	153	Sun, H. (K3-02)	97
Steinhoff, U. (S3-03)	56	Sun, H. (R5-11)	180
Steinhoff, U. (S3-04)	56	Sun, J. (B3-01)	15
Steinke, N. (G4-07)	64	Sun, J. (O2-01)	137

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Sun, J. (S5-03)	111	Tan, H. (O3-05)	140
Sun, N.X. (F3-11)	51	Tan, H. (O3-06)	140
Sun, N.X. (I2-02)	77	Tanabe, K. (F1-08)	47
Sun, N.X. (P5-01)	156	Tanabe, K. (R4-06)	177
Sun, Q. (G1-08)	58	Tanaka, D. (C2-09)	21
Sun, Q. (P4-03)	154	Tanaka, H. (H4-04)	73
Sun, X. (L1-06)	103	Tanaka, H. (P6-10)	158
Sun, Y. (E1-01)	36	Tanaka, M. (K2-10)	97
Sun, Y. (G3-01)	61	Tanaka, M. (O1-12)	137
Sun, Y. (Q6-09)	169	Tanaka, M. (R3-13)	175
Sun, Y. (S1-01)	34	Tanaka, S. (I2-04)	77
Sunmola, I. (G4-05)	63	Tanaka, T. (N3-01)	129
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Zhang, S. (S5-02)	111	Zhu, J. (K3-02)	97
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