

APS Workshop 2: Bright Perspectives of Inelastic X-ray Scattering in the Post-APS-U Era

Wednesday, April 19, Morning

Session 1

Chair: Michael Hu

- 8:30 – 8:45 Jiyong Zhao (Argonne National Laboratory)
APS-U and 3-ID Beamline Upgrades: New Opportunities and Challenges
- 8:45 – 9:10 Thomas Toellner (Argonne National Laboratory)
Mössbauer Microbeam Spectroscopy after the APS Upgrade
- 9:10 – 9:35 Mathieu Roskosz (Institut de Mineralogie, Physique des Matériaux et Cosmochimie)
Straight Out of the Asteroid Belt to Sector 3 at the Advanced Photon Source: Iron Valence State and Mineralogy in Particles from Asteroid Ryugu
- 9:35 – 10:00 Volker Schünemann (University of Kaiserslautern-Landau)
Exploration of Spins and Phonons in Single-molecule Magnets and Molecular Switches Using ^{161}Dy and ^{57}Fe as Nuclear Probes
- 10:00 – 10:20 Nicolai Lehnert (University of Michigan)
Application of Nuclear Resonance Vibrational Spectroscopy to Elucidate the Electronic Structures of Iron-NO Complexes with Relevance to NO Sensing and Detoxification in Biology
- 10:20 – 10:25 Break

Session 2

Chair: Barbara Lavina

- 10:25 – 10:45 Marc Pavlik (Northern Illinois University)
Study of the Dynamics of Glasses Using Nuclear Resonance Time Domain Interferometry with Annular Slits
- 10:45 – 11:10 Brent Fultz (California Institute of Technology)
NRIXS and NFS Studies of Phonon and Spin Thermodynamics
- 11:10 – 11:35 Barbara Ratschbacher (University of California, Davis)
Characterization of Natural Amphibole Crystals through a Combination of Microanalytical Techniques including Single-crystal Synchrotron Mössbauer Spectroscopy
- 11:35 – 12:00 Jennifer Jackson (California Institute of Technology)
Constraints on the Temperature of Earth's Core

12:00 – 12:30 Ercan Alp and Jiyong Zhao (Argonne National Laboratory)
Discussion

Thursday, April 20, Morning

Session 1

Chair: Ayman Said

8:30 – 8:40 Ahmet Alatas (Argonne National Laboratory)
APS-U and Sector 30 Beamline Update

8:40 – 8:50 Michael Hu (Argonne National Laboratory)
Sn Nuclear Resonant Scattering

8:50 – 9:15 Olivier Delaire (Duke University)
Strong Anharmonicity and Electron-phonon Coupling Beyond the Phonon Quasiparticle Picture: How IXS Informs our Understanding of Complex Atomic Dynamics in Materials

9:15 – 9:40 Michael Manely (Oak Ridge National Laboratory)
Phonon Dispersion, Lifetimes, and Thermal Transport in Nuclear Fuel Materials

9:40 – 10:05 Hu Miao (Oak Ridge National Laboratory)
Spin-phonon Coupling Driven Charge Density Wave in a Kagome Magnet

10:05 – 10:30 Chen Li (University of California, Riverside)
Monolayer-like Lattice Dynamics in Bulk WSe₂

Session 2

Chair: Ahmet Alatas

10:30 – 10:55 Mingda Li (Massachusetts Institute of Technology)
Topological Magnon-phonon Interaction, High-throughput Phonon Dispersion Calculation, and Open Questions of Phonon Sciences for APS-U

10:55 – 11:15 Hyunwoo Kim (Pohang University of Science and Technology)
Origin of Chirality in Transition-metal Dichalcogenides

11:15 – 11:35 Anisha Singh (Stanford University)
Developments in Uniaxial Strain Tuning for Inelastic X-ray Scattering Measurements

11:35 – 12:00 Wenli Bi (University of Alabama at Birmingham)
High-pressure Studies of Kagome Magnets

12:00 – 12:15 Ahmet Alatas, Michael Hu, and Ayman Said (Argonne National Laboratory)
Discussion

Friday, April 21, Morning

Session 1

Chair: Diego Casa

8:45 – 9:30 Diego Casa, Jung Ho Kim, and Mary Upton (Argonne National Laboratory)
APS-U Beamline Upgrade

Session 2

Chair: Jung Ho Kim

9:30 – 10:00 Bumjoon Kim (Pohang University of Science and Technology)
Fractionalization of Magnons in Square-lattice Iridates

10:00 – 10:30 Gang Cao (University of Colorado at Boulder)
Towards Control of Quantum States in High-Z Materials via Electric Currents and Magneto-synthesis

10:30 – 11:00 Markus Grüninger (University of Cologne, Germany)
RIXS Interferometry on Cluster Mott Insulators and Bond-directional Excitations in Kitaev Materials

11:00 – 11:30 Mark Dean (Brookhaven National Laboratory)
Antiferromagnetic Excitonic Insulator State in $Sr_3Ir_2O_7$

11:30 – 12:00 Young-June Kim (University of Toronto)
RIXS Investigation of Rhenium Double Perovskite Materials