APS Workshop 13: A Decade through the Looking Glass: X-ray Scattering on Quantum Materials in Pulsed and Persistent Magnetic Field

May 4, Thursday, Morning

8:30 – 8:35 Welcome by Workshop Organizers

8:35 – 8:45 Jonathan C. Lang (Argonne National Laboratory)
Introduction to Workshop

Session I: Global State-of-the-art Magnetic Field Capabilities at X-ray User Facilities
Chair: Daniel Haskel

8:45 – 8:50 Daniel Haskel (Argonne National Laboratory)
Introduction

8:50 – 9:20 Cornelius Strohm (Deutsches Elektronen-Synchrotron DESY)
X-ray Spectroscopy and Resonant Scattering in Pulsed High Magnetic Fields: A Look Back and into the Future

9:20 – 9:50 Jacob P.C. Ruff (Cornell High Energy Synchrotron Source)
New Science Opportunities at the High Magnetic Field X-ray Facility at CHESS

9:50 – 10:20 Joerg Strempfer (Argonne National Laboratory)
Possibilities for X-ray Diffraction Experiments in Magnetic Field at the APS-U Polar Beamline

10:20 – 10:30 Break

Session II: Multimodal Measurements and Instrumentation
Chair: Andreas Rydh

10:30 – 10:35 Andreas Rydh (Stockholm University)
Introduction

10:35 – 11:05 Kristin Willa (Karlsruhe Institute of Technology)
In-situ *Nanocalorimetry: Combining X-ray Diffraction with Thermodynamic Measurements*

11:05 – 11:35 Matthew Smylie (Hofstra University)
Single-crystal Diffraction Below 1 K: Looking for Symmetry-breaking Distortions in a Rotational Symmetry Breaking Superconductor

11:35–12:05 Umeshkumar Manibhai Patel (Argonne National Laboratory)
Nanocalorimetry Instrumentation Development for X-ray Science Applications

12:05 – 12:45 Yongseong Choi and Philip J. Ryan (Argonne National Laboratory)
Wrap-up and Discussion

12:45 Workshop Adjourns

May 5, Friday, Morning

Session III: Challenging Directions
Chair: Jong-Woo Kim

8:30 – 8:35 Jong-Woo Kim (Argonne National Laboratory)
Introduction

8:35 – 9:05 Jung Ho Kim (Argonne National Laboratory)
Resonant Inelastic X-ray Scattering under Magnetic Fields

9:05 – 9:35 Andreas Glatz (Northern Illinois University)
Simulation of the Temperature Distribution in Heterogeneous Samples or Devices due to X-ray Beam Heating

9:35 – 10:05 Elliot Kisiel (University of California, San Diego)
Future Pathways of Dark Field X-ray Microscopy: Magnetism, Charge Order, and Beyond

10:05 – 10:15 Break

Session IV: Quantum Materials
Chair: Marcelo Jaime

10:15 – 10:20 Marcelo Jaime (Los Alamos National Laboratory)
Introduction

10:20 – 10:50 Matthew Pearce (Oxford University)
X-ray Study of the Valence Transition of $CeOs_4Sb_{12}$ in Pulsed Magnetic Fields

10:50 – 11:20 Alexei Koshelev (Argonne National Laboratory)
Nonuniform Superconducting States

11:20 – 11:50 Krzysztof Gofryk (Idaho National Laboratory)
X-ray Diffraction under Large Magnetic Fields: The Case of Piezomagnetism in Uranium Dioxide

11:50 – 12:20 Stephen Wilson (University of California, Santa Barbara)
High-field Studies of Charge Density Wave Order on a Kagome Lattice

12:20 – 1:00 Matthew Krogstad and Ulrich Welp (Argonne National Laboratory)
Wrap-up and Discussion

1:00 Workshop Adjourns