

APS Workshop 7: X-ray Diffraction Coherent Techniques Applied to Chemistry and Materials Science

Thursday, May 8, Morning

- 8:20 – 8:30 Workshop Organizers
Opening Remarks
- 8:30 – 9:00 Stephan O. Hruszkewycz (Materials Science, Argonne National Laboratory)
Using Coherent Hard X-rays to Enable Imaging of Nanoscale Structural Heterogeneity in Materials
- 9:00 – 9:30 Ian Robinson (London Centre for Nanotechnology, University College London)
Functional Strains and Domains in Crystalline Materials
- 9:30 – 10:00 Florian Meneau (Brazilian Synchrotron Light Laboratory and Brazilian Center for Research in Energy and Materials)
Investigating Nano-zeolite Dynamics with Coherent X-ray Scattering Methods
- 10:00 – 10:20 Break
- 10:20 – 10:50 Andrej Singer (Cornell University)
Operando Bragg Coherent Diffraction Imaging in Battery Materials
- 10:50 – 11:10 Ross Harder (X-ray Science, Argonne National Laboratory)
Bragg Coherent Diffraction Imaging in the APS-U Era
- 11:10 – 12:00 Coherent Beamline Visits
- 12:00 Adjourn Day One

Friday, May 9, Morning

- 8:00 – 8:10 Workshop Organizers
Opening Remarks
- 8:10 – 8:40 Mathew Cherukara (X-ray Science, Argonne National Laboratory)
High Performance Computing and AI-enabled Coherent Materials Characterization and Experimental Automation
- 8:40 – 9:10 G. Brian Stephenson (Materials Science, Argonne National Laboratory)
High-speed XPCS Studies of Composition Fluctuations in Liquids

- 9:10 – 9:40 Roopali Kukreja (Materials Science and Engineering, University of California-Davis)
Critical Slowdown of Fluctuations in the Vicinity of Metal Insulator Transition in Rare Earth Nickelates
- 9:40 – 10:00 Eric M. Dufresne (Advanced Photon Source, Argonne National Laboratory)
The APS-U 8-ID XPCS Beamline and its Instruments
- 10:00 – 10:20 Break
- 10:20 – 10:50 Hanfei Yan (National Synchrotron Light Source II, Brookhaven National Laboratory)
X-ray Tomography at the Deep Nanoscale with Coherent Diffractive Imaging
- 10:50 – 11:20 Paul Fenter (Chemical Sciences and Engineering, Argonne National Laboratory)
Coherent X-ray Interfacial Imaging: Progress and Prospects
- 11:20 – 11:40 Hua Zhou (X-ray Science, Argonne National Laboratory)
Coherent High-energy X-rays Advancing the Quantum and Energy Frontiers
- 11:40 – 12:00 Workshop Organizers
Final Remarks and Discussion
- 12:00 Adjourn