APS Workshop 3: Full Field Imaging at APS-U: Back to the Future

Thursday, May 8, Morning

8:30 – 8:35 Francesco De Carlo (X-ray Science, Argonne National Laboratory)
Welcome

8:35 – 8:45 Alberto Mittone (X-ray Science, Argonne National Laboratory)
Current Status and Recent Results from APS Imaging Beamlines

8:45 – 9:15 Nikhilesh Chawla (School of Materials Engineering, Purdue University)
High Resolution Imaging of Defects in Semiconductors: Detection, Reliability, and Mitigation

9:15 – 9:45 Nuno Macarico da Costa (Allen Institute)
Towards a Scalable Pipeline for Mapping Neuronal Circuits at Centimeter Scale and Nanometer Resolution

9:45 – 10:15 Stuart Stock (Department of Cell and Developmental Biology, Feinberg School of Medicine, Northwestern University)
2-BM: Two Decades and Beyond

10:15 – 10:30 Break

10:30 – 11:00 Jake Socha (Department of Mechanical Engineering, Virginia Tech)
Full-field Imaging of Insects and Other Small Animals

11:00 – 11:30 Tao Sun (Department of Mechanical Engineering, Northwestern University)
The Next Phase of Operando *Synchrotron Experiments on Additive Manufacturing*

11:30 – 12:00 Devin Rippner (Horticultural Crops Production and Genetics Improvement Research Unit, United States Department of Agriculture-Agricultural Research Service)
Integrating Multimodal Imaging Approaches to Characterize Soil Organic Matter and Other Chemical Constituents

12:00 – 1:00 Lunch Break

Thursday, May 8, Afternoon

1:00 – 2:00 IMG Beamline Visits

2:00 – 2:30 Douglas Lars Nelson (School of Materials Science and Engineering, Georgia Institute of Technology)
Investigating Chemo-mechanical Degradation in Solid-state Batteries with Synchrotron-enabled Operando *X-ray Computed Microtomography*

2:30 – 3:00 Eva Allen (Applied Materials, Argonne National Laboratory)
Three-dimensional Quantification of Chemical Heterogeneity in Lithium-ion Cathodes for Synthesis and Direct Recycling

3:00 – 3:40 Songyuan Tang (X-ray Science, Argonne National Laboratory)
How AI-based Spatiotemporal Fusion Can Benefit the High-speed Imaging User Community

3:40 – 3:55 Break

3:55 – 4:30 Xiaoyang Liu (X-ray Science, Argonne National Laboratory)
Deep Learning Segmentation with Dragonfly

4:30 – 4:55 Viktor Nikitin (X-ray Science, Argonne National Laboratory)
New Data Acquisition Schemes and Reconstruction Methods for the Projection X-ray Microscope

4:55 – 5:00 Francesco De Carlo (X-ray Science, Argonne National Laboratory)
Wrap-up

5:00 Adjourn