APS WK#12: Multi-scale X-ray Fluorescence Microscopy Imaging Using Multiple APS Beamlines

Thursday, May 13, Morning

8:30 – 8:45 Olga Antipova and Lu Xi Li (Advanced Photon Source, Argonne National Laboratory)
  Welcome from the Organizers

8:45 – 9:05 Olga Antipova (Advanced Photon Source, Argonne National Laboratory)
  X-ray Fluorescence Microscopy at APS Beamlines: Current and Post-APS-U

9:05 – 9:25 Tatjana Paunesku (Northwestern University)
  Examination of Nanoparticle-transfected HeLa cells Using Multi-scale X-ray Fluorescence Tomography

9:25 – 9:45 Martina Ralle (Oregon Health and Science University)
  Copper in Brain Pathology

9:45 – 10:10 Joseph Jakes (University of Wisconsin-Madison)
  Integrating Multiscale Studies of Chemically Modified Wood

10:10 – 10:30 Break

10:30 – 10:55 Samuel Webb (Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory)
  Muti-scale, Multi-beamline, and Multi-modal Imaging for Life Sciences at SSRL

10:55 – 11:10 Elena Rozhkova (Center for Nanoscale Materials, Argonne National Laboratory)
  Wireless Optogenetic Modulation of Cortical Neurons Enabled by Radioluminescent Nanoparticles

11:10 – 11:30 Stuart Stock (Northwestern University)
  Several Scales of the Structural Hierarchy of Mineralized Tissues

11:30 – 11:50 Robin Pourzal (Rush University)
  Characterization of Intra-cellular Metallic Debris from Total Hip Replacements within Periprosthetic Tissue

11:50 – 12:15 Yulia Pushkar (Purdue University)
  X-ray Imaging and Spectroscopy of the Brain

12:15 Adjourn

Friday, May 14, Morning

8:30 – 8:45 Welcome
8:45 - 9:05    Lu Xi Li (Advanced Photon Source, Argonne National Laboratory)  
            In Situ *Visualization of the Phase Separation in Amorphous Solid Dispersion*

9:05 – 9:20    Peng Liu (University of Waterloo)  
            *Algorithm for Attenuation Correction of Confocal Micro-X-ray fluorescence Imaging (CMXRFI) Data and an Application for Redox Mapping*

9:20 – 9:40    Sarah Wieghold (Center for Nanoscale Materials, Argonne National Laboratory)  
            *Mapping Impurities and Elemental Distribution in Solar Cell Materials*

9:40 – 10:00   Grace (Yanqi) Luo (Advanced Photon Source, Argonne National Laboratory)  
            *Real-time Image Registration Techniques for Correlative Analysis*

10:00 – 10:15  Matt Newville (Center for Advanced Radiation Sources, The University of Chicago, Argonne)  
            *Multi-modal X-ray Measurements at the GSECARS Microprobe Beamline APS 13-ID-E*

10:15 – 10:35  Break

10:35 – 11:00  Michael Stuckelberger (Deutsches Elektronen-Synchrotron DESY)  
            *Strategies for Scanning X-Ray Microscopy across Length Scales, Instruments, and Laboratories*

11:00 – 11:20  Yang Yang (National Light Source II, Brookhaven National Laboratory)  
            *Multimodal X-ray Nano-imaging with Scanning Microscopy: Applications and Data Analysis*

11:20 – 11:40  Yijin Liu (Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory)  
            *Multi-scale and Multi-modal X-ray Microscopy for Energy Material Science*

11:40 – 12:00  Tamas Varga (Pacific Northwest National Laboratory)  
            *Phosphorus Solubilization in Trees Promoted by Endosymbiosis*

12:00 – 12:25  Jorg Maser (Advanced Photon Source, Argonne National Laboratory) and Michael Stuckelberger (Deutsches Elektronen-Synchrotron DESY)  
            *Discussion: Future Directions for Multiscale Imaging*

12:25          Adjourn