NSLS-II and CFN Microscopes 101: Techniques, Applications, and Access

Are you new to Brookhaven's user facilities? Or do you already use NSLS-II and want to know more about what CFN has to offer? Or vice-versa? Are you interested in how BNL's user facilities can help advance your research? Then this workshop is for you!

The goal of this workshop is to provide college faculty, postdocs, graduate students, undergraduate students, and high school teachers with an entry-level introduction on how to access the research tools made available at the National Synchrotron Light Source II (NSLS-II) and the Center for Functional Nanomaterials (CFN).

For this year, we will focus on a range of high-resolution x-ray and electron microscopes available at the two facilities. Through a series of technique-based lectures and "flash" applications talks from current users, participants will learn about the most popular high-resolution microscopes, scientific applications, and the proposal submission process. Completion of this workshop will give you the knowledge necessary to become the next NSLS-II and/or CFN user.

Start	End	Topic	Speaker
10:00	10:30	Overview of CFN and NSLS-II	Chuck Black (CFN) and Qun Shen (NSLS-II)
10:30	11:00	Full-Field X-Ray Microscopy	Mingyuan Ge (NSLS-II)
11:00	11:15	3 flash applications (4 min each)	Karen Chen-Wiegart (SBU, BNL) - *Nanoporous Materials Design and Fabrication for Catalyst Applications*
			Xiaoyang Liu (SBU) - *3D Evolution of Alloys in Molten Salt Applications for Energy Storage*
			Michael Sutherland (DMA) - *Integrated Circuit Inspection for Reliability and Security Studies*
11:15	11:30	quiz, Q/A	
11:30	12:00	The Dual Scanning Electron and Ion Microscope	Fernando Camino (CFN)
12:00	12:15	3 flash applications (4 min each)	Ashwanth Subramanian (SBU) - *Material Patterning for Nanoscale Electronic Devices*
			Kim Kisslinger (BNL) - *Preparing TEM ready samples using the In-situ Lift-out technique in the dual beam FIB*
			Zhixiang Hu (BNL) - *Preparation of hall and resistivity measurement by using dual beam FIB*
12:15	12:30	quiz, Q/A	
12:30	1:00	Break	
1:00	1:30	Spectroscopic X-ray Microscopy	Sarah Nicholas (NSLS-II)
1:30	1:45	3 flash applications (4 min each)	Clistenes Nascimento (Brazil) - *XRF mapping Ni in hyperaccumulating plant leaves*
			Brandy Stewart (Univ MN) - *Cr spectroscopy from industrial wastewater solids*
			Evan Lockwood and Matthew Daleo (SPARK) - *Identification of Elements in Cretaceous-Era Dinosaur Teeth*
1:45	2:00	quiz, Q/A	
2:00	2:30	Photoelectron Microscopy	Jurek Sadowski (CFN)
2:30	2:45	3 flash applications (4 min each)	Julia Carmen Hestenes (Columbia Univ) - *Resolving heterogeneities in composite Li-ion battery cathodes*
			Trevor Tyson (NJIT) - *Relating Nanoscale Atomic and Electronic Structure to Polarization Domain Patterns in RMnO3*
			Wencan Jin (Auburn Univ) - *LEEM/PEEM studies of two-dimensional materials*
2:45	3:00	quiz, Q/A	
3:00	3:15	Break	
3:15	3:45	user facility logistics and getting instrument time	Priscilla Antunez (CFN), Lisa Miller (NSLS-II), Aleida Perez (OEP)
3:45	4:00	Q/A (all)	