

WORKSHOP #1

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

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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). Through a series of technique-based lectures, "flash" application talks from current users, and interactive QA / quiz sessions, participants will learn about the most popular techniques, 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.

This year, the theme for this workshop will be applications in energy materials.

Start Time (ET)	Title	Speaker (Affiliation)
10:00	Overview of NSLS-II and CFN	Qun Shen (NSLS-II) Chuck Black (CFN)
10:30	Keynote Talk: Contributions of CFN and NSLS-II to Energy Research	Amy Marschilok (Stony Brook / BNL)
11:00	X-ray Imaging and Diffraction	Chuntian Cao (BNL)
11:30 Flash apps (4 min each)	<i>Monitoring the synthesis of high-nickel cathode materials in Li-ion batteries with operando X-ray diffraction</i>	Sizhan Liu (BNL)
	<i>Compositional Analysis of Oyster Shells Using Tender Energy and Submicron Resolution X-ray Spectroscopy</i>	Elizabeth Lam (West Islip High School)
	<i>Synchrotron X-ray Diffraction and Imaging for Layered Oxide Na-ion Battery Cathode Materials</i>	Arthur Ronne (Stony Brook)
11:45	Q/A, quiz	
12:00	Nanofabrication	Aaron Stein (BNL)
12:30 Flash apps (4 min each)	<i>Ultrafast Dynamics in Novel Class of Metamaterials</i>	Uddhab Tiwari (University of Alabama at Birmingham)
	<i>Novel inorganic-organic hybrid thin film deposited using molecular atomic layer deposition (MALD) for EUV application</i>	Dan Le (UT Dallas)
	<i>Boosting photovoltaics efficiency with nanopatterning</i>	Nikhil Tiwale (BNL)
12:45	Q/A, quiz	

1:00	Vendor Flash Talk	Chris Malocsay (UC Components)
1:05	BREAK	
1:30	X-ray Scattering and Spectroscopy	Seongmin Bak (BNL)
2:00 Flash apps (4 min each)	<i>Application of XAS to investigate reaction chemistry in solid-state batteries</i>	Sanghyeon Kim (ANL)
	<i>Understanding how batteries work by the X-ray scattering and spectroscopy techniques</i>	Sha Tan (Stony Brook / BNL)
	<i>Investigating ionic heterogeneity in solid-state electrolytes for high-voltage, Li-metal batteries</i>	Jungki Min (Virginia Tech)
2:15	Q/A, quiz	
2:30	Nano-Infrared Spectroscopy/Imaging	Sam Tenney (BNL)
3:00 Flash apps (4 min each)	<i>Determining the Structure of Amyloid-β in Alzheimer's Disease</i>	Ashwin Ambi (Stony Brook)
	<i>Characterizing MOF Nanofilms with IR microscopy</i>	Ashley Head (BNL)
	<i>Spectroscopic investigation of complex van der Waals systems</i>	Sabine Neal (BNL)
3:15	Q/A, quiz	
3:30	BREAK	
3:45	User facility logistics & how to write a proposal [download presentation]	Priscilla, Lisa, Aleida
4:15	Q/A (all)	