

Welcome to NSLS-II PDF School

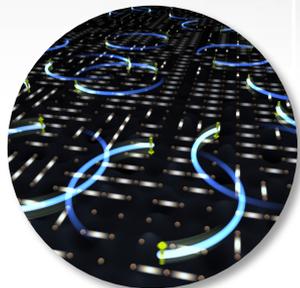
Qun Shen

Deputy Director for Science

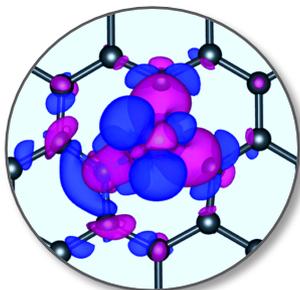
NSLS-II

NSLS-II PDF School, September 17, 2018

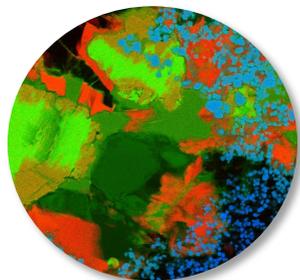
Science Focus Areas



- Quantum and Complex Materials:
 - Materials with interacting quantum states and intrinsically complex heterogeneous systems
 - NSLS-II: coherence, nano-imaging, & inelastic scattering for studies of heterogeneities & naturally-occurring dynamics and processes



- *Operando* Structural Chemistry:
 - Understandings of how things function in real environment and under working conditions
 - NSLS-II: high intensity & hazardous gas handling for time-resolved high-throughput XAS & XRD studies in realistic operating conditions

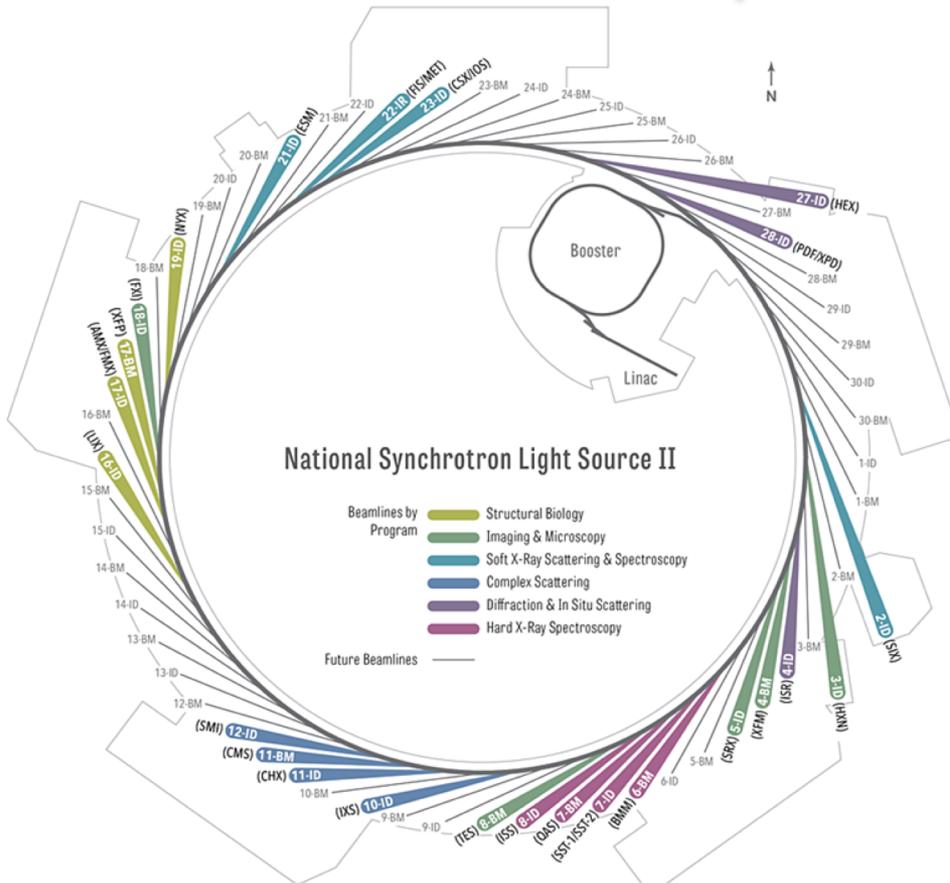


- Multiscale Structure and Function:
 - Structural, electronic, morphological, chemical, and biochemical behavior at multiple spatial and temporal scales
 - NSLS-II: cutting-edge micro-/nano-imaging and structural biology tools that span multiple length and time scales

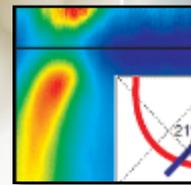
NSLS-II

Current Suite of Beamlines

- 26 operating/commissioning
- 3 under development
- ~30 more to be developed

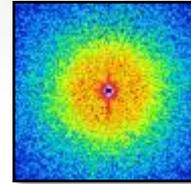


<http://www.bnl.gov/ps/nsls2/beamlines/map.php>



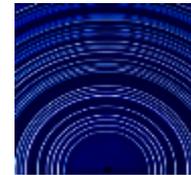
Soft X-Ray Scattering & Spectroscopy

- 23-ID-1: Coherent Soft X-ray Scattering (2015)
- 23-ID-2: Soft X-ray Spectro & Polarization (2015)
- 21-ID: Photoemission-Microscopy Facility (2016)
- 2-ID: Soft Inelastic X-ray Scattering (2017)
- 22-IR-1/-2: Magneto, Ellips, HP Infrared (2018)



Complex Scattering

- 10-ID: Inelastic X-ray Scattering (2015)
- 11-ID: Coherent Hard X-ray Scattering (2015)
- 11-BM: Complex Materials Scattering (2016)
- 12-ID: Soft Matter Interfaces (2016)

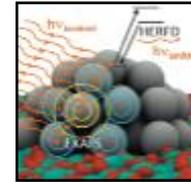


Diffraction & In Situ Scattering

- 28-ID-1: Pair Distribution Function Studies (2018)
- 28-ID-2: X-ray Powder Diffraction (2015)
- 4-ID: In-Situ & Resonant X-Ray Studies (2016)
- 27-ID: High Energy X-ray Diffraction (2022)

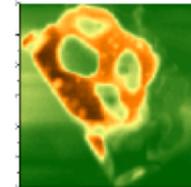
Hard X-Ray Spectroscopy

- 8-ID: Inner Shell Spectroscopy (2016)
- 7-BM: Quick X-ray Absorption and Scat (2017)
- 7-ID-1: Spectroscopy Soft and Tender (2018)
- 7-ID-2: Spectroscopy Soft and Tender (2018)
- 6-BM: Beamline for Mater. Measurement (2017)



Imaging & Microscopy

- 3-ID: Hard X-ray Nanoprobe (2015)
- 5-ID: Sub-micron Resolution X-ray Spectro (2015)
- 4-BM: X-ray Fluorescence Microscopy (2017)
- 8-BM: Tender X-ray Micro-spectroscopy (2016)
- 18-ID: Full-Field X-ray Imaging (2018)



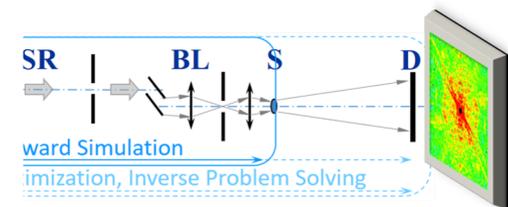
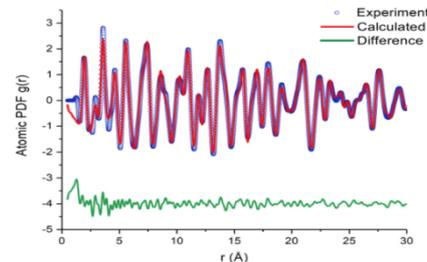
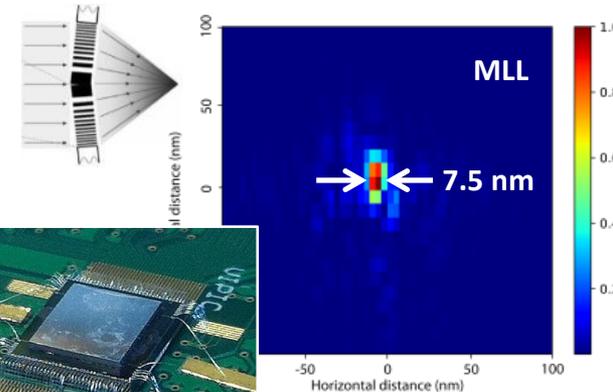
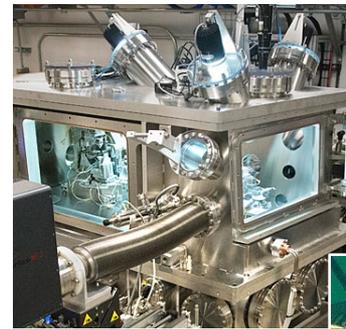
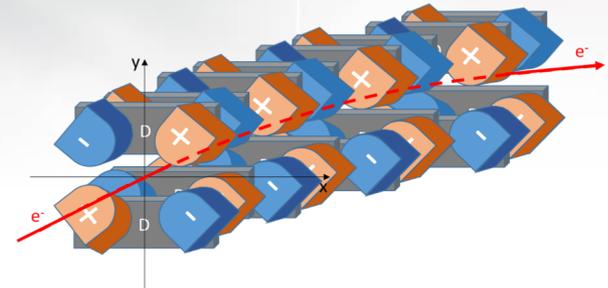
Structural Biology

- 17-ID-1: Frontier Macromol Cryst (2016)
- 17-ID-2: Automated Macromol Cryst (2016)
- 16-ID: X-ray Scattering for Life Sciences (2016)
- 17-BM: X-ray Footprinting & Bio-XAS (2016)
- 19-ID: Microdiffraction Beamline (2017)



Enabling Technologies R&D

- NSLS-II R&D program:
 - Objective: to advance targeted technology areas critical to NSLS-II's mission
 - Leveraging the strengths and talents among our staff
 - Coordination with other light source facilities
- Current activities:
 - Accelerator R&D
 - X-ray optics, metrology, detectors
 - In-situ, operando, multimodal methods and simulations
 - Integrative data management and analysis



Welcome and Enjoy!

