

# Letters of Intent

## *2010 Call for Beamline Development Proposals National Synchrotron Light Source II*

- 1. Ultrafast: Time-resolved x-ray diffraction and spectroscopy under extreme conditions**  
Alexander Goncharov, Carnegie Institution of Washington  
Source type: U
- 2. Powder Diffraction Beamline for *in situ* studies of structural and chemical transformations for advanced energy materials developments and industrial applications**  
Jianming Bai, University of Tennessee  
3PW
- 3. FCC: Frontier Crystallography with Chemistry**  
John B. Parise, Stony Brook University  
U
- 4. Radiometry and Metrology Beamline for NSLS-II (RADMET)**  
John F. Seely, Naval Research Laboratory  
3PW
- 5. Coherent X-ray Diffraction (CXD)**  
Ian Robinson, University College London  
U
- 6. Windowed Ultraviolet Beamline for Multidisciplinary Dichroic Spectroscopies (WUV)**  
John C. Sutherland, East Carolina University  
IR-LG
- 7. A Beamline for Integrated *In-Situ* and Resonant Hard X-ray Studies: Illuminating the Physics of Materials for the 21st Century (ISR)**  
Karl Ludwig, Boston University  
U
- 8. Materials Physics and Processing (MPP)**  
Jean Jordan-Sweet, IBM T.J. Watson Research Center  
3PW

- 9. X-ray Absorption Spectroscopy for Biological, Environmental and Energy Sciences (XAS)**  
Mark Chance, Case Center for Synchrotron Biosciences  
3PW
- 10. MIF: At-wavelength metrology and *in-situ* figuring**  
Konstantine Kaznatcheev, Brookhaven National Laboratory  
3PW
- 11. Frontier Synchrotron Infrared Spectroscopy Beamline under Extreme Conditions**  
Zhenxian Liu, Carnegie Institution of Washington  
IR-LG
- 12. Dynamic Imaging with Phase and Absorption Contrast (DIP)**  
Les Butler, Louisiana State University  
3PW
- 13. Photoemission-Microscopy Facility for Fundamental Studies of the Physics and Chemistry of Materials**  
Elio Vescovo, Brookhaven National Laboratory  
U
- 14. Beamline for studying the electronic properties of nanomaterials and chemical transformations by high-resolution photoemission and near-edge x-ray absorption fine structure**  
David Mullins, Oak Ridge National Laboratory  
BM
- 15. Beamline for *in situ* studies of chemical transformations by combined, synchronous, “quick” x-ray absorption and scattering measurements (QAS)**  
Anatoly Frenkel, Yeshiva University  
3PW
- 16. X-ray Fluorescence Microprobe (XFM): A flexible, three-pole wiggler based instrument for spatially-resolved materials characterization**  
Antonio Lanzirotti, University of Chicago  
3PW
- 17. Tender Energy X-ray Spectroscopy (TES): A facility for high performance and *in-situ* x-ray absorption spectroscopy and spatially-resolved XAS of structured materials, optimized for the “tender” energy range from 1.2 up to 8 keV**  
Paul Northrup, Stony Brook University  
BM

- 18. Flexible access macromolecular crystallography at an undulator beamline**  
Dieter Schneider, Brookhaven National Laboratory  
U
- 19. Frontier macromolecular crystallography at an undulator beamline**  
Robert Sweet, Brookhaven National Laboratory  
U
- 20. Inner Shell Spectroscopy (ISS-1): high energy resolution spectrometers**  
Bruce Ravel, National Institute of Standards and Technology  
DW
- 21. Inner Shell Spectroscopy (ISS-2): sub-second time-resolved spectroscopy**  
Bruce Ravel, National Institute of Standards and Technology  
DW
- 22. Hard x-ray - Inelastic X-ray scattering (HIX)**  
Young-June Kim, University of Toronto  
U
- 23. Monochromatic/White Beam X-ray Topography Beamline at NSLS-II**  
Michael Dudley, Stony Brook University  
3PW
- 24. Development of Wide-Band-gap Semiconductor Radiation Detectors**  
Ralph James, Brookhaven National Laboratory  
3PW
- 25. NYSBC Microdiffraction Beamline – NYX**  
Wayne Hendrickson, Columbia University  
U
- 26. A superconducting wiggler long beamline for full-field imaging at the NSLS-II**  
Jake Socha, Virginia Tech  
SCW
- 27. X-ray Footprinting for *In Vitro* and *In Vivo* Structural Studies of Biological Macromolecules (XFP)**  
Mark Chance, Case Center for Synchrotron Biosciences  
DW
- 28. Combined High Pressure and High Magnetic Field Materials Studies (HiPMag)**  
Trevor Tyson, New Jersey Institute of Technology  
DW

- 29. Soft X-Ray Absorption and Scattering (SAS)**  
Joseph Dvorak, Brookhaven National Laboratory  
BM
- 30. Infrared and THz beamline for magnetospectroscopy, ellipsometry and dynamical studies to address problems in condensed matter and materials physics**  
Larry Carr, Brookhaven National Laboratory  
IR-LG
- 31. 4 Dimensional Studies in Extreme Environments (4DE<sup>2</sup>)**  
Donald J. Weidner, Stony Brook University  
SCW
- 32. *In situ* studies of chemical transformations by scattering measurements with 40 keV x-rays (ICT)**  
Jonathan C. Hanson, Brookhaven National Laboratory  
3PW
- 33. NIST Spectroscopy Beamline Suite: Soft and Tender X-ray Spectroscopy and Microscopy (100 eV to 7.5 keV canted sources)**  
Daniel Fischer, National Institute of Standards and Technology  
U
- 34. NIST Spectroscopy Beamline Suite: Hard X-ray Absorption Spectroscopy and Diffraction (4.5 keV to 40 keV three-pole wiggler source)**  
Daniel Fischer, National Institute of Standards and Technology  
3PW
- 35. Soft Inelastic X-ray scattering (SIX)**  
Kevin Smith, Boston University  
U
- 36. High-energy x-ray micro-mapping of materials for advanced energy and structural engineering applications**  
Mark Croft, Rutgers University  
SCW
- 37. Multiscale X-ray Diffraction (MXD)**  
Kenneth Evans-Lutterodt, Brookhaven National Laboratory  
U
- 38. Macromolecular crystallography at a three-pole wiggler beamline**  
Vivian Stojanoff, Brookhaven National Laboratory  
3PW

- 39. Scanned Coherent Imaging for Biological and Organic-materials Research Group (SCIBORG)**  
Chris Jacobsen, Northwestern University  
U
- 40. Coherent Diffractive Imaging Beamline for Biology and Bio/Nano-Science (CDI)**  
Jianwei (John) Miao, University of California  
U
- 41. Ultra-Fast Hard X-ray (UFH)**  
Dario Arena, Brookhaven National Laboratory  
U
- 42. Ultra-Fast Soft X-ray (UFS)**  
Dario Arena, Brookhaven National Laboratory  
U
- 43. Large Area Condenser Zone Plate Transmission X-ray Microscope for High Resolution Magnetic and Materials Science Studies**  
Greg Denbeaux, University at Albany  
tbd
- 44. Complex Materials Scattering (CMS): Automated, high-throughput x-ray scattering for phase discovery and materials informatics in multi-component, heterogeneous, and nanoscale structured systems**  
Kevin Yager, Brookhaven National Laboratory  
3PW
- 45. A high brightness x-ray scattering instrument for biological applications**  
Lin Yang, Brookhaven National Laboratory  
U
- 46. A highly automated instrument for static x-ray scattering measurements of biological molecules in solution**  
Lin Yang, Brookhaven National Laboratory  
3PW
- 47. A Superconducting Wiggler Long Beamline at the NSLS-II for Medical Imaging and Radiation Therapy**  
F. Avraham Dilmanian, Brookhaven National Laboratory  
SCW

**48. Soft Matter Interfaces (SMI): X-ray scattering techniques to address hierarchical structure, self-assembly, and reactions at the interfaces of energy and biomolecular materials and complex liquids**

Ben Ocko, Brookhaven National Laboratory

U

**49. Dedicated Beamline for X-ray Instrumentation Development**

Jeff Keister, Brookhaven National Laboratory

3PW

**50. X-ray Interferometric Lithography (XIL)**

Franco Cerrina, Boston University

tbd

**51. Soft X-ray resonant Elastic Scattering (SES)**

Stuart Wilkins, CMPMSD, Brookhaven National Laboratory

BM

**52. Time-resolved Full Field X-ray Microscopy at Nano and Micro Scale**

Jun Wang, Brookhaven National Laboratory

U

**53. Correlated single-crystal spectroscopy and macromolecular crystallography at an undulator beamline**

Allen M. Orville, Brookhaven National Laboratory

U

**54. Correlated single-crystal spectroscopy and macromolecular crystallography at a three-pole wiggler beamline**

Allen M. Orville, Brookhaven National Laboratory

3PW

**55. Branch line for electron spectroscopy with sub-nanometer spatial resolution**

Yimei Zhu, Brookhaven National Laboratory

U

**56. AIM: Advanced Infrared Microspectroscopy**

Lisa Miller, Brookhaven National Laboratory

IR-SG

**57. IRI: Full-Field Infrared Spectroscopic Imaging**

Lisa Miller, Brookhaven National Laboratory

IR-SG

*Source types:*

bending magnet (BM)

damping wiggler (DW)

infrared standard gap (IR-SG)

infrared large gap (IR-LG)

superconducting wiggler (SCW)

three-pole wiggler (3PW)

undulator (U)