Enhancing the Stability and Performance of the High Energy Resolution Inelastic X-ray Spectrometer at Sector 30

Spokesperson

Ayman H. Said
X-ray Science Division
Phone : 6302527534
Email : said@aps.anl.gov

Contributing authors, XSD-APS

Ahmet Alatas
Ercan E. Alp
Michael Y. Hu
Thomas S. Toellner
Thomas Gog

Contributing authors, external

John Budai, Oak Ridge National Laboratory
Olivier Delaire, Oak Ridge National Laboratory and Duke University
Jason Hancock, University of Connecticut
Jennifer Jackson, California Institute of Technology
Afu Lin, The University of Texas at Austin
Frank Weber,Karlsruhe Institute of Technology

January 25, 2016

Abstract

We propose to upgrade the High Energy Resolution Inelastic X-ray (HERIX) spectrometer beamline at Sector 30 to take advantage of the reduced source size and higher fluxes offered by the APS-U project. The APS-U will provide an opportunity to further improve and enhance the performance of the HERIX spectrometer as well as maintain its competitiveness globally. The upgrade plans for the HERIX spectrometer are driven by the specific needs of the user community for their science projects. The upgrade encompasses many enhancements including, improved energy stability, improved focusing optics, an increase in the incident flux,and new sample environments. The proposed work will enable the study of new materials including thin films, materials under very high pressure and high temperature and heavy fermion materials.