

II-04

Medium energy resolution inelastic x-ray scattering at the National Synchrotron Light Source

Chi-Chang Kao

National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY
11973

The research program at the inelastic x-ray scattering beamline at the NSLS is focused on the study of elementary excitations in condensed matter with total energy resolution on the order of 0.1 eV to 1.0 eV. The source is a 27 pole hybrid wiggler. The phase I beamline consists of a focusing Rowland circle monochromator and a high resolution backscattering spectrometer. It is designed to allow initial experiments to be performed with total energy resolution of 1 eV, and to provide a facility for the testing of new optics. At 8 keV, the energy resolution of the monochromator is about 0.7 eV, and the photon flux delivered onto the sample is about 2×10^{11} per second at 100 mA ring current. Results from selected initial experiments will be reported to demonstrate the capability of the beamline as well as the information that can be obtained from inelastic x-ray scattering experiments. Future development and opportunities will also be discussed.

Supported by US DOE under contract #DE-AC02-76CH00016.