K. Description/Abstract
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HIGH RESOLUTION UPGRADE FOR CORE-LEVEL PHOTOEMISSION SPECTROSCOPY

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We have upgraded the high resolution core-level photoemission beamline U4A at the National Synchrotron Light Source (NSLS), so that it has higher resolution (~30-50 meV) over a broader spectral range (10-200 eV) than is currently available at any other photoemission beamline at NSLS. This has resulted in a beamline performance that is state-of-the-art for core-level photoemission. The previous Toroidal Grating Monochromator (TGM) design with point to point focusing at three separate beamline positions has been replaced by a Spherical Grating Monochromator (SGM) design with only source to sample point focusing. This improves both the resolution and the brightness at the sample so that photoemission microscopy in addition to high resolution core-level spectroscopy is possible. Such an upgraded beamline will prove to be extremely useful in new studies of bimetallic systems and semiconductor interfaces. This upgrade complements the other new beamlines at NSLS that are mainly at higher photon energy (100-1000 eV).

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