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Soft X-rays, Soft Matter and Software

Over the past a few years, we have developed Resonant Soft X-ray Scattering (RSoXS) and constructed the first dedicated resonant soft x-ray scattering beamline at the Advanced Light Source, LBNL. RSoXS combines soft x-ray spectroscopy with traditional hard x-ray scattering thus offers statistical information for 3D chemical morphology over a large length scale range from nanometers to micrometers. Using RSoXS to characterize multi-length scale soft matter with heterogeneous chemical structures, we have demonstrated that soft x-ray scattering is a unique complementary technique to conventional hard x-ray and neutron scattering. Its unique chemical sensitivity, large accessible size scale, molecular bond orientation sensitivity with polarized x-rays and high coherence have shown great potential for chemical/morphological structure characterization for many classes of materials. In addition we developed high performance software to simulate and analysis to address the large amount of data created.

Wednesday, June 18th
1:00 PM GCIS W301

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