

## **Materials Studies in Energy and Catalysis Applications using Spectroscopic Imaging**

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Spectroscopic imaging at synchrotron sources is a powerful technique for spatially resolving chemical and elemental distributions in material studies. This is generally realized via x-ray fluorescence imaging and/or x-ray absorption near edge structure spectroscopic imaging. These techniques provide unprecedented information for studying energy storage and conversion materials--as well as catalysts, where location-dependent chemical evolution is critical and highly correlated to the performance of the material. Systems of interest include lithium-ion battery electrodes, solid-oxide fuel-cell electrodes, and fluidized catalytic cracking catalysts. The Sub-micron Resolution X-ray Spectroscopy (SRX) beamline at NSLS-II will enable such capabilities with both sub-micron and sub-100 nm resolution. The beamline status and related scientific examples will be presented.