

Capability/Need

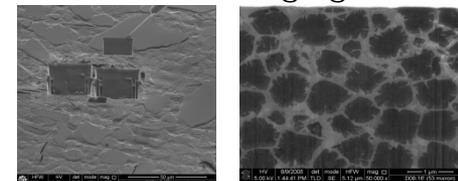
- **New radiological capability** to image and analyze radiological materials with high spatial resolution
- 3D section analysis using focused ion beam and electron backscattering diffractions/energy dispersive x-ray spectroscopy software
- Site-specific transmission electron microscopy sample prep
- **Extends** EMSL capabilities in electron microscopy and surface analysis

Science/Users

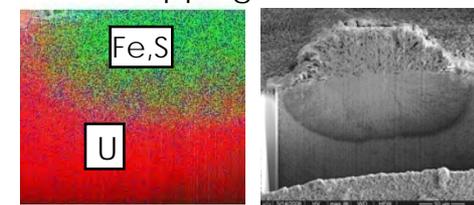
- Enables precise imaging and compositional analysis at nanometer scale
- Essential tool for ceramics, geochemistry, geology, and materials science investigators
- Enables 3D imaging and compositional analysis at nanometer scale, particularly relevant to identifying the location, phase and composition of environmental contaminants



SEM Imaging



EDX Mapping



EMSL Strategy Alignment; Specifics

- Science themes: Geochemistry/Biogeochemistry and Subsurface Science; Science of Interfacial Phenomena
- Cross-cutting challenges: Static-Dynamics; Design/Synthesis of Complex Materials
- EMSL capability area: Microscopy
- Anticipated availability: April 2010
- Technical POCs: Bruce Arey, Jim McKinley