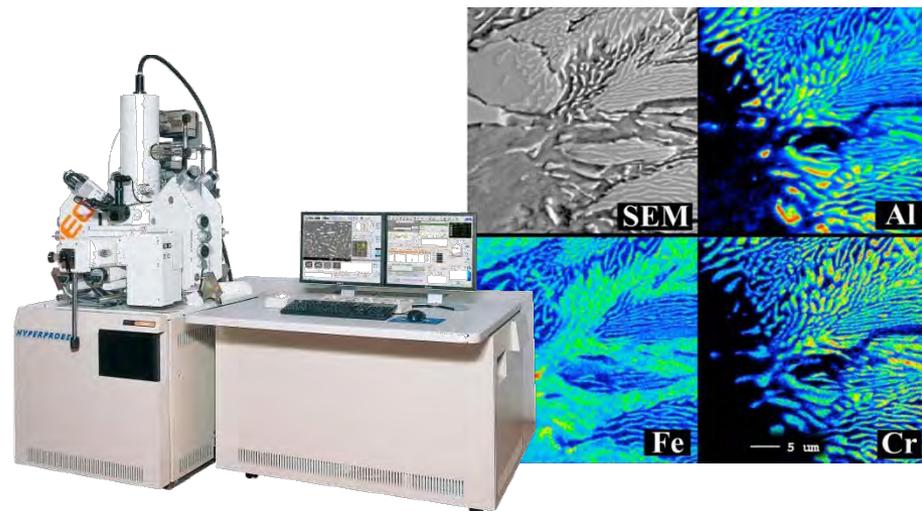


Capability/Need

- **New** capability to analyze solid-phase elemental concentrations at ppm levels:
 - High spatial resolution scanning electron microscope with combined compositional information
 - Cathodoluminescence imaging.
- **Complements and enhances** capabilities in electron microscopy, electron spectroscopy, and surface analysis
- To be located in EMSL's **new EMSL Radiological Capability**



Science/Users

- Precise, non-destructive imaging and compositional analysis at μm scale
- Geochemical analyses to aid inorganic/radionuclide fate and transport studies
- Cathodoluminescence to identify growth episodes in solids
- Chemical analysis and imaging of radionuclide location with high spatial resolution

EMSL Strategy Alignment; Specifics

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