Surface Analysis at AECL

AECL's world-class expertise in the surface science disciplines—metallurgy, chemistry, physics, microscopy and vacuum technology—combines the in-depth knowledge of our experienced staff with our extensive laboratory resources to help clients solve a wide range of industrial materials problems. Whether it's for materials analysis or to complement your R&D capabilities, AECL can provide cost-effective solutions. We are also a realistic alternative to equipping in-house facilities with expensive, under-utilized equipment.

The AECL Advantage

Active and Non-active Handling

Examination of the outer few atomic layers at surfaces and interfaces can provide considerable insight into the performance of metals and ceramics in the nuclear industry. AECL can handle radioactive as well as non-radioactive samples. We have a full range of analytical capabilities, and our hot cells, with shielded instruments, include a metallographic lab and a shielded machine shop. Radioactive samples can be accommodated through all phases of preparation and analysis in these shielded facilities, and can be dissected, tested and analyzed with our specialized equipment.

Surface analysis techniques can be used either to pinpoint problems or to confirm the success of a manufacturing process

Surface Analysis Methods

Experts at our Sheridan Park and Chalk River locations combine the use of state-of-the-art technology with a thoughtful, integrated approach to problem solving. Their experience ranges from fundamental research on metals to commercial contracts for failure analysis. Materials experience includes metal and alloy reactor components, metal-oxide corrosion deposits, ceramic oxide fuel materials, and polymers and coatings used elsewhere in nuclear power plants. AECL's key areas of expertise include:

- material identification, characterization, and qualification
- mechanical failure analysis
- corrosion analysis
- non-destructive testing and analysis
- sample preparation for metallographic and surface analysis
- metallographic examination
- characterization of radioactive specimens
- process qualifications, for example, decontamination and cleaning