

## WHO ARE WE?



Corrosion possess a serious problem in the field of automobile engineering, civil engineering and most specifically the oil and gas industry. Harsh operating conditions such as high temperature, pressure and acid/chloride environment leads to structural failure and deterioration of materials.

However, regular corrosion monitoring helps to preserve existing industrial equipment, ensures maximum lifetime, avoids costly interruption of production, thereby reducing the possibility of spillage or leaks.

We are well-equipped laboratory with expertise in providing testing and analytical services for mechanical and chemical testing of polymers, metals and other materials. Our technical staff have access to state-of-the-art laboratory facilities at National Institute of Nanotechnology (NINT), Edmonton and nanoFAB: Fabrication and characterization facility at University of Alberta



*We offer our extensive experience in:*

- *Material testing and characterization*
- *Failure Analysis*
- *Corrosion Analysis*

SERVICE AND CAPABILITIES

## MATERIAL TESTING

Material selection forms an essential part to avoid long term corrosion or fail in industries. Materials are often exposed to high temperature and pressure, chemicals and oxidizing/corroding agents. Hence, the understanding of their compatibility and stability provides valuable insight into choosing the suitable material. Our techniques involve subjecting the materials to simulated environment and we employ the use of our high temperature ovens & muffle furnaces, GC-MS, Phase transition studies (TGA-DSC) and FTIR to evaluate the performance of the materials to operate at maximum efficiency.

## FAILURE ANALYSIS

Our failure analysis services is a comprehensive package that provides complete analysis of your product to the details of microstructure level. These services extends to metals as well as nonmetals. Contamination testing, detection and identification forms the crucial procedure for material failure. We isolate and identify suspected contaminants in various sample types such as solids, liquids, gases, surface, metals, powder and polymers to trace levels. ICP-MS, spectroscopy & microscopy, analytical HPLC are few of the equipment used to contamination assessment.

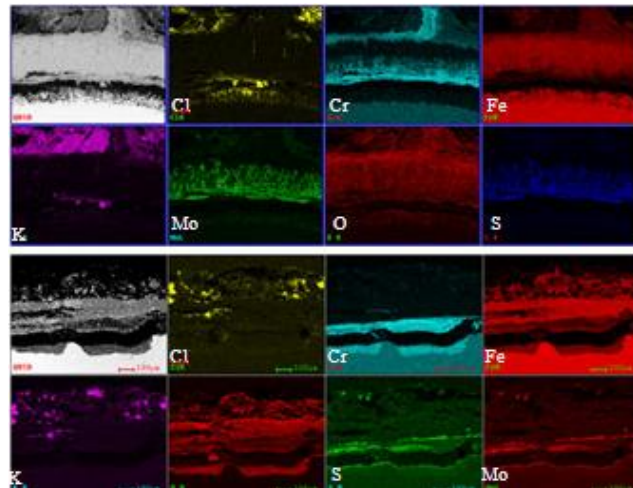


**SERVICE AND CAPABILITIES**

**MATERIAL TESTING**

We expedite the failure determination depending on the client's issues:

- ❖ Chemical verification
- ❖ Optical Profilometry
- ❖ Physical & material strength testing
- ❖ Scanning Electron Microscopy(SEM)
- ❖ Energy Dispersive X-ray Spectrometer (EDX)
- ❖ Fourier Transform Infra-Red Spectroscopy(FTIR)
- ❖ Dielectric thickness mapping system



**CORROSION ANALYSIS**

Our corrosion expertise covers wide range of applications and assist with corrosion investigations. Our laboratory can assist in various ASTM tests:

- ASTM G1: Standard test for cleaning, preparing and evaluating corrosion test specimen
- ASTM G31: Immersion testing for determination of rate of corrosion in aqueous solutions
- ASTM G48: Method A for ferric chloride pitting and crevice tests
- ASTM G102: Rate of corrosion calculation from Rotating ring disk electrode
- ASTM E3 & E407: Microstructure revelation by mounting, cross-sectioning & etching

