LUCIDEON
insight creating advantage

FAILURE ANALYSIS

Interpreting the story told by a failed material requires a disciplined and methodical analytical approach, combined with an understanding of materials science and engineering. Lucideon is renowned for using state-of-the-art analytical techniques and our special strength in the systematic examination of evidence to determine the root cause of failures in metallic and non-metallic materials.

CAPABILITIES

We offer complete physical and chemical analysis capabilities for analyzing failures in metallic and non-metallic materials.

- Specimen extraction & wire EDM
- In-house CNC machine shop
- Chemical analysis
- Fractography
- Metallographic preparation
- Metallurgical evaluation
- Image analysis/microscopy
- SEM-EDS/electron microprobe
- Advanced surface analysis
- Mechanical testing
- Thermal analysis
- Electrical testing
- Expert witness services

INTERACTIVE APPROACH

We are dedicated to a cooperative, analytical approach to materials problem-solving. This world-class service allows our clients to make critical decisions based on reliable, accurate information.

EXPERTISE IN METALLIC MATERIALS

Our expertise in metallic materials encompasses analysis of corrosion, erosion, wear, fatigue, heat treatment, castings, coatings and surface treatments, powder metallurgy, welding, brazing, component design, and the analysis of contamination.

EXAMPLES

- Vane cracking in an impeller assembly for aerospace applications
- Weld failure leading to highway bridge collapse during construction
- High failure rate on o-rings
- High-voltage insulation failure in electrical equipment
- Bolt failure in a chemical mixer assembly
- Trip failure in electrical relays used in nuclear power plants
- Staining on dental instruments
- Broken alignment pin on gun barrel
- Coating adhesion failure on titanium alloy components
- Corrosion and wear-related failure of seal rings in an electric utility generator
- Root cause of deposit build-up on process equipment