LAMBDA Technologies Group.

Laboratory Services

IMPROVING COMPONENT LIFE AND PERFORMANCE

Lambda Technologies operates a world-class laboratory facility and is the pre-eminent source of residual stress measurement and analysis worldwide. Lambda delivers quality driven, reliable results in a timely manner to a wide range of industrial, government and academic clients.

With over 150 years of combined experience and more than half a million completed measurements, Lambda is a name people trust. Full-time residual stress technicians and engineers provide exact results and in-depth analysis, so we can offer more than data. We give you solutions.

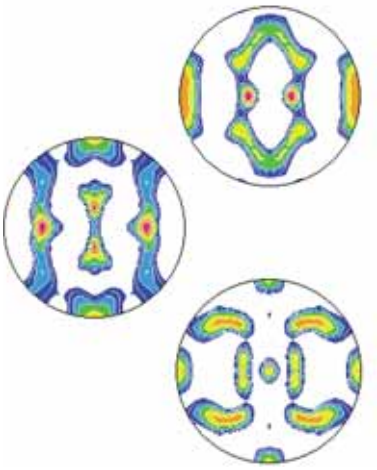
SERVICES

X-Ray Diffraction Residual Stress Measurement

- Accurate surface and subsurface measurements
- X-Ray elastic constant library for over 300 materials
- Automated stress field mapping
- Combined mechanical and XRD measurement
- Principal stress determination
- High resolution Si(Li) detectors with multiple radiations

Qualitative Phase Analysis

- Graphite monochromators provide optimal detection limits
- In-situ identification of corrosion products and coatings
- Data collection system tailored to a broad array of materials
- All diffractometers are calibrated to NIST standards
- Automated match to JCPDS data file system



Quantitative Phase Analysis

- Retained austenite measurement per ASTM and SAE standards
- Hydroxylapatite analysis for surgical implants per ASTM standards
- Quantification of one or more components in a system
- Calculation of total crystallinity of a mixture

Texture Analysis

- Measurement of crystallographic texture developed by manufacturing operations like extrusion, drawing, casting, rolling, and coating processes
- Manufacturing process monitoring and quality control
- Texture measurements made per ASTM Standard
- Orientation Distribution Function (ODF) analysis.

Lifing Analysis

- Reliably introduce compression into components
- Analytical assessment of fatigue performance for a given damage and residual stressd distribution

Certifications

Lambda is a Testing Laboratory Accredited by A2LA, Certificate Number 0138.01
Where applicable, our testing meets the standards of ASTM, SAE, NACE, ECS and API.

A2LA ACCREDITED

For more information, call 1-800-883-0851 or
visit us online at www.lambdatechs.com

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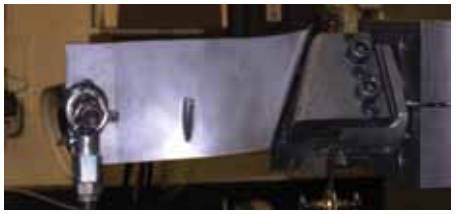
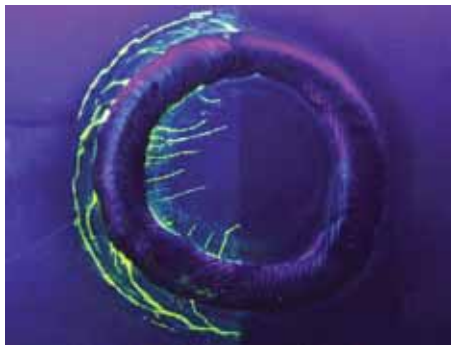
Fatigue Testing



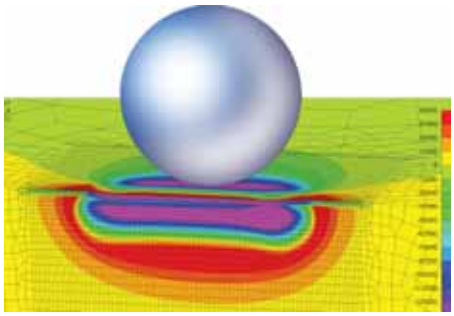
- HCF systems capable of 10,000 lb max load providing rapid assessment
- Testing to simulate damage mechanisms, including foreign object damage, corrosion, and fretting
- Sample and fixture design for application-specific testing
- 4-point bend and cantilever testing capabilities
- Servo hydraulic test frame with 50,000 lb max capability
- Crack growth monitoring

Corrosion Testing



- Evaluate the influence of manufacturing processes on corrosion properties
- Environmentally assisted cracking tests including SCC, SSC, and HE
- Alternate immersion testing
- General corrosion testing
- Polarization studies
- Pitting analysis

Finite Element Analysis



- Engineered residual stress solutions
- Determination of applied stress
- Modal analysis
- Prediction of compensatory tension and distortion
- Rigorous layer removal correction for XRD residual stress measurement
- Optimization of machining sequence to minimize distortion

Mechanical Residual Stress Measurements

- Ring-core technique provides principal residual stress measurements incrementally versus depth
- Center hole-drill measurements per ASTM standards
- Bulk sectioning residual stress measurement capabilities
- Strain gage instrumentation services
- In-field measurement capabilities
- Various machining and sectioning equipment including band saws, chop saws, plunge and wire EDM, CNC mills and lathes

Support Services

- Fractography via optical and scanning electron microscopy
- Characterization of cracks using fluorescent dye penetrant
- Video capture of crack propagation
- Macro and micro hardness testing
- Thermal and mechanical residual stress relaxation studies
- Process optimization

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