

LABORATORY SERVICES ANALYSIS – EXAMINATION – TESTS

Allianz Center for Technology (AZT)

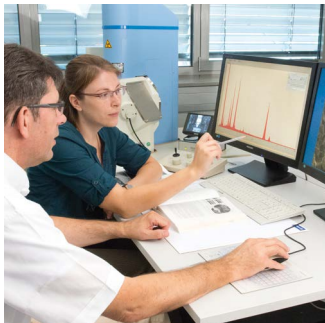
JUNE 2018

SEEING THE DETAILS

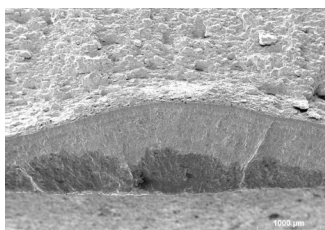
The causes of damage to machines or technical systems often lie in details invisible to the eye. At the Cooperation Laboratory of the Allianz Center for Technology (AZT) and the "Gesellschaft für Werkstoffprüfung" (GWP), experts assess damages and analyze the quality of materials and constructions.

Damage analysis findings help to enhance products and process as well as improve the operational safety of systems. Hence, seeing the details helps detecting and preventing risks before they become an expensive reality.

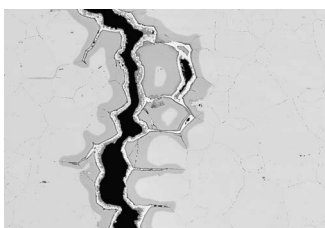
In the Cooperation Laboratory experts are using a diverse range of state-of-the-art laboratory equipment including Scanning Electron Microscopy (SEM) and Optical Microscopy as well as various chemical, mechanical and non-destructive test methods.



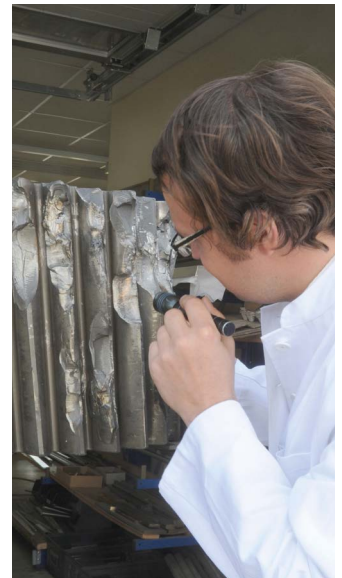
Crack in a steam turbine blade



SEM Image – fatigue fracture surface



Optical microscopy – stress corrosion in austenitic steel



YOUR BENEFITS

- ✓ Independent material evaluation by highly-qualified personnel and state-of-the-art equipment for comprehensive failure analysis
- ✓ Identification of damage mechanisms and specific recommendations on failure prevention with respect to material application and installation

AZT LAB METHODS:

NON-DESTRUCTIVE TESTING

Endoscopy, Ultrasonic, Surface Crack Testing, Residual Stresses

CHEMICAL ANALYSIS

Materials and Coatings, Fat and Oil, Water, Organics, Corrosion Products

POWDER DIFFRACTION (XRD)

MECHANICAL TESTING

Tensile Test, Notch Impact Test, Hardness Measurement

MICROSCOPY

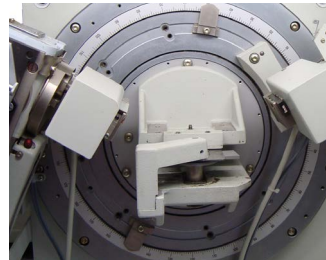
Scanning electron microscope (SEM), Optical microscope



Ultrasonic measurement



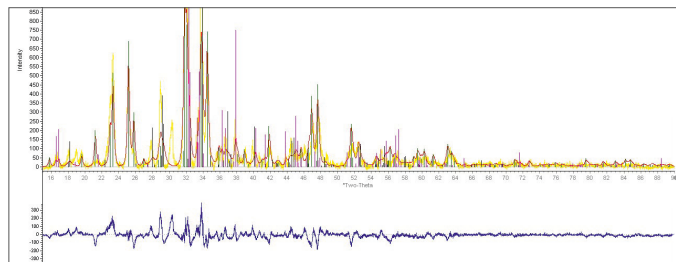
Endoscopic inspection



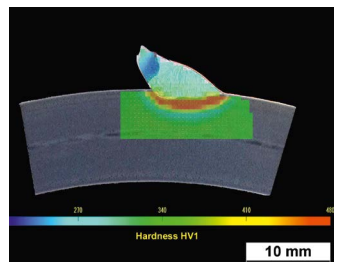
X-Ray diffractometer



Analysis of water samples



Infrared spectrum of plastic material



Hardness mapping of weld seam

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ENGINEERING HOTLINE OF AZT

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