

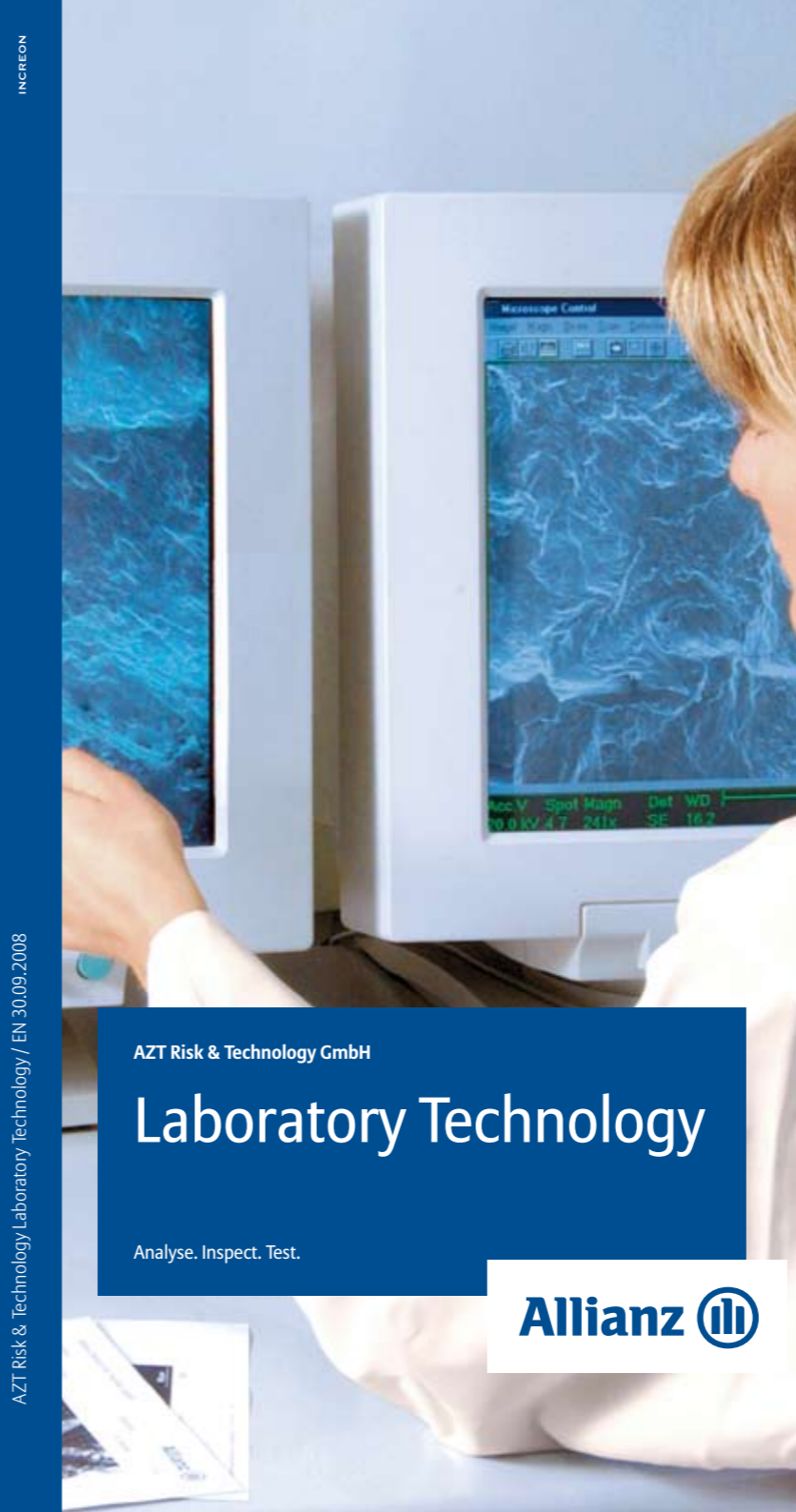
Overview of All Services

Chemistry laboratory	Material analysis Surface coating analysis Grease/oil analysis Water quality analysis Organic/synthetic analysis Mobile measurements for water/steam circuits
Fire laboratory/ fire tests	Fire tests Fire/extinguishing behaviour
Non-destructive testing technology	Ultrasonic testing Surface crack testing Surface roughness measurement Mobile metallography of machine components Endoscopy
Machinery diagnostics	Vibration and displacement measurement Strain measurement Torque measurement
Materials laboratory	Photo documentation, macroscopy Scanning electron microscopy Metallography X-ray diffractometry Mechanical properties testing

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AZT Risk & Technology GmbH

Laboratory Technology

Analyse. Inspect. Test.

Allianz 

See the details

In the case of damage to machines or technical installations, the causes often lie in the details invisible to the naked eye. The Allianz Center for Technology (AZT) analyses damages and inspects the quality of materials and structures.

After the damage is before the damage.

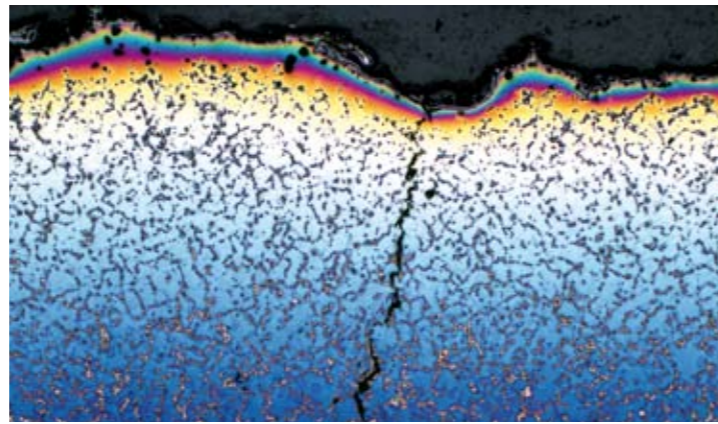
For decades, with the help of a variety of modern laboratory equipment, the experts at AZT Risk & Technology GmbH have analysed causes of damage, tested solutions for damage control and inspected concepts for long-term damage prevention. Since mid-2008, AZT Risk & Technology GmbH has been working in an expanded capacity in the **mutual laboratories** with the Society for Materials Testing (GWP) in Zorneding near Munich.

Expert groups are composed of specialists in mechanical engineering, chemistry, electrical and process engineering, operational behaviour, construction and diagnosis, corrosion, fires, and general materials questions.

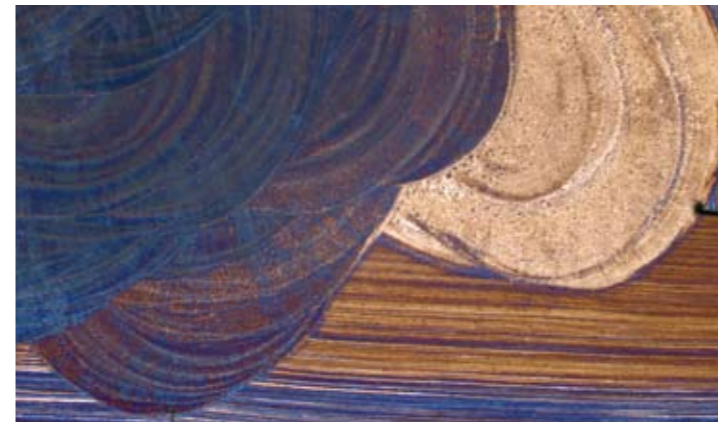
The interdisciplinary cooperation of the highly qualified laboratory team with responsible engineers from expert groups assists in researching the causes of damage in a detailed fashion and discovering material defects and weaknesses, so that risks may be recognized and avoided before they become an expensive reality.

Knowledge & Technology

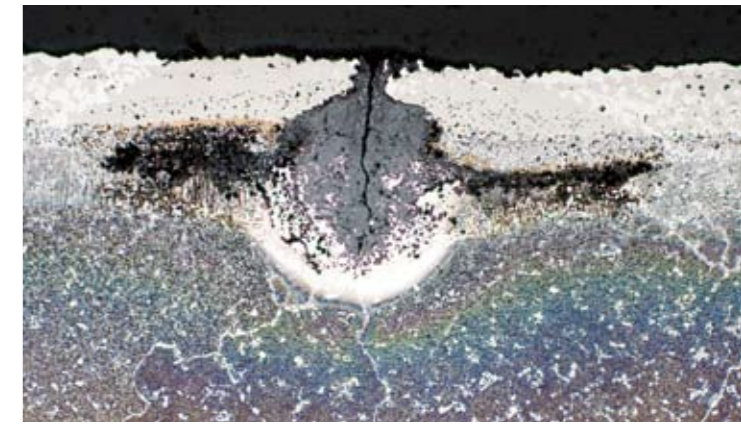
Whether for damage analysis, evaluation of repair methods or prevention research – the AZT Laboratories have highly qualified employees and state-of-the-art equipment for investigations and tests of all kinds.



Structure of an overheated furnace part after electrolytic etching with a 10% lead acetate solution.



Welding joint in steel sheet.



Oxidized tip of a crack on the coated surface of a gas turbine blade.

Exploit findings.

Investigations are about more than just pure damage analysis. Expertise about current damage is related to the knowledge of the past. This know-how flows again into risk estimation, prevention, and loss minimisation.

The AZT Laboratories with their wide variety of technical capabilities takes on an interdisciplinary function, thus supporting the **consulting competency** and customer orientation of Allianz.

With our services, we offer you success and efficiency through quality and competency, as well as added value in the form of a full-scale risk partnership.

Lab service	Aims of investigation / areas of application	Methods
Macroscopy	Visual assessment and photographic documentation of damaged parts	Stereo magnifiers, digital studio cameras
Fractography (scanning electron microscopy)	Fracture mechanics, surface changes, surface analysis	SEM, EDX and WDX analyses
Metallography (optical microscopy)	Crack propagation, corrosion, microstructure conditions, microhardness	Reflected light microscope
Mechanical materials testing	Material properties of machine components or samples	Hardness measurement, tensile testing, Charpy-type impact testing
Non-destructive testing technology	Testing for surface and internal faults	Ultrasonic testing, surface crack testing, endoscopy, mobile metallography (microstructure imprint, hardness), mobile sampling system (SSAM)
Machinery diagnostics / vibration technology	Vibration behaviour of machinery and components, determination of component loads, remote diagnosis, measurement of torques through telemetry	Measurement with absolute and relative vibration sensors, strain gauges, remote monitoring of machine measurement data and characteristics
Fire tests	Fire behaviour of materials and machines, extinguishing tests, investigation of fire residues	Temperature and gas measurements
Material analysis	Metals, plastics, ceramics	X-ray fluorescence spectrometry (RFA), infrared spectrometry (IR), X-ray diffractometry
Surface coating analysis	Corrosion products, deposits	(powder XRD), ion chromatography (IC)
Water quality investigations	Corrosion behaviour in water / steam circuits, cooling and service water circuits, drinking water	
Grease / oil analysis	Lubricants for turbines, engines, drives, hydraulic systems, bearings	
Mobile measurements for water / steam circuits	Corrosion behaviour, quality control	pH value, conductivity, oxygen, sodium ions, hydrogen, cations