

Firmenprofil | ZwickRoell Authorized Partner Laboratory

CERTANIA

INDUSTRIAL ANALYTICS

CERTANIA Industrial Analytics GmbH
Georg-Wimmer-Ring 25 • 85604 Zorneding
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| Company Profile

CERTANIA Industrial Analytics GmbH is a strong and reliable partner for **materials engineering, industrial analytics, failure analysis, quality assurance, calibration, reference samples and test engineering**.

We combine accredited testing and calibration procedures with advanced analytical methods, state-of-the-art testing technology and many years of engineering expertise. Our portfolio ranges from material identification and material characterization to mechanical and non-destructive testing as well as environmental, corrosion, fire and component testing.

Our portfolio is complemented by failure and root-cause analysis, process and quality management, accredited calibration of spark spectrometers, reference samples, as well as customized test engineering and specialized test equipment.

Our services support customers in **R&D, production and quality assurance** in material selection, product development, qualification, product release, incoming goods inspection, production monitoring, complaint handling and failure investigation.

| Locations

Zorneding / Munich – Headquarters

Georg-Wimmer-Ring 25
85604 Zorneding, Germany

Aichach

Joseph-von-Fraunhofer-Str. 4
86551 Aichach, Germany

Ensdorf

Auf Nauwies 10
66806 Ensdorf, Germany

Westhausen

In der Waage 10
73463 Westhausen, Germany

ZwickRoell GmbH & Co. KG

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Commerzbank AG, Ulm

S.W.I.F.T.-Code COBADEFF 630
IBAN € DE15 6304 0053 0929 4109 00
IBAN \$ DE85 6304 0053 0929 4109 01
Sparkasse Ulm
S.W.I.F.T.-Code SOLADES1ULM
IBAN DE24 6305 0000 0000 0797 56

Geschäftsführer:

Klaus Cierocki (Vors.)
Christine Dübler • Ping Bu Loke
pers. haftende Gesellschafterin:
ZwickRoell Verwaltungsgesellschaft mbH, Ulm
Registergericht Ulm HRB 4361
Ust-IdNr: DE147043343



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Steinheim am Albuch

Daimlerstraße 5–7
89555 Steinheim am Albuch, Germany

Kirchheim near Munich

Benzstraße 2b
85551 Kirchheim bei München, Germany

| Subsidiaries

Ulm – SpineServ GmbH & Co. KG

Söflinger Straße 100
89077 Ulm, Germany

Erkelenz – CERTANIA Energetic Systems GmbH

Gewerbestraße Süd 43
41812 Erkelenz, Germany

| Contact

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| Certifications

- Accredited according to **DIN EN ISO/IEC 17025**
- **TISAX® certified**

| Service Overview / Expertise

| Industries

Automotive · Mechanical and Plant Engineering · Electrical Engineering & Electronics · Metal Industry & Aluminium · Basic Materials Industry · Aerospace · Defence · Medical Technology · Energy & Environment · Construction

| Materials & Components

Plastics · Metals · Composite Materials

| Testing & Engineering Services

Materials Engineering and Industrial Analytics

- Metal analysis and material identification
- Optical Emission Spectrometry (OES), mobile and stationary
- X-Ray Fluorescence Analysis (XRF)
- Scanning Electron Microscopy with EDX (SEM/EDX)
- Glow Discharge Optical Emission Spectrometry (GDOES)

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- X-Ray Diffraction (XRD)
- Ion Chromatography (IC)
- Plastics and composite material analysis
- FTIR, DSC, TGA, DMTA, GC-MS and GPC
- Material characterization and failure analysis

Mechanical Material and Component Testing

- Tensile, compression, bending, torsion and shear testing
- Charpy impact and fracture mechanics testing
- Weld and component testing
- High- and low-temperature testing
- Static and dynamic testing
- Special testing and customer-specific test procedures

Fatigue and Fatigue Strength Testing

- Fatigue and service life investigations
- S-N curves and fatigue life characterization
- Load- and displacement-controlled testing
- Axial, bending and torsional fatigue testing
- Combined loading conditions
- Testing of materials, welded joints and components
- Fatigue testing at temperatures up to **+1,250 °C**

Non-Destructive Testing (NDT)

- Visual Testing (VT)
- Penetrant Testing (PT)
- Magnetic Particle Testing (MT)
- Ultrasonic Testing (UT)
- Phased Array Ultrasonic Testing (PAUT)
- Time-of-Flight Diffraction (TOFD)
- Radiographic Testing (RT)
- Digital Radiography (DR) and Computed Radiography (CR)
- Wall thickness and mobile hardness measurements
- Testing of welded joints and components

Metallography and Hardness Testing

- Microstructural analysis and evaluation
- Weld examination
- Grain size and cleanliness determination
- Graphite classification
- Coating and case-depth investigations
- Fracture surface analysis
- Hardness testing according to Vickers, Brinell, Knoop and Rockwell
- Plastic hardness testing according to Shore
- Microhardness and hardness profiles
- Determination of case-hardening, hardening, nitriding and decarburization depth

Climate, Environmental, Corrosion and Aging Testing

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- Climate and humidity testing
- Temperature cycling and thermal shock testing
- Weathering testing
- Condensation water testing
- Salt spray and cyclic corrosion testing
- Investigation of intergranular, pitting and crevice corrosion
- Aging and long-term durability testing
- Simulation of defined environmental and service conditions

Coating and Surface Testing

- Coating thickness measurements
- Adhesion testing
- Scratch and stone-chip testing
- Chemical and media resistance testing
- Color and gloss measurements
- Evaluation of corrosion, cracks, blistering and delamination
- Investigation of coating and surface defects

Industrial X-Ray and Computed Tomography

- 2D X-ray inspection
- 3D computed tomography (CT)
- Geometric and dimensional analysis
- CAD comparison / nominal-to-actual comparison
- Wall thickness and porosity analysis
- Crack and defect analysis
- Assembly and installation inspection
- Composite material analysis
- Reverse engineering
- Digital 3D visualization

Fire Testing and Safety Testing

- Flammability and ignitability testing
- Horizontal and vertical burning tests
- Needle flame and glow-wire testing
- Limiting Oxygen Index (LOI)
- Smoke gas and smoke density testing
- Heat release analysis
- Cable, component and assembly testing

Energetic Materials and Pyrotechnics

- Characterization and qualification of energetic materials
- Burn rate and internal pressure testing
- Closed-vessel testing
- Investigation of deflagration and explosion phenomena
- Pyrotechnic component and propellant testing
- Airbag and safety system testing
- Development-related testing
- Failure analysis and field investigations

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Medical Devices and Implants

- Static and dynamic implant testing
- Spinal implant testing
- Endoprostheses
- Osteosynthesis systems
- Dental implants
- Strength, fatigue and wear testing
- Testing of medical technology components and systems
- Design Verification and Design Validation
- Development of customer-specific test methods

Failure Analysis and Expert Services

- Systematic failure and root-cause analysis
- Root Cause Analysis (RCA)
- Failure Analysis
- Investigation of fractures, cracks, corrosion and wear
- Analysis of manufacturing and assembly defects
- Process and quality analysis
- Assessment of process capability and process stability
- Complaint and supplier support
- Technical expert reports and assessments
- Development of corrective and preventive measures

Calibration Laboratory and Reference Samples

- Accredited calibration of spark spectrometers
- Calibration of glow discharge spectrometers
- On-site and laboratory calibration
- Certified and traceable reference samples
- Standard and customer-specific reference samples
- Compilation and expansion of reference sample sets
- Consulting on the selection of suitable reference samples
- Reference samples for steel, cast iron, aluminium, titanium, nickel, zinc, magnesium and copper

Test Engineering

- Development of customer-specific test and testing systems
- Design and engineering of specialized test equipment
- Test engineering for defence applications
- Test systems for airbag and pyrotechnic applications
- Integration of measurement technology and data acquisition
- Test process automation
- Development of customer-specific test procedures
- Commissioning and qualification of test systems
- Integration of testing technology, measurement technology, automation and scientific-technical analysis

| Technical Equipment

Analytics and Material Characterization

- Stationary and mobile OES spark spectrometers
- GDOES systems
- X-Ray Fluorescence Analysis (XRF)
- Scanning electron microscopes with EDX
- X-Ray Diffraction (XRD)
- FTIR spectroscopy
- Ion chromatography
- Gas Chromatography–Mass Spectrometry (GC-MS)
- Gel Permeation Chromatography (GPC)
- Differential Scanning Calorimetry (DSC)
- Thermogravimetric Analysis (TGA)
- Dynamic Mechanical Thermal Analysis (DMTA)
- Karl Fischer titration
- Melt Flow Rate testing (MFR/MFI/MVI)

Mechanical and Materials Testing

- Universal testing machines for static and dynamic testing
- Equipment for tensile, compression, bending, shear and torsion testing
- Test rigs for fatigue and fatigue strength testing
- Testing at elevated and low temperatures
- High-temperature testing technology up to **+1,250 °C**
- Equipment for fracture mechanics and crack growth investigations
- Hardness and microhardness testing equipment

Non-Destructive Testing

- Ultrasonic testing equipment
- Phased Array Ultrasonic Testing
- TOFD
- Magnetic particle and penetrant testing equipment
- Mobile hardness and wall thickness measurement equipment
- Film, CR and digital 2D X-ray technology

Metallography and Microscopy

- Advanced sample preparation
- Metallographic specimen preparation
- Light microscopy
- Macroscopy
- Scanning electron microscopy
- Digital image analysis
- Specialized etching and contrast techniques
- Equipment for replica preparation

Climate, Environmental and Corrosion Testing

- Climate chambers

- Temperature cycling and thermal shock equipment
- Weathering test systems
- Condensation water test equipment
- Salt spray test chambers
- Equipment for cyclic corrosion testing
- Test equipment for defined media and environmental exposure conditions

X-Ray and Computed Tomography

- Industrial 2D X-ray inspection
- High-resolution industrial computed tomography

Specialized Test Equipment and Test Engineering

- Customer-specific test rigs and test systems
- High-speed measurement and data acquisition
- Measurement technology and sensor integration
- Specialized test equipment for defence, airbag and pyrotechnic applications
- Customer-specific testing and measurement systems
- Development and validation test rigs

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