



MATERIAL AND PROCESS ANALYSIS

Range of services at the LKR test center



FROM MICRO TO MACRO

Using modern methods, the LKR offers a complete spectrum of microstructure, material and process characterization procedures.

//01 MATERIAL ANALYSIS

- Experimental alloy production, process control according to industrial parameters
- Production with industry-orientated tools
- Chemical, microstructural und mechanical material characterisation



//01

//02 PROCESS ANALYSIS

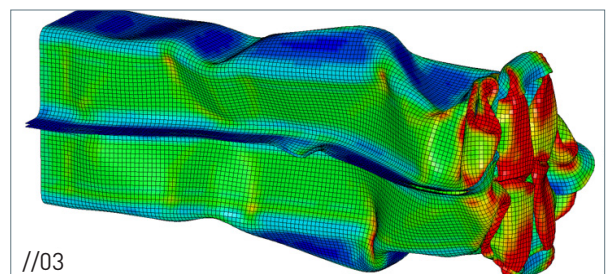
- Analysis and assessment of structure from the perspective of production process
- Validation and optimisation of heat treatment parameters
- Validation and optimisation of forming processes



//02

//03 PRODUCT ANALYSIS

- Chemical and qualitative damage assessment
- Test of defined material parameters



//03



ANALYSIS AND TEST METHODS

Our advanced analysis methods in the field of the development of new materials and processes offer you the decisive head start.

//01 MATERIALOGRAPHY

- Analysis of complex compound materials
- Charakterisation of topology

//02 SPECTROMETRY

- Al- and Mg-base alloys

//03 DILATOMETER

- Miniaturised sample geometries
- Simulation and charakterisation of forming processes and heat treatment processes

//04 ANALYSIS OF NOTCH RUPTURE

- Fully instrumented notch impact test

//05 DEFORMATION ANALYSIS

- Fully instrumented deformation analysis of sheet materials
- Nakajima- and cupping test

//06 MECHANICAL MATERIALS TESTING

- Tensile and pressure test from -170°C up to 300°C
- Brinell hardness testing

//07 FATIGUE TEST

- of material samples and components

//08 METALLOGRAPHY

- Charakterisation of grindings
- Grain size measurement
- Analysis of microhardness

//09 DSC

- Phase formation and phase transformation
- Characterization of heat treatment parameters

//10 ELECTRON MICROSCOPY

- High-resolution field emission SEM with numerous detectors
- Energy-dispersive X-ray spectroscopy (EDX) for the analysis of intermetallic phases
- Electron backscatter diffraction (EBSD) for the analysis of crystal structure and orientation





As a subsidiary of AIT LKR Leichtmetallkompetenzzentrum Ranshofen GmbH is pursuing a holistic research and development approach to lightweight construction in the vehicle sector - from new metal alloys and process technology to material-related structural design.



This makes LKR a powerful and independent partner for your development projects.

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