Fraunhofer
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FRAUNHOFER INSTITUTE FOR MANUFACTURING TECHNOLOGY
AND ADVANCED MATERIALS IFAM, BRANCH LAB DRESDEN

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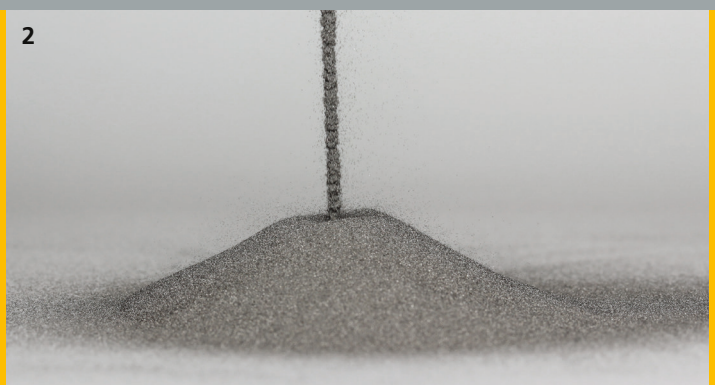
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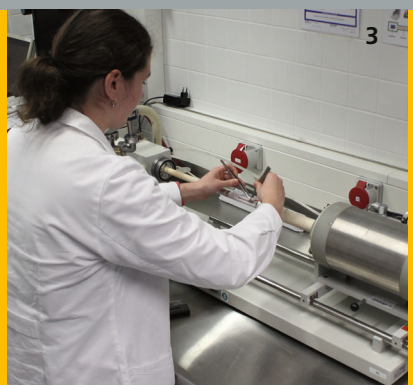
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1 *Retsch HORIBA LA-950*
2 *Bulk powder*
3 *Thermal analysis*

DAkkS
Deutsche
Akkreditierungsstelle
D-PL-11140-06-00

Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM Branch Lab Dresden

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ACCREDITED TEST LABORATORY AT FRAUNHOFER IFAM DRESDEN

The characterization of metal powders, the starting materials for all powder-based processes, as well as components is the requirement for a constant process and component quality.

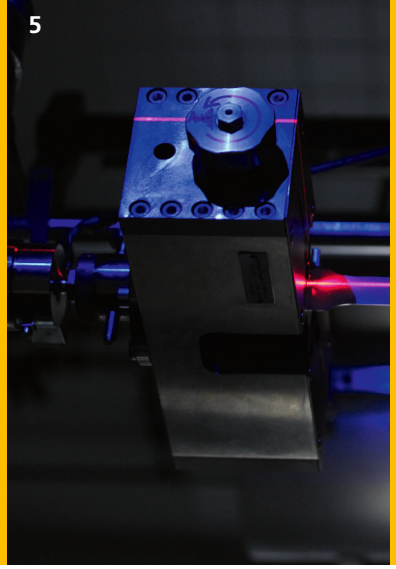
Since 1998, Fraunhofer IFAM Dresden operates part of its laboratories as accredited test laboratory according to DIN EN ISO/IEC 17025:2005 and is regularly inspected by DAkkS.
The accreditation is an internationally recognised proof of competence and includes among others technical competence, quality management, impartiality and confidentiality of the data.
As a prerequisite for high-quality results, measuring instruments are periodically checked by accredited calibration laboratories. The laboratory also regularly participates in proficiency tests and interlaboratory comparison.

The main focus of the institute's work is powder metallurgy and composite materials. The extensive experience of the laboratory is a result of the wide range of materials used and the diverse requirements on processing properties for the different fields of application.

The laboratory is involved in the research and development of projects carried out at the institute in the fields of energy technology, aviation, medical technology and automotive, among others.

The services of the accredited test laboratory include standardised procedures with the following focal points:

- Characterisation of powders and sintered materials
- Elemental analysis
- Mechanical testing
- Determination of the thermal expansion of solids



Our services for you

Topic	Measurement quantity (Temperature range)	Procedure/ equipment	Standard / reference
Powder analytics	Material density	Gas pycnometer Accupyc 1330 / Micromeritrics	DIN 51913
	Apparent density, funnel method	Design according to standard	DIN EN ISO 3923-1
	Tap density	Jolting volumeter STAV 2003 / Engelsmann	DIN EN ISO 3953
	Flow rate by means of a calibrated funnel	Design according to standard	DIN EN ISO 4490 DIN EN ISO 13517
	Particle analysis	Laser diffraction LA950 / Horiba	ISO 13320
	Specific surface area	Gas adsorption / BET Autosorb AS-1 / Quantachrome	DIN ISO 9277
Elemental analysis	Carbon, Sulfur	CS230 / LECO	DIN EN ISO 15350 DIN 54387-3
	Oxygen, Nitrogen	TCH600 / LECO	DIN EN ISO 4491-4 DIN 54387-3 DIN EN ISO 15351
Component characterization	Component density, impermeable	Archimedean scales XP 204 / Mettler Toledo	DIN EN ISO 3369
	Component density, porous		DIN EN ISO 2738 DIN 623-2
	Apparent hardness	Hardness tester Falcon 503 / Innovatest Nemesis 5102 / Innovatest	DIN EN ISO 4498
	Hardness, Vickers		DIN EN ISO 6507-1
	Hardness, Brinell		DIN EN ISO 6506-1
	Hardness, Rockwell		DIN EN ISO 6508-1
	Tensile testing, room temperature	Universal testing machine Z 1476 / Zwick	DIN EN ISO 6892-1
	Compression test, room temperature	Universal testing machine Inspect table 100 / Hegewald und Peschke	DIN 50106 DIN 50134
	Linear coefficient of thermal expansion (-150 to 1,550 °C)	High temperature dilatometer DIL 402E / Netzsch Low temperature dilatometer DIL 801 / Bähr	DIN 51045, Teil 1, 2

Besides the services of the accredited test laboratory, Fraunhofer IFAM Dresden offers a multitude of further analysis methods for powders and sintered materials.

4 *Scale with density build-up*
5 *Tensile test*
5 *Tensile sample*