

Fraunhofer Institute for Ceramic Technologies and Systems IKTS

About this organisation

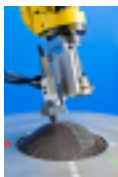
Machine translation

This profile has been machine-translated based on data provided in German.

Fraunhofer IKTS conducts application-orientated research in the field of advanced ceramics. As the largest ceramics research institute in Europe, Fraunhofer IKTS works in eight market-orientated business units to demonstrate and qualify ceramic technologies and components as well as non-destructive testing methods for new industries, product ideas and markets beyond the traditional areas of application.

The economic testing of complex lightweight components is a major challenge due to their material properties and the requirements of mass production. Eddy current methods have become a key technology in quality assurance, as they work without coupling agents, do not require radiation protection and can be efficiently integrated into industrial production processes. With the EddyCus® eddy current platform, Fraunhofer IKTS has developed a technology family in the frequency range of 100 kHz-100 MHz for the growing demand for inline-capable testing strategies. Within this frequency spectrum, electrically weakly conductive materials such as carbon fibre composites can be analysed from the raw fabric to the finished assembly using imaging texture analysis or impedance spectroscopy. Expertise ranges from simulation, sensor technology, manipulation and electronics to complete testing systems.

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Saxony
Germany
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Organisation type

Non-university research institution

Sectors



Employees

500 and more

Turnover

More than €50m

Funding

n/a

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About this organisation

Main areas covered	Eddy current testing, Ceramic coating for CFRP/GRP, Sensor integration, Actuator integration, Test engineering, measurement technology
Infrastructure	Robot measuring cell, Eddy current scanner EddyCus®, Drape test rig, X-ray CT
Certifications	ISO 9001, ISO 14001, ISO 13485
Keywords	EddyCus, Eddy current, CFRP testing, Adaptronics
Memberships	

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
<i>Products</i>			
Services & consulting Training, Consulting, Testing and trials, Validation, Simulation, Technology transfer, Maintenance and repair	✓	✓	

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Field of technology			
<i>Design & layout</i>			
Functional integration Actuator technology, Media conductivity, Sensor technology, Material functionalisation	✓	✓	
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), Materials analysis, Non-destructive analysis	✓	✓	✓
Modelling and simulation Loads & stress, Multiphysics simulation, Optimisation, Materials, Reliability validation	✓	✓	
<i>Plant construction & factory automation</i>			
<i>Recycling technologies</i>			
Manufacturing process			
<i>Additive manufacturing</i>			
Coating (surface engineering) Plasma process	✓	✓	
Fibre composite technology Filament winding	✓	✓	
<i>Forming</i>			
<i>Joining</i>			
<i>Material property alteration</i>			
<i>Primary forming</i>			
<i>Processing and separating</i>			
<i>Textile technology</i>			

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Material			
<i>Biogenic materials</i>			
Cellular materials (foam materials) Open-pore	✓	✓	
Composites Glass-fiber reinforced plastics (GFRP), Ceramic matrix composite (CMC), Carbon-fiber reinforced plastics (CFRP), Metal-ceramic composite, Metal matrix composite	✓	✓	
Fibres Ceramic fibres, Carbon fibres	✓	✓	
Functional materials Piezoelectric materials	✓	✓	
<i>Metals</i>			
<i>Plastics</i>			
Structural ceramics Monolithic ceramics, Non-oxidic ceramics, Oxidic ceramics, Ultra-high-temperature ceramics	✓	✓	
<i>(Technical) textiles</i>			

Contacts

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Contacts

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