

TU Dresden, Institute of Lightweight Engineering and Polymer Technology

Test Methods and Experiment Division

About this organisation

Machine translation

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

At the Institute of Lightweight Engineering and Polymer Technology at TU Dresden, nine specialist groups focus on different areas of lightweight construction. The development of material-adapted or component-specific test methods and the realisation of complex test rigs, which enable loads that are as close to reality as possible, are the main focus of the Test Methods and Experiment group.

The Institute of Lightweight Engineering and Polymer Technology at TU Dresden is characterised by its extensive equipment in the field of non-destructive and destructive testing of materials, semi-finished products, components and systems across all material classes. The work of the Test Methods and Experiments department focuses on the development of material-adapted or component-specific test methods and the realisation of complex test rigs. To validate the design methods and material models, load tests are carried out on components, system components and systems in which realistic, often very complex load conditions are modelled. This requires the development of load and component-specific test facilities and test rigs.

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tu-dresden.de/ing/maschinenwesen/ilk/forschung/fachgruppe-pruefmethoden-und-experiment



Organisation type

University or higher education institution

Sectors



Employees

Up to 9

Turnover

Up to €2m

Funding



☒ Projects in the funding catalogue



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Main areas covered	Material characterisation, Test bench development, Component and system testing, Rotation test, Non-destructive testing
Infrastructure	NDT (technical CT, US), Rotor test rigs, Testing machines: static - highly dyn., Devices for thermomech, analyses, Temperature control and climate chambers
Certifications	
Keywords	Material characterisation, Component testing, Non-destructive testing, Crash and impact, Fibre composite
Memberships	

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Semi-finished parts, Machines and plants, Systems and end products, Materials, Tools and moulds	✓	✓	
Services & consulting Training, Consulting, Testing and trials, Funding, Engineering, Standardisation, Prototyping, Validation, Simulation, Technology transfer	✓	✓	

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Field of technology			
Design & layout Others: null	✓	✓	
<i>Functional integration</i>			
Measuring and testing technology Component and part analysis, System analysis, Environmental simulation, Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓	
Modelling and simulation Loads & stress, Structural mechanics	✓	✓	
Plant construction & factory automation Plant construction	✓	✓	
<i>Recycling technologies</i>			
Manufacturing process			
<i>Additive manufacturing</i>			
<i>Coating (surface engineering)</i>			
<i>Fibre composite technology</i>			
<i>Forming</i>			
<i>Joining</i>			
<i>Material property alteration</i>			
<i>Primary forming</i>			
<i>Processing and separating</i>			
<i>Textile technology</i>			

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Material			
Biogenic materials Bioplastics, Biocomposites, Wood	✓	✓	
Cellular materials (foam materials) Closed-pore, Open-pore, Syntactic foams	✓	✓	
Composites Aramid fibre composites, Basalt fibre-reinforced plastic, Glass-fiber reinforced plastics (GFRP), Ceramic matrix composite (CMC), Carbon-fiber reinforced plastics (CFRP), Short fibre-reinforced concrete, Metal-fibre-polymer composite, Metal-ceramic composite, Metal matrix composite, Nanocomposites, Natural fibre reinforced plastics (NFRP), Laminates, Particulate composites, Textile-reinforced concrete	✓	✓	
Fibres Aramid fibres, Basalt fibres, Glass fibres, Ceramic fibres, Carbon fibres, Metal fibres, Natural fibres	✓	✓	
Functional materials Electrorheological/magnetorheological fluids, Electrostrictive / magnetostrictive materials, Shape memory materials, Piezoelectric materials	✓	✓	
Metals Aluminium, Intermetallic alloys, Magnesium, Steel, Titanium	✓	✓	
Plastics Thermoset plastics, Elastomers, Thermoplastics	✓	✓	
Structural ceramics Monolithic ceramics, Non-oxidic ceramics, Oxidic ceramics, Ultra-high-temperature ceramics	✓	✓	

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Contacts

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