University of Stuttgart

Institute for Materials Testing, Materials Science and Strength of Materials IMWF

About this organisation

Machine translation

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

The Institute for Materials Testing, Materials Science and Strength of Materials (IMWF), together with the Materials Testing Institute at the University of Stuttgart (MPA), covers the material - material - component - system complex

The focus is on the areas of materials testing and simulation as well as component calculation and analysis. The calculation methods used are cross-scale and range from simulations at atomic level to macroscopic simulation methods such as finite elements, coupled with fluid mechanics approaches. The focus is on metallic materials, but polymers, ceramics and composite materials are also part of the IMWF portfolio. The current application focus is on additive manufacturing, innovative joining processes, safety analyses of technical systems and the creation of advanced material models.

Pfaffenwaldring 32
70569 Stuttgart
Baden-Württemberg
Germany
www.imwf.uni-stuttgart.de

Organisation type
University or higher education institution

Sectors

Employees
10 up to 49

Turnover
n/a

Funding
n/a

Main areas covered	Microstructure mechanics, Multi-scale modelling, Material development, Skull mechanics, Materials testing
Infrastructure	
Certifications	
Keywords	
Memberships	Lightweight construction BW

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
Products Materials	✓		
Services & consulting			
Field of technology			
Design & layout			
Functional integration			
Measuring and testing technology			
Modelling and simulation			
Plant construction & automation			
Recycling technologies			
Manufacturing process			
Additive manufacturing			
Coating (surface engineering)			
Fibre composite technology			
Forming			
Joining			
Material property alteration			
Primary forming			
Processing and separating			
Textile technology			

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Material			
Biogenic materials			
Cellular materials (foam materials) Closed-pore, Open-pore	✓		
Composites Glass-fiber reinforced plastics (GFRP), Ceramic matrix composite (CMC), Carbon-fiber reinforced plastics (CFRP), Metal-ceramic composite, Metal matrix composite, Nanocomposites, Laminates, Particulate composites	✓		
Fibres Glass fibres, Carbon fibres	✓		
Functional materials Shape memory materials	✓		
Metals Aluminium, Intermetallic alloys, Magnesium, Steel, Titanium	✓		
Plastics Elastomers, Thermoplastics	✓		
Structural ceramics Non-oxidic ceramics, Oxidic ceramics	✓		
(Technical) textiles			

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Contacts

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