Furtwangen University (HFU)

Institute for Materials and Application Technology Tuttlingen (IWAT)

About this organisation

Machine translation

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

The institute focuses on general materials science topics such as material development and optimisation, material analysis and testing, failure analysis and the material-specific optimisation of manufacturing processes such as heat treatment, deburring, coating, forming technology, etc., through to the planning of material-specific manufacturing process chains.

IWT's expertise in lightweight construction includes the development and application of lightweight metals, the processing of lightweight metals as well as material optimisation, material testing and selective laser melting (SLM).

Kronenstraße 16
78532 Tuttlingen
Baden-Württemberg
Germany
www.hfu-campus-tuttlingen.de

Organisation type
University or higher education institution

Sectors
No specific sector

Employees
10 up to 49

Turnover
n/a

Funding
n/a

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About this organisation

Main areas covered	Materials engineering, Materials science, Material development, Material testing, Composite materials, Damage analysis, Additive manufacturing, Production process optimisation, Material simulation, Light metals, Forming technology
Infrastructure	Mechanical tests, Materialography, Non-destructive material testing, Thermal material analysis, Microscopy and surface analysis
Certifications	
Keywords	Materials engineering, Material development, Damage assessment, Material testing, X-ray tomography
Memberships	

Overview of lightweighting expertise

Machine translation

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	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Materials, Tools and moulds	✓	✓	✓
Services & consulting			

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Field of technology			
Design & layout			
Functional integration Thermal activation, Material functionalisation	✓	✓	✓
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓	
Modelling and simulation Loads & stress, Life-cycle analysis, Optimisation, Processes, Materials, Reliability validation	✓	✓	
Plant construction & automation			
Recycling technologies			

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	Research	Development	Manufacturing & Supply
Manufacturing process			
Additive manufacturing 3D printing, Selective laser melting (SLM, LPBF, ...), Selective laser sintering (SLS)	✓	✓	✓
Coating (surface engineering) Galvanising, Sputtering	✓	✓	
Fibre composite technology Manual lamination	✓		
Forming			
Joining			
Material property alteration Mechanical treatment, Thermochemical treatment, Thermomechanical treatment, Heat treatment	✓	✓	
Primary forming			
Processing and separating			
Textile technology			

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	Research	Development	Manufacturing & Supply
Material			
Biogenic materials Bioplastics, Biocomposites, Others (Biomedical 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 matrix composite, Laminates, Particulate composites	✓	✓	
Fibres			
Functional materials Shape memory materials, Piezoelectric materials	✓	✓	
Metals Aluminium, Intermetallic alloys, Magnesium, Steel, Titanium, Others (Nickel)	✓	✓	
Plastics Thermoset plastics, Elastomers, Thermoplastics	✓	✓	
Structural ceramics Non-oxidic ceramics, Oxidic ceramics, Ultra-high-temperature ceramics	✓	✓	
(Technical) textiles			

Contacts

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Mr Prof. Dr. Dipl.-Ing. Hadi Mozaffari-Jovein

Institute Director

mj@hs-furtwangen.de