

Fraunhofer Institute for Manufacturing Technology and Applied Materials Research

About this organisation

Machine translation

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

The Fraunhofer IFAM is one of the most important independent research institutes in the fields of adhesive bonding technology, surfaces, moulding and functional materials. At the 7 locations in Bremen, Dresden, Stade, Wolfsburg and Braunschweig, Helgoland and Cuxhaven, scientific excellence with application orientation and measurable customer benefits as well as the highest quality are among the central guidelines of the institute.

Around 700 employees from 20 departments currently pool their broad technological and scientific expertise in seven core competences: Metallic materials, polymer materials, surface technology, bonding, moulding and component production, automation and robotics as well as energy storage and converters. In detail, the spectrum of our contract research ranges from materials, shaping and joining technology to the functionalisation of surfaces, the development of complex components and systems and current issues relating to digital transformation. Fraunhofer IFAM covers the entire value chain from material development to product design and integration into industrial production - including pilot production, quality assurance procedures and targeted measures for staff training in new technologies. The entire technology spectrum is applied to lightweight construction solutions.

Wienerstr. 12
28359 Bremen
Bremen
Germany

www.ifam.fraunhofer.de



Organisation type

Non-university research institution

Sectors



Employees

500 and more

Turnover

More than €50m

Funding

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Main areas covered	Foundry technology and lightweight construction, Lightweight construction and electromobility, Polymer materials and construction methods, Adhesive bonding production, Powder technology
Infrastructure	State-of-the-art technology and laboratories
Certifications	NADCAP for DIN EN ISO 2409, 9227, DIN EN ISO 9001, DIN EN ISO/IEC 17024, DIN EN ISO/IEC 17025, DIN 2304 and DIN 6701
Keywords	Composite materials, light metals, Multi-material composites, CFRP, GFRP, Cellular materials, Bio-inspired materials, Analysis, inspection and test procedures
Memberships	Numerous memberships

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
<i>Products</i>			
Services & consulting			
Training, Consulting, Testing and trials, Prototyping, Validation, Simulation, Technology transfer, Others (Bonding technology, DVS-EWF bonding practitioner, DVS-EWF bonding specialist, DVS-EWF bonding engineer, fibre composite training, fibre composite plastic, fibre composite plastic specialist, fibre composite repair)	✓	✓	✓

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Field of technology			
Design & layout Lightweight manufacturing, Lightweight design, Hybrid structures, Lightweight construction concepts, Lightweight material construction	✓	✓	✓
Functional integration Actuator technology, Sensor technology, Material functionalisation	✓	✓	✓
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), System analysis, Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓	
Modelling and simulation Crash behaviour, Loads & stress, Life-cycle analysis, Optimisation, Processes, Structural mechanics, Materials, Reliability validation	✓	✓	
Plant construction & automation Automation technology, Others (Lightweight manufacturing, lightweight mould construction, hybrid structures, lightweight concept construction)	✓	✓	✓

Recycling technologies

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Manufacturing process			
Additive manufacturing 3D printing, Electron beam melting, Laminated object manufacturing (LOM), Selective laser melting (SLM, LPBF, ...), Selective laser sintering (SLS), Stereolithography, Others (Binder Jetting, Functional Printig)	✓	✓	✓
Coating (surface engineering) Painting, Plasma process, Others (Plasma technology and dry-chemical processes, wet-chemical pre-treatment, corrosion protection, printing processes, adhesion promotion, release coatings, insulation coatings, sensorisation, paint application technology and process engineering, tribology)	✓	✓	✓
Fibre composite technology Manual lamination, Resin infusion process, Resin transfer moulding	✓	✓	
<i>Forming</i>			
Joining Hybrid joining, Adhesive bonding, Riveting	✓	✓	✓
<i>Material property alteration</i>			
Primary forming Extrusion, Casting, Sintering, Injection moulding	✓	✓	✓
Processing and separating Cutting, Others (Laser cutting of electrical sheets)	✓	✓	
<i>Textile technology</i>			

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Material			
Biogenic materials Biocomposites, Others (Bonding of biogenic materials)	✓	✓	
Cellular materials (foam materials) Closed-pore, Open-pore, Syntactic foams	✓	✓	
Composites Glass-fiber reinforced plastics (GFRP), Carbon-fiber reinforced plastics (CFRP), Metal matrix composite, Nanocomposites, Laminates	✓	✓	
Fibres Basalt fibres, Glass fibres, Ceramic fibres, Carbon fibres, Metal fibres	✓	✓	
Functional materials Electrorheological/magnetorheological fluids, Electrostrictive / magnetostrictive materials, Piezoelectric materials	✓	✓	
Metals Aluminium, Intermetallic alloys, Magnesium, Steel, Titanium	✓	✓	
Plastics Thermoset plastics, Thermoplastics	✓	✓	
<i>Structural ceramics</i>			
<i>(Technical) textiles</i>			

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Contacts

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