Fraunhofer Institute for Structural Durability and System Reliability LBF

About this organisation

Fraunhofer LBF is an institute of the Fraunhofer Gesellschaft, with its expertise in the areas of structural durability, system reliability, vibration technology and polymer technology . Comprehensive skills ranging from data acquisition in real operational field use to data analysis and data Interpretation, in Addition to deriving specific measures to design and improve material, component and system properties form the basis for this.

The range of services in lightweighting includes layout and design, prototyping and validation of composites and plastic components along the entire value chain. From materials and construction to production and use. Fields of action are the examinination, validation and optimization of material or component properties and llifespan considering the real, application specific operational loads.

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Germany
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Fraunhofer LBF

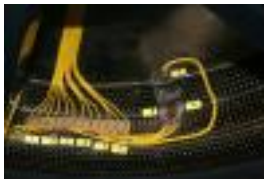
Organisation type
Non-university research institution

Sectors
Others: Chemische Industrie / Kunststofftechnik

Employees
250 up to 499

Turnover
€10m - €50m

Funding

Main areas covered	Fibre structure analyses, Characterisation of plastics and composites, Evaluation and optimisation of lightweight structures from the point of view of stability and fatigue strength, Function integration
Infrastructure	Fibre composite laboratory, Test facility Operational strength
Certifications	DIN ISO EN 9001:2008, DIN ISO-IEC 17025:2005
Keywords	Function-integrated lightweight construction, Integrative simulation, Material models
Memberships	Fraunhofer-Allianz Leichtbau, Initiative Leichtbau des BMWi, Fraunhofer-Verbund MATERIALS

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Overview of lightweighting expertise

	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Semi-finished parts, Materials	✓	✓	
Services & consulting Training, Consulting, Testing and trials, Engineering, Prototyping, Validation, Simulation, Approval	✓	✓	✓
Field of technology			
Design & layout Lightweight design, Hybrid structures, Lightweight construction concepts	✓	✓	
Functional integration Actuator technology, Sensor technology, Material functionalisation	✓	✓	✓
Measuring and testing technology Component and part analysis, System analysis, Environmental simulation, Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓	✓
Modelling and simulation Loads & stress, Life-cycle analysis, Optimisation, Structural mechanics, Materials, Reliability validation	✓	✓	✓
Plant construction & automation			
Recycling technologies			

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Overview of lightweighting expertise

	Research	Development	Manufacturing & Supply
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

	Research	Development	Manufacturing & Supply
Material			
Biogenic materials			
Cellular materials (foam materials)			
Composites Glass-fiber reinforced plastics (GFRP), Carbon-fiber reinforced plastics (CFRP), Nanocomposites, Natural fibre reinforced plastics (NFRP)	✓	✓	✓
Fibres			
Functional materials Electrorheological/magnetorheological fluids, Electrostrictive / magnetostrictive materials, Shape memory materials, Piezoelectric materials	✓	✓	
Metals Steel	✓	✓	
Plastics Thermoset plastics, Elastomers, Thermoplastics	✓	✓	
Structural ceramics			
(Technical) textiles			

Contacts

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Contacts

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