German Institutes for Textile and Fibre Research Denkendorf (DITF)

About this organisation

Machine translation

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

The DITF is Europe's largest textile research centre. They carry out basic and application-orientated research across the entire textile production chain - from molecule to product. Production-related technical centres with industrial pilot plants and specialised laboratories enable the solution of complex and demanding tasks for industry.

A wide variety of textile machine technologies are available for the production or further processing of force-flow-compatible woven and braided textile structures or preforms made from new or recycled fibres. Large-scale (braided) pultrusion of straight and curved profiles as well as strength-optimised bionic materials and structures, e.g. branching. Research objectives are the development of integral, multifunctional composite materials with high strength/ stiffness, high vibration damping and damage tolerance. For structural health monitoring, electrical cables and sensor fibres, including their contacting, are incorporated into textiles and fibre composite structures. Various comingling systems are available in the area of thermoplastic matrix systems. The micro-CT system is used to optimise the fibre flow in textiles and components, whereby the fibre flows are calculated and fed back into the component simulation and production.

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DEUTSCHE INSTITUTE FÜR TEXTIL+FASERFORSCHUNG

Organisation type
Non-university research institution

Sectors

Employees
250 up to 499

Turnover
€10m - €50m

Funding

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About this organisation

Main areas covered	Pultrusion, biopolymer materials, Preform production virgin material/recycled material, Component-integrated sensors, Ultralight carbon fibre structures, Braided branches
Infrastructure	
Certifications	
Keywords	Pultrusion, Structural Health Monitoring, Thermoplastic matrix systems, Micro CT, Biopolymer materials
Memberships	

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
Products Materials	✓	✓	
Services & consulting Training, Consulting, Testing and trials, Prototyping, Validation, Simulation	✓		

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Field of technology			
Design & layout Lightweight manufacturing, Hybrid structures, Lightweight material construction	✓	✓	
Functional integration Actuator technology, Media conductivity, Sensor technology, Thermal activation, Material functionalisation	✓	✓	
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), Environmental simulation, Destructive analysis, Non-destructive analysis	✓	✓	
Modelling and simulation Loads & stress, Structural mechanics, Materials	✓		
Plant construction & automation Automation technology, Handling technology, Robotics	✓	✓	
Recycling technologies Recycling, Upcycling	✓	✓	

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	Research	Development	Manufacturing & Supply
Manufacturing process			
Additive manufacturing 3D printing	✓		
Coating (surface engineering) Plasma process	✓	✓	
Fibre composite technology Filament winding, Manual lamination, Resin infusion process	✓	✓	
Forming			
Joining Sewing	✓	✓	
Material property alteration			
Primary forming Extrusion, Pultrusion	✓	✓	✓
Processing and separating			
Textile technology Fibre manufacturing, Braiding, Yarn & roving production, Preforming, Knitting, Textile surface treatment and finishing, Nonwoven & mats production, Weaving, Knitting, laid web production	✓	✓	✓

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Material			
Biogenic materials Bioplastics, Biocomposites	✓	✓	
Cellular materials (foam materials) Closed-pore, Open-pore	✓		
Composites Basalt fibre-reinforced plastic, Glass-fiber reinforced plastics (GFRP), Ceramic matrix composite (CMC), Carbon-fiber reinforced plastics (CFRP), Metal-fibre-polymer composite, Natural fibre reinforced plastics (NFRP), Laminates	✓		
Fibres Basalt fibres, Carbon fibres, Natural fibres	✓	✓	
Functional materials Shape memory materials, Piezoelectric materials	✓		
Metals			
Plastics Thermoset plastics, Thermoplastics	✓	✓	
Structural ceramics Monolithic ceramics, Non-oxidic ceramics, Oxidic ceramics, Ultra-high-temperature ceramics	✓	✓	
(Technical) textiles Yarns, rovings, Meshes, Laid webs, Crocheted fabrics, Woven fabrics, Nonwovens, mats	✓	✓	✓

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Contacts

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