RWTH Aachen University
Institute for Textile Technology

About this organisation

Machine translation

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

The Institute of Textile Technology (ITA) is one of the largest institutes in the Department of Mechanical Engineering at RWTH Aachen University. Associated with the Institute is the Chair of Textile Technology in Mechanical Engineering. The institute is headed by Univ.-Prof. Dr.-Ing. Dipl.-Wirt. Ing. Thomas Gries.

In the field of fibre composites, the ITA develops and investigates production technologies for textile semi-finished products and their further processing into preforms. This includes the production of multiaxial fabrics, braids and the automation of the assembly of preforms. In the field of materials research, technologies for the coating of semi-finished reinforcement products and the production of high-temperature materials are being developed. The evaluation is carried out using established and self-developed testing and measuring methods in our own test laboratory. The fields of application for these preforms are in the areas of fibre-reinforced plastics and textile-reinforced concrete.

Otto-Blumenthal-Strasse 1
52074 Aachen
North Rhine-Westphalia
Germany
www.ita.rwth-aachen.de

Organisation type
University or higher education institution

Sectors

Employees
50 up to 249

Turnover
€10m - €50m

Funding

Main areas covered	Textile lightweight construction, Fibres, Preforming, Tapes
Infrastructure	Textile technology laboratory, Tissue and clutch production, CNC cutting, Automated production cell, Carbon fibre production
Certifications	
Keywords	Textile, Tape, Preforming, Fibre
Memberships	CCeV, AVK, CFRP Valley

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Semi-finished parts, Machines and plants, Materials, Tools and moulds	✓	✓	✓
Services & consulting			
Field of technology			
Design & layout Lightweight manufacturing, Lightweight design, Hybrid structures, Lightweight construction concepts, Lightweight material construction	✓	✓	
Functional integration Sensor technology, Material functionalisation	✓		
Measuring and testing technology			
Modelling and simulation Loads & stress, Optimisation, Processes, Structural mechanics, Materials	✓	✓	
Plant construction & automation Automation technology, Handling technology, Robotics, Others (Assistance systems Human-machine interaction Human-robot collaboration)	✓	✓	
Recycling technologies Material separation, Recycling	✓	✓	

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Manufacturing process			
Additive manufacturing			
Coating (surface engineering)			
Fibre composite technology Casting (concrete), Manual lamination, Resin infusion process, Pre-preg processing, Vacuum infusion	✓		
Forming Others (Stamp moulding Foam forming Material feeding)	✓	✓	
Joining Adhesive bonding, Sewing	✓	✓	
Material property alteration			
Primary forming			
Processing and separating Drilling, Turning, Milling			✓
Textile technology Fibre manufacturing, Braiding, Yarn & roving production, Preforming, Knitting, Textile surface treatment and finishing, Nonwoven & mats production, Weaving, Knitting, laid web production	✓	✓	✓

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Material			
Biogenic materials			
Cellular materials (foam materials)			
Composites Aramid fibre composites, Basalt fibre-reinforced plastic, Glass-fiber reinforced plastics (GFRP), Ceramic matrix composite (CMC), Carbon-fiber reinforced plastics (CFRP), Short fibre-reinforced concrete, Metal-ceramic composite, Natural fibre reinforced plastics (NFRP), Textile-reinforced concrete	✓	✓	
Fibres Aramid fibres, Basalt fibres, Glass fibres, Ceramic fibres, Carbon fibres, Natural fibres	✓	✓	
Functional materials			
Metals			
Plastics Thermoset plastics, Elastomers, Thermoplastics	✓		
Structural ceramics			
(Technical) textiles Yarns, rovings, Meshes, Laid webs, Crocheted fabrics, Woven fabrics, Knitted fabrics, Nonwovens, mats	✓	✓	

Contacts

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