

# TUD Dresden University of Technology

## Institute of Textile Machinery and High Performance Material Technology (ITM)

### About this organisation

The Institute for Textile Machinery and Textile High Performance Materials Technology at TU Dresden is a world-leading university research institution in the field of textile technology along the entire process chain. For the successful implementation of its diverse research projects, the ITM has a modern infrastructure that enables the rapid development of completely new technologies and innovative products.

The research activities at the ITM are focused on the areas machine, technology and product development and include development and processing of high-tech fibres made of carbon, glass, aramid, steel and ceramics. The research activities are complemented by modelling and simulation of structures and processes and include development of novel yarn constructions, 2D and 3D reinforcement semi-finished products, finishing and functionalisation.

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[tu-dresden.de/ing/maschinenwesen/itm](https://tu-dresden.de/ing/maschinenwesen/itm)



#### Organisation type

University or higher education institution

#### Sectors



Others: Textilmaschinenbau, Textiltil- und Konfektionsindustrie

#### Employees

50 up to 249

#### Turnover

n/a

#### Funding



[Projects in the funding catalogue](#)



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## About this organisation

<b>Main areas covered</b>	Textile machine development, 2D/3D reinforcement textiles, Structure and process simulation, Preform production, Textile-integrated sensors/actuators
<b>Infrastructure</b>	Technical Centre Textile Processes , Technical Centre Preforming, Technical Centre Fibre-Plastic Composites, Technical Centre Testing, CAE laboratories
<b>Certifications</b>	
<b>Keywords</b>	
<b>Memberships</b>	Composites United e. V.

## Overview of lightweighting expertise

	Research	Development	Manufacturing & Supply
<b>Offer</b>			
<b>Products</b> Parts and components, Semi-finished parts, Machines and plants, Materials	✓	✓	
<b>Services &amp; consulting</b> Training, Consulting, Testing and trials, Validation, Simulation	✓	✓	

## Overview of lightweighting expertise

	Research	Development	Manufacturing & Supply
<b>Field of technology</b>			
<b>Design &amp; layout</b> Hybrid structures, Lightweight material construction	✓	✓	
<b>Functional integration</b> Actuator technology, Sensor technology, Material functionalisation	✓	✓	
<b>Measuring and testing technology</b> Component and part analysis, Visual analysis (e.g. microscopy, metallography), Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓	
<b>Modelling and simulation</b> Loads & stress, Processes, Structural mechanics, Materials	✓	✓	
<i>Plant construction &amp; factory automation</i>			
<b>Recycling technologies</b> Recycling, Others: null	✓	✓	

## Overview of lightweighting expertise

	Research	Development	Manufacturing & Supply
<b>Manufacturing process</b>			
<b>Additive manufacturing</b> 3D printing, Others: null	✓	✓	
<b>Coating (surface engineering)</b> Plasma process, Others: null	✓	✓	
<b>Fibre composite technology</b> Casting (concrete), Manual lamination, Resin infusion process, Resin transfer moulding, Vacuum infusion, Others: null	✓		
<b>Forming</b> Others: null	✓	✓	
<b>Joining</b> Adhesive bonding, Sewing, Welding	✓	✓	
<b>Material property alteration</b> Others: null	✓	✓	
<b>Primary forming</b> Others: null	✓	✓	
<b>Processing and separating</b> Others: null	✓	✓	
<b>Textile technology</b> Fibre manufacturing, Braiding, Yarn & roving production, Preforming, Knitting, Textile surface treatment and finishing, Weaving, Knitting, laid web production, Others: null	✓	✓	

## Overview of lightweighting expertise

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

## Contacts

## Contacts

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