TU Dresden, Institute of Lightweight Engineering and Polymer Technology

Thermoplastics Process Division

About this organisation

Machine translation

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

At the Institute of Lightweight Engineering and Polymer Technology at TU Dresden, nine specialist groups focus on different areas of lightweight construction. With its research activities, the Thermoplastics Processes specialist group pursues an integrated approach along the entire value chain.

The production of functionally integrated lightweight structures in multi-material design requires the provision of efficient, resource-saving process chains. With its research activities, the Thermoplastics Processes Group at the Institute of Lightweight Engineering and Polymer Technology considers the entire value chain. The process chain begins with the development, production and characterisation of innovative thermoplastic semi-finished products with adapted property profiles: Compounds, films, tapes, organic sheets, etc. This is followed by the development of new semi-finished preforming technologies, from near-net-shape depositing of thermoplastic tapes to braiding of complex hollow structures. At the end of the process chain is the development of efficient manufacturing processes in injection moulding, compression moulding, pultrusion and extrusion as well as additive manufacturing.

Holbeinstr. 3
01307 Dresden
Saxony
Germany
tu-dresden.de/ing/maschinenwesen/ilk/forschung/fachgruppe-thermoplastverfahren

Institut für Leichtbau und Kunststofftechnik

Organisation type
University or higher education institution

Sectors

Employees
10 up to 49

Turnover
Up to €2m

Funding

Technology Transfer Program Leichtbau

Projects in the funding catalogue





TU Dresden, Institute of Lightweight Engineering and Polymer Technology

Thermoplastics Process Division

About this organisation

Main areas covered	Plant and process development, Semi-finished product development, Process analysis and simulation, Series production processes, Functionalised semi-finished products
Infrastructure	Multifunctional quick-lift press, Multi-component injection moulding machines, Extrusion lines, Pultrusion line, Tape layer
Certifications	
Keywords	Thermoplastic, Multi-material design, Hybrid composites, Thermoplastic semi-finished products, Fibre composites
Memberships	

Overview of lightweighting expertise

Machine translation

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

	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Semi-finished parts, Machines and plants, Systems and end products, Materials, Tools and moulds	✓	✓	
Services & consulting Consulting, Testing and trials, Engineering, Prototyping, Validation, Simulation, Technology transfer	✓	✓	

TU Dresden, Institute of Lightweight Engineering and Polymer Technology

Thermoplastics Process Division

Overview of lightweighting expertise

Machine translation

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

	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	✓	✓	
Measuring and testing technology Component and part analysis, Non-destructive analysis	✓	✓	
Modelling and simulation Processes, Materials	✓	✓	
Plant construction & factory automation Plant construction, Automation technology, Handling technology, Robotics	✓	✓	
Recycling technologies Downcycling, Material separation, Recycling	✓	✓	

TU Dresden, Institute of Lightweight Engineering and Polymer Technology

Thermoplastics Process Division

Overview of lightweighting expertise

Machine translation

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

	Research	Development	Manufacturing & Supply
Manufacturing process			
Additive manufacturing 3D printing, Deposition welding, Selective laser melting (SLM, LPBF, ...)	✓	✓	
Coating (surface engineering)			
Fibre composite technology			
Forming Impact extrusion, Compression moulding, Thermal converting	✓	✓	
Joining Hybrid joining, Adhesive bonding, Welding	✓	✓	
Material property alteration Thermomechanical treatment	✓	✓	
Primary forming Extrusion, Pultrusion, Injection moulding	✓	✓	
Processing and separating			
Textile technology Braiding, Preforming	✓	✓	

TU Dresden, Institute of Lightweight Engineering and Polymer Technology

Thermoplastics Process Division

Overview of lightweighting expertise

Machine translation

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

	Research	Development	Manufacturing & Supply
Material			
Biogenic materials Bioplastics, Biocomposites	✓	✓	
Cellular materials (foam materials)			
Composites Glass-fiber reinforced plastics (GFRP), Carbon-fiber reinforced plastics (CFRP), Natural fibre reinforced plastics (NFRP), Laminates	✓	✓	
Fibres Aramid fibres, Basalt fibres, Glass fibres, Carbon fibres, Natural fibres	✓	✓	
Functional materials Piezoelectric materials	✓	✓	
Metals			
Plastics Thermoplastics	✓	✓	
Structural ceramics			
(Technical) textiles Yarns, rovings, Meshes, Woven fabrics	✓	✓	

Contacts

Machine translation

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

TU Dresden, Institute of Lightweight Engineering and Polymer Technology

Thermoplastics Process Division

Contacts

Mr Dr.-Ing Michael Krahl

Head of the Thermoplastics Process Division

michael.krahl@tu-dresden.de