Fraunhofer Pilot Plant Centre for Polymer Synthesis and Processing PAZ

Polymer Processing Department

About this organisation

Machine translation

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

At the Fraunhofer Pilot Plant Centre for Polymer Synthesis and Processing PAZ at ValuePark® Schkopau, polymer synthesis and processing methods are transferred to an industrial scale. Both the technical possibilities on a pilot scale and the bundling of expertise in both specialist areas are unique selling points of the pilot plant centre on the R&D market.

The research topics focus on micro- and mesostructure-based technology development for fibre-reinforced, thermoplastic-based lightweight structures. Particular attention is paid to increasing the effectiveness and quality in the production of UD tapes, unidirectional fibre-reinforced semi-finished products, which are laminated together according to the required fibre orientation and thus achieve high surface stiffness and strength in line with requirements. Efficient manufacturing concepts with appropriate machine technology and hybrid technologies suitable for series production are developed and applied for the subsequent production of components. The entire development process is supported virtually by process and structural simulations. The materials analysed are primarily unreinforced and filled thermoplastics or blends, short, long and continuous reinforced thermoplastics (TPC) as well as thermoplastic hybrid composites and metal-TPC hybrid composites.

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06258 Schkopau
Saxony-Anhalt
Germany
www.polymer-pilotanlagen.de

Fraunhofer PAZ

Organisation type
Non-university research institution

Sectors

Employees
10 up to 49

Turnover
€2m - €10m

Funding
n/a

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Main areas covered	UD tapes, Hybrid injection moulding, Sandwich structures, Metal-plastic hybrid structures, IMC direct processing
Infrastructure	UD tape system, Double belt press, Automated hybrid injection moulding, Injection moulding systems, Single and twin-screw extruders
Certifications	ISO 9001
Keywords	Thermoplastic fibre composites, UD tape, Hybrid injection moulding, IMC direct processing, Sandwich structures
Memberships	

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Semi-finished parts, Materials	✓	✓	✓
Services & consulting Training, Consulting, Testing and trials, Prototyping, Simulation, Technology transfer	✓	✓	✓
Field of technology			
Design & layout Lightweight manufacturing, Lightweight design, Hybrid structures, Lightweight construction concepts, Lightweight material construction	✓	✓	✓
Functional integration Sensor technology, Thermal activation, Material functionalisation	✓	✓	
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), System analysis, Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓	
Modelling and simulation Loads & stress, Optimisation, Processes, Structural mechanics, Materials, Reliability validation	✓	✓	
Plant construction & factory automation Plant construction, Automation technology, Handling technology, Robotics	✓	✓	
Recycling technologies Recycling	✓	✓	

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	Research	Development	Manufacturing & Supply
Manufacturing process			
Additive manufacturing 3D printing, Laminated object manufacturing (LOM), Fused deposition modeling	✓	✓	
Coating (surface engineering) Painting, Plasma process	✓	✓	
Fibre composite technology Manual lamination, Pre-preg processing, Vacuum infusion	✓	✓	✓
Forming Impact extrusion, Compression moulding, Thermal converting	✓	✓	✓
Joining Hybrid joining, Adhesive bonding	✓	✓	✓
Material property alteration Mechanical treatment, Thermochemical treatment, Thermomechanical treatment, Heat treatment	✓	✓	✓
Primary forming Extrusion, Injection moulding	✓	✓	✓
Processing and separating Milling, Cutting	✓	✓	
Textile technology Preforming	✓	✓	✓

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	Research	Development	Manufacturing & Supply
Material			
Biogenic materials Bioplastics, Biocomposites	✓	✓	✓
Cellular materials (foam materials) Closed-pore, Open-pore	✓	✓	
Composites Aramid fibre composites, Basalt fibre-reinforced plastic, Glass-fiber reinforced plastics (GFRP), Carbon-fiber reinforced plastics (CFRP), Nanocomposites, Natural fibre reinforced plastics (NFRP), Laminates, Particulate composites	✓	✓	✓
Fibres Aramid fibres, Basalt fibres, Glass fibres, Carbon fibres, Natural fibres	✓	✓	
Functional materials Shape memory materials, Piezoelectric materials	✓		
Metals Aluminium, Steel	✓	✓	
Plastics Elastomers, Thermoplastics	✓	✓	✓
Structural ceramics			
(Technical) textiles Yarns, rovings, Laid webs, Woven fabrics, Nonwovens, mats	✓	✓	

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Contacts

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