

About this organisation

Machine translation

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

Prof. Dr Oliver Türk heads the Biogenic Workshop® and emphasises the sustainable approach of the research: "At the Biogenic Workshop, we have a holistic understanding of materials. In other words, we ask ourselves where the raw materials come from, how are they produced? What are their structures and properties? These and many other aspects play a role when assessing the ecology and economy of a renewable raw material.

In view of ever scarcer resources, constantly rising energy and raw material prices and the need to increase recyclability, the automotive industry is increasingly looking for alternatives to petroleum-based plastics or carbon fibres. The vehicles of the future must be significantly lighter than their predecessors. In addition, the plastics used must have low emissions and be easy to recycle. The aim is to show that the use of natural fibre-reinforced biogenic epoxy resins leads to a reduction in vehicle weight and can therefore contribute to fuel savings. In addition, materials made from renewable raw materials improve the CO2 balance of the car while maintaining almost the same mechanical properties, excellent sound insulation and low emissions.

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Rhineland-Palatinate
Germany
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Main areas covered Bio-composites, bio-resins

Infrastructure Analytical laboratory, test laboratory, workshop

Certifications

Keywords

Memberships



Organisation type

University or higher education institution

Sectors

No specific sector

Employees

50 up to 249

Turnover

n/a

Funding

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Semi-finished parts, Machines and plants, Software & databases, Systems and end products, Materials, Tools and moulds	✓	✓	
Services & consulting Training, Consulting, Testing and trials, Engineering, Validation, Technology transfer	✓	✓	
Field of technology			
Design & layout Lightweight manufacturing, Lightweight design, Hybrid structures, Lightweight construction concepts, Lightweight material construction	✓	✓	
<i>Functional integration</i>			
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓	
Modelling and simulation Optimisation, Processes, Materials	✓	✓	
<i>Plant construction & automation</i>			
Recycling technologies Recycling, Upcycling	✓	✓	

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Manufacturing process			
<i>Additive manufacturing</i>			
<i>Coating (surface engineering)</i>			
Fibre composite technology Manual lamination, Resin infusion process, Pre-preg processing, Vacuum infusion	✓	✓	
Forming Impact extrusion, Compression moulding, Thermal converting		✓	
<i>Joining</i>			
Material property alteration Thermomechanical treatment, Heat treatment	✓	✓	
Primary forming Extrusion, Injection moulding	✓	✓	
Processing and separating Drilling, Milling, Sawing, Cutting	✓	✓	
Textile technology Preforming, Nonwoven & mats production, Weaving, Knitting, laid web production	✓	✓	

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Material			
Biogenic materials Bioplastics, Biocomposites, Wood	✓	✓	
<i>Cellular materials (foam materials)</i>			
Composites Glass-fiber reinforced plastics (GFRP), Carbon-fiber reinforced plastics (CFRP), Natural fibre reinforced plastics (NFRP)	✓	✓	
Fibres Carbon fibres, Natural fibres	✓	✓	
<i>Functional materials</i>			
<i>Metals</i>			
Plastics Thermoset plastics, Thermoplastics	✓	✓	
<i>Structural ceramics</i>			
(Technical) textiles Laid webs, Woven fabrics, Nonwovens, mats	✓	✓	

Contacts

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Bingen University of Applied Sciences

Biogenic workshop

Contacts

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