

## 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.

Berlinstr. 109  
55411 Bingen am Rhein  
Rhineland-Palatinate  
Germany  
[www.th-bingen.de](http://www.th-bingen.de)

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

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

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

## Contacts

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# Bingen University of Applied Sciences

## *Biogenic workshop*

### Contacts

Mr M. Eng. Lukasz Derwich  
*Research assistant*

[l.derwich@th-bingen.de](mailto:l.derwich@th-bingen.de)

Mr Prof. Dr. Oliver Türk  
*Head of Institute Biogenic Workshop*

[tuerk@th-bingen.de](mailto:tuerk@th-bingen.de)