

# University of Paderborn - Laboratory for Materials and Joining Technology (LWF)

## Laboratory for Materials and Joining Technology (LWF)

### About this organisation

#### Machine translation

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

The Laboratory for Materials and Joining Technology (LWF) is a nationally and internationally recognised research institute with a focus on joining technology, in particular mechanical and thermal joining, bonding and hybrid joining. It also specialises in determining characteristic values and simulation.

As a partner to SMEs, large companies and funding organisations, we provide process-, material-specific and constructive research results in materials and joining technology for the economic development and production of energy-efficient lightweight structures in particular.

Pohlweg 47 - 49  
33098 Paderborn  
North Rhine-Westphalia  
Germany  
[www.lwf.upb.de](http://www.lwf.upb.de)



#### Organisation type

University or higher education institution

#### Sectors



#### Employees

50 up to 249

#### Turnover

€2m - €10m

#### Funding



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## About this organisation

<b>Main areas covered</b>	Joining lightweight structures, (Mechanical joining technology, Thermal joining, bonding technology, Determination of characteristic values, simulation)
<b>Infrastructure</b>	Joining equipment, bonding laboratory, Testing equipment (destructive, non-destructive), Optical testing technology, Metallography
<b>Certifications</b>	Centre for mechanical joining, Hybrid joining
<b>Keywords</b>	Mechanical joining, Thermal joining, Adhesive bonding, Simulation, Determination of characteristic values
<b>Memberships</b>	EFB e.V., FOSTA e.V., GFaI e.V., DVS e.V., WAW e.V.

## Overview of lightweighting expertise

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

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	Research	Development	Manufacturing & Supply
<b>Field of technology</b>			
<b>Design &amp; layout</b> Lightweight manufacturing, Lightweight design, Hybrid structures, Lightweight construction concepts, Lightweight material construction	✓	✓	✓
<b>Functional integration</b> Actuator technology, Sensor technology, Thermal activation	✓	✓	✓
<b>Measuring and testing technology</b> Component and part analysis, Visual analysis (e.g. microscopy, metallography), System analysis, Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓	✓
<b>Modelling and simulation</b> Crash behaviour, Loads & stress, Life-cycle analysis, Optimisation, Processes, Structural mechanics, Materials, Reliability validation	✓	✓	✓
<b>Plant construction &amp; automation</b> Plant construction, Automation technology, Handling technology, Robotics	✓	✓	✓
<b>Recycling technologies</b> Material separation, Recycling	✓	✓	✓

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**Overview of lightweighting expertise**

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	Research	Development	Manufacturing & Supply
<b>Manufacturing process</b>			
<i>Additive manufacturing</i>			
<i>Coating (surface engineering)</i>			
<i>Fibre composite technology</i>			
<i>Forming</i>			
<b>Joining</b> Clinching, Hybrid joining, Adhesive bonding, Riveting, Screwing, Welding	✓	✓	✓
<b>Material property alteration</b> Thermomechanical treatment, Heat treatment	✓	✓	
<i>Primary forming</i>			
<i>Processing and separating</i>			
<i>Textile technology</i>			

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	Research	Development	Manufacturing & Supply
<b>Material</b>			
<i>Biogenic materials</i>			
<i>Cellular materials (foam materials)</i>			
<b>Composites</b>			
Glass-fiber reinforced plastics (GFRP), Carbon-fiber reinforced plastics (CFRP), Laminates	✓	✓	
<b>Fibres</b>			
Glass fibres, Carbon fibres	✓	✓	
<i>Functional materials</i>			
<b>Metals</b>			
Aluminium, Intermetallic alloys, Magnesium, Steel, Titanium	✓	✓	
<b>Plastics</b>			
Thermoset plastics, Elastomers, Thermoplastics	✓	✓	
<i>Structural ceramics</i>			
<i>(Technical) textiles</i>			

**Contacts**

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## Contacts

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