University of Siegen

Chair of Lightweight Vehicle Construction (FLB)

About this organisation

Machine translation

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

The Chair of Lightweight Vehicle Design (FLB) was founded in 2010 as an institute of the Faculty of Science and Technology IV at the University of Siegen. The FLB is concerned with the development of methods and principles and their implementation for the efficient design of lightweight construction in body and chassis structures.

Structural development is considered holistically, taking into account the entire development chain, from material application and manufacturing technologies to structural design. The resulting solutions are developed on the basis of new technical and scientific findings from these areas and in close co-operation with industrial companies and are therefore both innovative and applicable in practice. In addition to co-operation in research projects, the FLB also offers industrial partners a wide range of services for product development, material and component testing.

Breite Straße 11
57076 Siegen
North Rhine-Westphalia
Germany
www.mb.uni-siegen.de/fahrzeugleichtbau/

Organisation type
University or higher education institution

Sectors

Employees
10 up to 49

Turnover
n/a

Funding
n/a

Main areas covered	Vehicle concepts, Component development, Lightweight construction technologies, Chassis development, Material characterisation
Infrastructure	Sledge crash system, Drop tower, Multi-axial hydropulse test rig, High-speed train HTM, Hydraulic test press
Certifications	
Keywords	Hybrid technology, Topology optimisation, Material modelling, Chassis structural development, Body structure development
Memberships	EFB, NAFEMS, DFG

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Software & databases, Materials, Tools and moulds	✓	✓	
Services & consulting Consulting, Testing and trials, Engineering, Validation, Simulation, Technology transfer	✓	✓	✓
Field of technology			
Design & layout Lightweight manufacturing, Lightweight design, Hybrid structures, Lightweight construction concepts, Lightweight material construction	✓	✓	
Functional integration Thermal activation, Material functionalisation	✓	✓	
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓	✓
Modelling and simulation Crash behaviour, Loads & stress, Optimisation, Processes, Structural mechanics, Materials	✓	✓	✓
Plant construction & automation			
Recycling technologies			

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Manufacturing process			
Additive manufacturing 3D printing	✓	✓	
Coating (surface engineering)			
Fibre composite technology Others (FRP extrusion presses)	✓	✓	✓
Forming Impact extrusion, Compression moulding, Thermal converting, Deep-drawing, Fluid active media based forming	✓	✓	
Joining Hybrid joining, Adhesive bonding, Riveting, Screwing, Welding	✓	✓	✓
Material property alteration			
Primary forming Casting	✓	✓	
Processing and separating Drilling, Sawing, Grinding, Cutting	✓	✓	✓
Textile technology			

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Material			
Biogenic materials			
Cellular materials (foam materials)			
Composites Glass-fiber reinforced plastics (GFRP), Carbon-fiber reinforced plastics (CFRP)	✓	✓	
Fibres Glass fibres, Carbon fibres	✓	✓	
Functional materials			
Metals Aluminium, Intermetallic alloys, Steel	✓	✓	
Plastics Thermoplastics	✓	✓	
Structural ceramics			
(Technical) textiles Laid webs, Woven fabrics	✓	✓	

Contacts

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Contacts

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