Establishment of the Faculty of Mechanical Engineering at Paderborn University

#### About this organisation

#### **Machine translation**

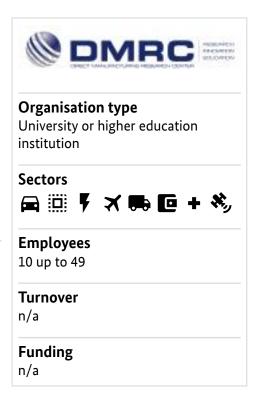
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Additive manufacturing processes are attracting increasing interest in science, industry and education. With this motivation in mind, the Direct Manufacturing Research Centre (DMRC) conducts research with the aim of enabling and improving the use of additive manufacturing processes in terms of direct manufacturing. The results are intended to support industry as well as teaching and training programmes.

Lightweight construction competences among others: -Structural lightweight construction - Lightweight material construction

Mersinweg 3
33098 Paderborn
North Rhine-Westphalia
Germany

dmrc.uni-paderborn.de/de/



Main areas covered	Additive manufacturing processes, Topology optimisation, Re-engineering
Infrastructure	SLM, SLS, FDM
Certifications	
Keywords	AM, Generative manufacturing, Industry 4.0, University research, Additive manufacturing
Memberships	

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Overview of lightweighting expertise			
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	Research	Development	Manufacturing & Supply
Offer			
Products			
Services & consulting Training, Consulting, Testing and trials, Engineering, Prototyping, Validation, Simulation, Technology transfer	<b>✓</b>	<b>✓</b>	
Field of technology			
Design & layout Lightweight manufacturing, Lightweight design, Hybrid structures, Lightweight construction concepts, Lightweight material construction	<b>✓</b>		
Functional integration Material functionalisation	<b>✓</b>		
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), System analysis, Materials analysis, Destructive analysis, Non-destructive analysis	<b>✓</b>	<b>✓</b>	
Modelling and simulation Crash behaviour, Loads & stress, Life-cycle analysis, Multiphysics simulation, Optimisation, Materials, Reliability validation	<b>✓</b>	<b>✓</b>	
Plant construction $\&$ automation			
Recycling technologies Recycling	<b>✓</b>		

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verview of lightweighting expertise				
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	Research	Development	Manufacturing & Supply	
Manufacturing process				
Additive manufacturing 3D printing, Fused deposition modeling, Selective laser melting (SLM, LPBF,), Selective laser sintering (SLS)	<b>~</b>	<b>✓</b>	<b>✓</b>	
Coating (surface engineering)				
Fibre composite technology				
Forming				
Joining				
Material property alteration				
Primary forming				
Processing and separating Milling, Sawing, Grinding, Cutting	<b>✓</b>			
Textile technology				

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Material				
Biogenic materials				
Cellular materials (foam materials)				
Composites				
Fibres				
Functional materials				
Metals Aluminium, Intermetallic alloys, Steel, Titanium	<b>✓</b>			
Plastics Thermoplastics	<b>✓</b>			
Structural ceramics				
(Technical) textiles				

#### **Contacts**

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