Darmstadt University of Technology

Institute for Production Management, Technology and Machine Tools

About this organisation

Machine translation

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

At PTW, our aim is to shape the production of the future and develop topics further. The focus here is on additive manufacturing and machining of metallic materials, the construction and design of machine tools and components as well as process optimisation, production organisation and energy efficiency in manufacturing.

In the field of lightweight construction in machine tools, the PTW also deals with the use of non-metallic materials such as fibre-reinforced plastic composites, ultra-high-strength concretes and mineral casting as well as combinations of these material classes. The research approaches focus on hybrid or multi-material designs that enable new potential through the targeted utilisation of material characteristics. In addition to the structural-mechanical design of the components, the topic of production technology is also considered. The focus here is on research into processes for the production of high-precision fibre-reinforced plastic components on the one hand and on process development for the reliable production of components on the other. These production technologies are complemented by laser-based powder bed fusion for the production of metallic lightweight structures. The focus here is on process optimisation and the use of process monitoring systems to ensure component properties.

Otto-Berndt-Str. 2
64287 Darmstadt
Hesse
Germany
www.ptw.tu-darmstadt.de

Organisation type
University or higher education institution

Sectors
No specific sector

Employees
50 up to 249

Turnover
n/a

Funding

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About this organisation

Main areas covered	Additive manufacturing, Machine tools, Data-driven production
Infrastructure	LPBF systems, Machine tools, Modern measuring equipment, DED plants, Industrial robots
Certifications	
Keywords	
Memberships	

Overview of lightweighting expertise

Machine translation

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	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Machines and plants, Software & databases, Materials	✓	✓	
Services & consulting Training, Consulting, Testing and trials, Prototyping, Simulation, Technology transfer	✓	✓	✓

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Field of technology			
Design & layout			
Functional integration Actuator technology, Sensor technology, Material functionalisation	✓	✓	
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), System analysis, Materials analysis			✓
Modelling and simulation Optimisation, Processes, Materials, Reliability validation	✓	✓	
Plant construction & automation Robotics	✓	✓	
Recycling technologies			

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Manufacturing process			
Additive manufacturing Deposition welding, Selective laser melting (SLM, LPBF, ...)	✓	✓	
Coating (surface engineering)			
Fibre composite technology			
Forming			
Joining			
Material property alteration			
Primary forming			
Processing and separating Drilling, Turning, Milling	✓	✓	
Textile technology			

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	Research	Development	Manufacturing & Supply
Material			
Biogenic materials			
Cellular materials (foam materials)			
Composites Carbon-fiber reinforced plastics (CFRP)	✓	✓	
Fibres			
Functional materials			
Metals Aluminium, Intermetallic alloys, Steel, Titanium	✓	✓	
Plastics			
Structural ceramics			
(Technical) textiles			

Contacts

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Contacts

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