Darmstadt University of Technology

Institute for Production Engineering and Forming Machines (PtU)

About this organisation

Machine translation

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

The Institute of Production Engineering and Forming Machines (PtU) at the Technical University of Darmstadt conducts research in the field of production engineering with a focus on forming manufacturing processes. In addition to the treatment of metallic forming materials, the research focus has expanded in recent years to include the forming of fibre materials such as paper, layered composites and functionally integrated construction methods.

The range of services in the field of lightweight construction includes the development and expansion of manufacturing methods for the production of spatially branched profiles made of high-strength steel and aluminium alloys. On the other hand, the PtU develops methods that enable the integration of functional materials during a forming process and thus represent functionally integrated structures. In addition, the PtU lays the foundations for the forming processing of layered composites (e.g. metal-plastic-metal) and fibre materials (e.g. paper or intrinsic prestressing through fibre-plastic composites). Furthermore, great attention is paid to profiling processes such as roll forming and gap profiling. The constant expansion of the process limits of classic forming processes in recent years has led to the application spectrum of these manufacturing methods being opened up for lightweight construction.

Organisation type
University or higher education institution

Sectors
No specific sector

Employees
50 up to 249

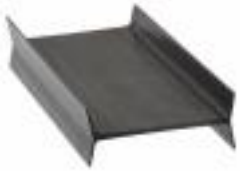
Turnover
€2m - €10m

Funding

Otto-Berndt-Straße 2
64287 Darmstadt
Hesse
Germany
www.ptu.tu-darmstadt.de







Darmstadt University of Technology

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About this organisation

Main areas covered	Forming machines, Process development, Profiling technology
Infrastructure	Various forming machines, Measuring and testing systems, In-house prototype and mould construction, Simulation programmes
Certifications	
Keywords	Reshaping, Function integration
Memberships	

Overview of lightweighting expertise

Machine translation

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	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Semi-finished parts, Machines and plants, Tools and moulds	✓	✓	
Services & consulting Training, Consulting, Testing and trials, Prototyping, Simulation	✓	✓	

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Field of technology			
Design & layout Hybrid structures	✓	✓	✓
Functional integration Actuator technology, Sensor technology	✓	✓	✓
Measuring and testing technology Visual analysis (e.g. microscopy, metallography), Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓	
Modelling and simulation Processes, 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			
Coating (surface engineering) Others (Mechanical surface hammering, deep rolling)	✓	✓	✓
Fibre composite technology			
Forming Bending, Impact extrusion, Forging, Deep-drawing, Fluid active media based forming, Others (Roll and gap profiling)	✓	✓	✓
Joining			
Material property alteration			
Primary forming			
Processing and separating			
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 Laminates, Others (Metal materials pre-stressed by fibre materials, paper)	✓	✓	✓
Fibres			
Functional materials			
Metals Aluminium, Magnesium, Steel	✓	✓	
Plastics			
Structural ceramics			
(Technical) textiles			

Contacts

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Contacts

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Institute Director

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