

About this organisation

Machine translation

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

The chair is focussed on forming metal processing. The main areas of expertise are sheet metal forming, solid forming, manufacturing processes and material characterisation and modelling. Extensive studies are carried out using the finite element method for all forming processes investigated at the chair. New test methods are also being developed to define the necessary material laws.

- Additive manufacturing In order to combine different lightweight construction approaches, the LFT is conducting fundamental research into holistic relationships between additive manufacturing and upstream and/or downstream forming operations, known as hybrid AM processes. - Material characterisation The material properties under defined stress conditions play a decisive role in extending the moulding limits to combine different lightweight construction approaches. The potential in this area is constantly being expanded through research work with conventional tests, but also through the development of new types of characterisation tests. - Forming In order to realise an increase in functional integration in production technology, current research work is not only fundamentally investigating sheet metal and solid forming processes, but also process class combinations from both process classes, i.e. solid sheet metal forming.

Egerlandstraße 13
91058 Erlangen
Bavaria
Germany
www.lft.uni-erlangen.de/



Organisation type

University or higher education institution

Sectors



Employees

50 up to 249

Turnover

n/a

Funding



Friedrich-Alexander-University Erlangen-Nuremberg

Chair of Manufacturing Technology LFT

About this organisation

Main areas covered	Sheet metal and solid forming, Manufacturing processes, Material characterisation, Moulded lightweight construction, composite lightweight construction, Component testing, static, dynamic
Infrastructure	Universal testing machines, Forming presses, Systems for additive manufacturing, Numerical simulation, Metallography, metrology
Certifications	
Keywords	Material characterisation, Reshaping, Simulation, Additive manufacturing, Measuring and testing technology
Memberships	Forming technology working group, Academy of Engineering Sciences, Academy of Production Engineering CIRP, Academy Leopoldina, Company for production technology

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
<i>Products</i>			
<i>Services & consulting</i>			

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Field of technology			
Design & layout Lightweight manufacturing, Lightweight design, Hybrid structures, Lightweight construction concepts, Lightweight material construction	✓	✓	
Functional integration Sensor technology	✓		
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), Materials analysis, Destructive analysis, Non-destructive analysis	✓		
Modelling and simulation Loads & stress, Optimisation, Processes, Materials	✓	✓	
<i>Plant construction & automation</i>			
<i>Recycling technologies</i>			

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Manufacturing process			
Additive manufacturing Deposition welding, Selective laser melting (SLM, LPBF, ...)	✓		
<i>Coating (surface engineering)</i>			
<i>Fibre composite technology</i>			
Forming Bending, Impact extrusion, Compression moulding, Thermal converting, Deep-drawing, Fluid active media based forming, Rolling, Others (Sheet metal forming)	✓	✓	
Joining Clinching, Hybrid joining, Riveting	✓	✓	
Material property alteration Heat treatment	✓		
<i>Primary forming</i>			
Processing and separating Shearing/punching	✓		
<i>Textile technology</i>			

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Material			
<i>Biogenic materials</i>			
<i>Cellular materials (foam materials)</i>			
<i>Composites</i>			
Fibres			
<i>Metal fibres</i>	✓		
<i>Functional materials</i>			
Metals			
<i>Aluminium, Steel, Titanium</i>	✓		
<i>Plastics</i>			
<i>Structural ceramics</i>			
<i>(Technical) textiles</i>			

Contacts

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Contacts

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