

About this organisation

Machine translation

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

The research and teaching focus of the institute is on the influence of forming technology on the material and the interaction between forming technology and property development in the formed material. This holistic approach, which does not just focus on materials or plant technology, enables the investigation and development of new, modern forming technologies.

Magnesium is one of the lightest construction materials with high specific strength and high availability on earth. Its formability at room temperature is low, which is why the production of thin strips is generally cost-intensive due to the numerous reheating stages - but not with the casting-rolling plant at the IMF! A combination of casting and rolling allows up to 2 mm thin strips of magnesium and its alloys to be produced on an industrial scale in a single process stage. The characterisation of the properties and forming process design are among the strengths of the institute and can also be realised for other materials (aluminium, titanium, steel, etc.) in addition to magnesium, both on a laboratory scale and on industrial-scale plant technology.

Bernhard-von-Cotta-Straße 4
09599 Freiberg
Saxony
Germany
www.imf.tu-freiberg.de



Organisation type

University or higher education institution

Sectors

No specific sector

Employees

10 up to 49

Turnover

n/a

Funding

n/a



About this organisation

Main areas covered	Magnesium strip casting-rolling technology, Magnesium wire rod technology, Magnesium materials, Aluminium materials, Titanium materials
Infrastructure	Casting-rolling line (strip and wire), Continuous rolling mill (strip and wire), Forging press, Testing devices for forming parameters, Metallography (SEM, light microscope)
Certifications	
Keywords	Magnesium, Casting rollers, Materials technology, Metallic material composites, Process simulation
Memberships	

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Semi-finished parts, Software & databases, Materials	✓	✓	✓
Services & consulting Training, Consulting, Testing and trials, Validation, Simulation, Technology transfer	✓	✓	

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Field of technology			
Design & layout Hybrid structures, Lightweight material construction	✓	✓	
<i>Functional integration</i>			
Measuring and testing technology Visual analysis (e.g. microscopy, metallography), Materials analysis, Destructive analysis	✓		
Modelling and simulation Materials	✓		
<i>Plant construction & automation</i>			
<i>Recycling technologies</i>			

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Manufacturing process			
<i>Additive manufacturing</i>			
<i>Coating (surface engineering)</i>			
<i>Fibre composite technology</i>			
Forming Bending, Impact extrusion, Compression moulding, Forging, Extrusion moulding, Stretch forming, Thermal converting, Deep-drawing, Rolling, Others (Casting rollers)	✓	✓	
<i>Joining</i>			
Material property alteration Mechanical treatment, Thermomechanical treatment, Heat treatment	✓	✓	
Primary forming Others (Casting rollers)	✓	✓	
<i>Processing and separating</i>			
<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>			
Composites			
Others (clad metallic materials)	✓	✓	✓
<i>Fibres</i>			
<i>Functional materials</i>			
Metals			
Aluminium, Magnesium, Steel, Titanium	✓	✓	
<i>Plastics</i>			
<i>Structural ceramics</i>			
<i>(Technical) textiles</i>			

Contacts

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Contacts

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