Independent state research institution of the Free State of Bavaria

About this organisation

Machine translation

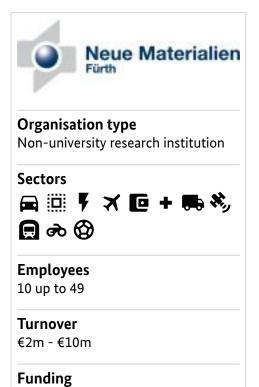
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Neue Materialen Fürth GmbH (NMF) is an applicationoriented state research centre of the Free State of Bavaria with the aim of implementing new materials and manufacturing processes in industry-oriented solutions in close cooperation with research institutes and partners from industry. At NMF, new manufacturing processes are realised for the first time in pilot plant operation on industrial-grade equipment with unique selling points.

- Electron beam-based additive manufacturing (3D printing) of metals (e.g. Ni, Ti) and intermetallic materials -Production, functionalisation and processing of long-fibrereinforced thermoplastics (organic sheets) in process chains suitable for series production - Future-oriented forming technologies for customised metal and hybrid components
- Magnesium injection moulding & die casting (Mg, Al): Alloy and process development, heat treatment, corrosion protection, hybrid and composite materials - Continuous powder extrusion (Temconex®) for the production of profiles, wires and tubes (e.g. Al, Cu; also chip material and MMCs) - Quality-assured additive manufacturing chain for metal and ceramic components (granulate production, moulding, sintering, post-processing; digital twin) - Design of tools and processes through modelling and simulation - Digitalisation in production - Material testing and characterisation, metallography & analytics

Dr.-Mack-Str. 81 90762 Fürth

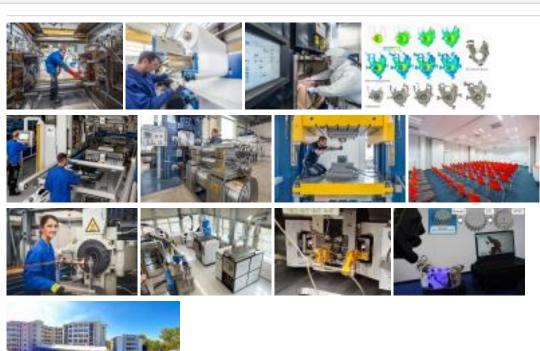
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leichtbauatlas.de Page 1 of 6

Independent state research institution of the Free State of Bavaria

About this organisation





Main areas covered

Additive manufacturing, Long fibre-reinforced thermoplastics, forming technology, Magnesium injection moulding, Continuous powder extrusion, Material characterisation, digitalisation

Infrastructure

Systems for selective electron beam melting, Intermittent hot presses, injection moulding machines, Continuous powder extrusion press, forming presses, Magnesium injection moulding plant, die casting machine, 3D printers, sintering furnaces, CAE tools, test laboratory

Certifications

Keywords

Organosheets, 3D printing, Magnesium, Simulation, Lightweight sheet metal construction

Memberships

leichtbauatlas.de Page 2 of 6

Independent state research institution of the Free State of Bavaria

Overview of lightweighting expertise					
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	Research	N Development	1anufacturing & Supply		
Offer					
Products Parts and components, Semi-finished parts, Software & databases, Materials	✓	✓			
Services & consulting Training, Consulting, Testing and trials, Prototyping, Validation, Simulation, Technology transfer	✓	✓			
Field of technology					
Design & layout Hybrid structures, Lightweight construction concepts	✓	~	✓		
Functional integration Material functionalisation	✓				
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), Environmental simulation, Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓			
Modelling and simulation Loads & stress, Optimisation, Processes, Structural mechanics, Materials	✓	~	~		
Plant construction & automation					
Recycling technologies					

leichtbauatlas.de Page 3 of 6

Independent state research institution of the Free State of Bavaria

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	Research	I Development	Manufacturin & Supply		
Manufacturing process					
Additive manufacturing 3D printing, Electron beam melting, Selective laser melting (SLM, LPBF,), Selective laser sintering (SLS)	~	✓			
Coating (surface engineering)					
Fibre composite technology Others (Long-fibre reinforced thermoplastics (organic sheets), production and further processing on injection moulding machines and forming presses)	✓	~	✓		
Forming Impact extrusion, Compression moulding, Extrusion moulding, Thermal converting, Rolling, Others (Continuous powder extrusion)	✓	~			
Joining					
Material property alteration					
Primary forming Casting, Pultrusion, Sintering, Injection moulding	✓	~			
Processing and separating					
Textile technology					

leichtbauatlas.de Page 4 of 6

Independent state research institution of the Free State of Bavaria

Overview of lightweighting expertise					
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	Research		facturing upply		
Material					
Biogenic materials					
Cellular materials (foam materials)					
Composites Aramid fibre composites, Glass-fiber reinforced plastics (GFRP), Carbon-fiber reinforced plastics (CFRP), Natural fibre reinforced plastics (NFRP)	✓	✓			
Fibres Aramid fibres, Glass fibres, Carbon fibres, Natural fibres	✓				
Functional materials					
Metals Aluminium, Intermetallic alloys, Magnesium, Steel, Titanium, Others (e.g. nickel, copper, intermetallic materials)	✓	✓			
Plastics Thermoplastics	✓				
Structural ceramics					
(Technical) textiles					

Contacts

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leichtbauatlas.de Page 5 of 6

Independent state research institution of the Free State of Bavaria

leichtbauatlas.de Page 6 of 6