Independent state research institution of the Free State of Bavaria

About this organisation

Machine translation

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

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.

* Magnesium injection moulding and die casting. Development of new alloys, particle- and fibre-reinforced components and hot runner technology. Material optimisation for casting tools and aggregates, microstructure optimisation through heat treatment, corrosion protection and process development for hybrid components. * Several calculation platforms for casting simulation and longstanding users. Calculation of mould filling, solidification or formation of residual stresses. Development of customised system solutions. * Production, functionalisation and further processing of long-fibre-reinforced thermoplastics (organic sheets) in process chains suitable for series production. * Future-orientated forming technologies for lightweight structures in lightweight sheet metal construction * Continuous powder extrusion (Temconex® technology) for the production of semi-finished products, wires and tubes made from aluminium, copper and silver alloys, including chip material and MMCs * Additive manufacturing (3D printing) for nickel-based, titanium and aluminium alloys.

chip material and MM printing) for nickel-ba

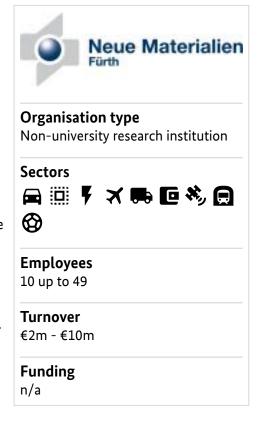
Dr.-Mack-Str. 81

90762 Fürth

Bavaria

Germany

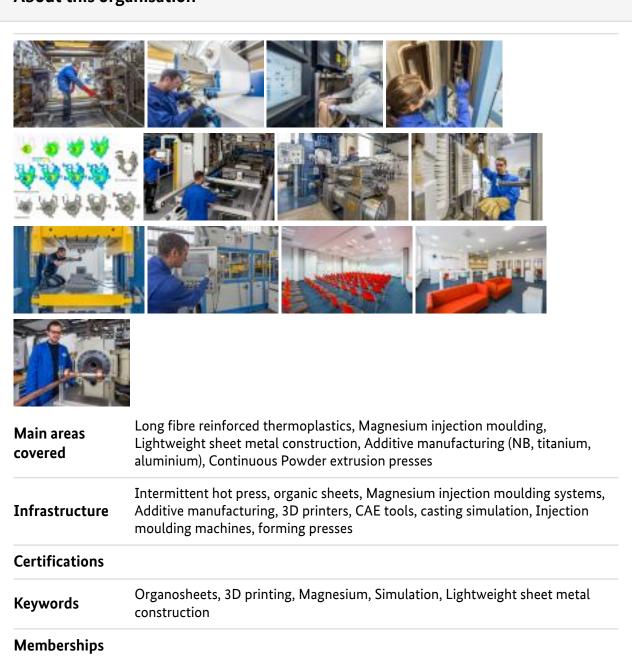
www.nmfgmbh.de



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About this organisation



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Overview of lightweighting expertise			
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	Research	N Development	lanufacturing & 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	✓	✓	
Modelling and simulation Loads & stress, Optimisation, Processes, Structural mechanics, Materials	✓	~	✓
Plant construction & automation			
Recycling technologies			

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	Research	N 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, Injection moulding	✓	✓		

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Overview of lightweighting expertise			
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	Research	Development	Manufacturing & Supply
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, Magnesium, Titanium	✓		
Plastics Thermoplastics	✓		
Structural ceramics			
(Technical) textiles			

Contacts

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Contacts			
Mr DrIng. Leo Hoffmann			
leo.hoffmann@nmfgmbh.de			

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