

Forward Engineering GmbH

About this organisation

Machine translation

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

Forward Engineering is a globally active development and consulting partner for holistic and sustainable product development, taking into account new materials and manufacturing processes. The company is headquartered in Munich with offices in Japan, China and the United States.

From concept development to series validation, FORWARD supports automotive manufacturers, suppliers and material manufacturers in the realisation of functional lightweight construction solutions that achieve real added value through the targeted use of technical and fibre-reinforced plastics. FORWARD's unique capabilities in the areas of "Production Based Engineering" and "Simulation Driven Design" accelerate product development throughout the entire development phase. The result is reduced iterations during FEA/crash simulation, a higher level of confidence in the detailed design, and production-ready and validated solutions with accurate cost estimates. In co-operation with its global partner network of technology companies, the materials and supply industry as well as public and private institutes, FORWARD quickly and efficiently delivers holistic solutions to challenging problems

Frei-Otto-Str. 22
80797 München
Bavaria
Germany
www.forward-engineering.com



Organisation type

Small or medium-sized enterprise

Sectors



Employees

10 up to 49

Turnover

€2m - €10m

Funding

n/a

Forward Engineering GmbH

About this organisation

Main areas covered	Development service, Technical advice, Battery development, Future Mobility structural development, Design for Sustainability
Infrastructure	FEA, CAD and LCA software tools, OEM specific project offices, 3D printing & prototyping, Material database, internal tools, Material & process expert network
Certifications	
Keywords	Development, Calculation, Counselling, Simulation, Design
Memberships	Composites United e.V., IACMI - The Composites Institute, The Battery Show - Advisory Board

Overview of lightweighting expertise

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Manufacturing
Research Development & Supply

Offer

Products

Parts and components, Others (Prototyping and Testing, Material and Product Testing, Test Development)



Services & consulting

Training, Consulting, Testing and trials, Engineering, Prototyping, Validation, Simulation, Others (Forward Academy, LCA, life cycle assessment, cost engineering, project management)



Overview of lightweighting expertise

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Field of technology	Manufacturing		
	Research	Development	& Supply
Design & layout Lightweight manufacturing, Lightweight design, Hybrid structures, Lightweight construction concepts, Lightweight material construction, Others (Material & Simulation Driven Design, Manufacturing Based Engineering)	✓	✓	✓
Functional integration Material functionalisation	✓	✓	
Measuring and testing technology Component and part analysis, System analysis	✓	✓	
Modelling and simulation Crash behaviour, Loads & stress, Life-cycle analysis, Multiphysics simulation, Optimisation, Processes, Structural mechanics, Materials		✓	
<i>Plant construction & automation</i>			
<i>Recycling technologies</i>			

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
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Manufacturing process

Additive manufacturing

3D printing

✓ ✓

Coating (surface engineering)

Fibre composite technology

Filament winding, Manual lamination, Resin infusion process, Resin transfer moulding, Pre-preg processing, Vacuum infusion, Others (Specialisation in industrial production/ series production of composites and plastic applications.)

✓ ✓

Forming

Impact extrusion, Compression moulding, Thermal converting

✓

Joining

Material property alteration

Primary forming

Pultrusion, Injection moulding

✓

Processing and separating

Textile technology

Braiding, Preforming, Knitting, Nonwoven & mats production, Weaving, Knitting, laid web production

✓

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Overview of lightweighting expertise

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Manufacturing
Research Development & Supply

Material

Biogenic materials

Bioplastics, Biocomposites, Wood



Cellular materials (foam materials)

Composites

Aramid fibre composites, Basalt fibre-reinforced plastic, Glass-fiber reinforced plastics (GFRP), Carbon-fiber reinforced plastics (CFRP), Natural fibre reinforced plastics (NFRP), Laminates, Particulate composites



Fibres

Aramid fibres, Basalt fibres, Glass fibres, Ceramic fibres, Carbon fibres, Metal fibres, Natural fibres



Functional materials

Metals

Others (green metals, recycling technologies)



Plastics

Thermoset plastics, Elastomers, Thermoplastics



Structural ceramics

(Technical) textiles

Yarns, rovings, Meshes, Laid webs, Crocheted fabrics, Woven fabrics, Knitted fabrics, Nonwovens, mats



Contacts

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