

About this organisation

Machine translation

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

Chair of Product Development and Lightweight Construction

The central theme of the Chair of Product Development and Lightweight Construction is design in the sense of engineering design, i.e. the creation of a solution for a technical problem. This is particularly challenging, but also particularly interesting for top-down approaches. The desired properties of the product to be developed are at the forefront and the focus is less on existing solution elements. Product development methods such as creativity techniques or process modelling support the exploration of the unknown in the same way as simplified principle models from lightweight construction applications.

Boltzmannstr. 15
85748 Garching bei München
Bavaria
Germany
www.mec.ed.tum.de/lpl/startseite/



Organisation type

University or higher education institution

Sectors

No specific sector

Employees

10 up to 49

Turnover

n/a

Funding



About this organisation

| | |
|---------------------------|---|
| Main areas covered | Structural optimisation, Topology optimisation, System requirements, Component optimisation, Additive manufacturing |
| Infrastructure | Autoclave, Tensile testing machine, CFRP production, 3D printer, CNC machines |
| Certifications | |
| Keywords | System optimisation, Robotics, Additive manufacturing |
| Memberships | Design Society |

Overview of lightweighting expertise

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| | Research | Development | Manufacturing & Supply |
|---|----------|-------------|------------------------|
| Offer | | | |
| Products Parts and components, Machines and plants | ✓ | ✓ | |
| Services & consulting Training, Consulting, Testing and trials, Engineering, Prototyping, Validation, Simulation, Technology transfer, Others (Co-operation partners for research projects) | ✓ | ✓ | ✓ |

Overview of lightweighting expertise

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| | Research | Development | Manufacturing & Supply |
|---|----------|-------------|---------------------------|
| Field of technology | | | |
| Design & layout Lightweight manufacturing, Hybrid structures, Lightweight construction concepts | ✓ | ✓ | ✓ |
| Functional integration Actuator technology, Sensor technology, Material functionalisation | ✓ | ✓ | |
| Measuring and testing technology Component and part analysis, System analysis, Destructive analysis, Non-destructive analysis | ✓ | ✓ | |
| Modelling and simulation Crash behaviour, Loads & stress, Life-cycle analysis, Multiphysics simulation, Optimisation, Processes, Structural mechanics, Materials, Reliability validation | ✓ | ✓ | |
| Plant construction & automation Robotics | ✓ | ✓ | |

Recycling technologies

Overview of lightweighting expertise

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| | Research | Development | Manufacturing & Supply |
|---|----------|-------------|---------------------------|
| Manufacturing process | | | |
| Additive manufacturing 3D printing, Laminated object manufacturing (LOM), Stereolithography | ✓ | ✓ | ✓ |
| <i>Coating (surface engineering)</i> | | | |
| Fibre composite technology Manual lamination, Pre-preg processing | ✓ | ✓ | ✓ |
| <i>Forming</i> | | | |
| Joining Adhesive bonding, Screwing | ✓ | ✓ | ✓ |
| Material property alteration Mechanical treatment, Heat treatment | ✓ | ✓ | ✓ |
| <i>Primary forming</i> | | | |
| Processing and separating Drilling, Turning, Milling, Grinding, Cutting | ✓ | ✓ | ✓ |
| <i>Textile technology</i> | | | |

Overview of lightweighting expertise

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| | Research | Development | Manufacturing & Supply |
|---|----------|-------------|---------------------------|
| Material | | | |
| Biogenic materials Biocomposites | ✓ | ✓ | ✓ |
| <i>Cellular materials (foam materials)</i> | | | |
| <i>Composites</i> | | | |
| Fibres Glass fibres, Carbon fibres, Natural fibres | | ✓ | ✓ |
| Functional materials Piezoelectric materials | ✓ | ✓ | |
| Metals Aluminium, Intermetallic alloys, Steel, Titanium | ✓ | ✓ | ✓ |
| Plastics Thermoplastics | ✓ | ✓ | |
| <i>Structural ceramics</i> | | | |
| <i>(Technical) textiles</i> | | | |

Contacts

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Contacts

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