# Institut für Umformtechnik und Leichtbau IUL

*Main Office*

## About this organisation

35 scientists, supported by 11 technicians and administrative staff members and approximately 50 student assistants, work on the institute's research projects. Especially when it comes to interdisciplinary research issues, the projects are often pursued with national and international partners.

The research activities of the Institute of Forming Technology and Lightweight Components comprise the development of new forming processes and process chains as well as the extension of existing production processes. The objectives are physically sound process descriptions, the configuration and improvement of component properties, and a holistic approach of the process efficiency. Methodological key aspects are material characterization and simulation methods. The fundamental research results are transferred to industrial practice. This process is often accompanied by industrial partners.

Baroper Strasse 303
44227 Dortmund
North Rhine-Westphalia
Germany
www.iul.eu

**Organisation type**
University or higher education institution

**Sector**

**Employees**
10 up to 49

**Turnover**
n/a

**Funding**

**Main areas covered** Umformtechnik, Leichtbau, Massivumformung, Biegung, Blechumformung

**Infrastructure**

**Certifications**

**Keywords**

**Memberships**

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## Overview of lightweighting expertise

| | Research | Development | Manufacturing & Supply |
|---|---|---|---|
| **Offer** | | | |
| *Products* | | | |
| *Services & consulting* | | | |
| **Field of technology** | | | |
| *Design & layout* | | | |
| *Functional integration* | | | |
| *Measuring and testing technology* | | | |
| **Modelling and simulation** Loads & stress, Life-cycle analysis, Multiphysics simulation, Optimisation, Processes, Structural mechanics, Materials | ✓ | ✓ | ✓ |
| *Plant construction & automation* | | | |
| *Recycling technologies* | | | |

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## Overview of lightweighting expertise

| | Research | Development | Manufacturing & Supply |
|---|---|---|---|
| **Manufacturing process** | | | |
| **Additive manufacturing**<br>3D printing, Fused deposition modeling, Selective laser melting (SLM, LPBF, ...), Selective laser sintering (SLS) | ✓ | ✓ | |
| *Coating (surface engineering)* | | | |
| *Fibre composite technology* | | | |
| **Forming**<br>Bending, Impact extrusion, Compression moulding, Forging, Extrusion moulding, Stretch forming, Thermal converting, Deep-drawing, Fluid active media based forming, Rolling | ✓ | ✓ | ✓ |
| **Joining**<br>Hybrid joining, Welding | ✓ | ✓ | |
| *Material property alteration* | | | |
| **Primary forming**<br>Extrusion | ✓ | ✓ | |
| *Processing and separating* | | | |
| *Textile technology* | | | |

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## Overview of lightweighting expertise

| | Research | Development | Manufacturing & Supply |
|---|---|---|---|
| **Material** | | | |
| *Biogenic materials* | | | |
| *Cellular materials (foam materials)* | | | |
| *Composites* | | | |
| *Fibres* | | | |
| *Functional materials* | | | |
| **Metals**<br>Aluminium, Magnesium, Steel, Titanium | ✓ | ✓ | |
| *Plastics* | | | |
| *Structural ceramics* | | | |
| *(Technical) textiles* | | | |

## Contacts


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