

## About this organisation

### Machine translation

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

The LZN understands itself as the connecting element between basic research and industrial applications for automotive, ship&rail, machine tool, medical and aerospace products in order to gain most resource efficient bionic design and manufacturing solutions. The LZN installed smart and innovative process chains, provides service for every step from idea through innovative light design to manufacturing of the final product.

The main aim of our competence fields "Aerospace" is to introduce innovations to industrial lightweight design. This is achieved through usage of new, modern geometric structures and development of Rapid Manufacturing processes, especially Laser Additive Manufacturing of metallic alloys. FEM simulation, optimisation and insights from the area of bionics lead us to introduce new, innovative structures and to use them to create and develop innovative lightweight functional components. Laser Additive Manufacturing technology is particularly suitable for the production of components with high complex geometries from various alloys, which could not be produced in the conventional way. Through Laser Additive Manufacturing it is possible to create bionic optimised structures with high strength and low weight. Furthermore, it also allows producing cellular structures which have applications such as crash absorption or improved heat transfer.

Am Schleusengraben 14  
21029 Hamburg  
Hamburg  
Germany  
[www.lzn-hamburg.de](http://www.lzn-hamburg.de)



### Organisation type

Small or medium-sized enterprise

### Sectors



### Employees

50 up to 249

### Turnover

€2m - €10m

### Funding

n/a



# LZN Laser Centre North GmbH

## About this organisation

**Main areas covered** 3D printing, Finite element analysis, Topology optimisation, Research & industrial applications, Class trainings

**Infrastructure**

**Certifications**

**Keywords** Additive manufacturing, Rapid manufacturing, 3D printing, Laser cutting, Trainings

**Memberships**

## Overview of lightweighting expertise

### Machine translation

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	Research	Development	Manufacturing & Supply
<b>Offer</b>			
<b>Products</b> Parts and components	✓	✓	
<b>Services &amp; consulting</b> Training, Consulting, Testing and trials, Prototyping, Technology transfer			✓

## Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
<b>Field of technology</b>			
<b>Design &amp; layout</b> Lightweight manufacturing, Lightweight design, Hybrid structures, Lightweight construction concepts, Lightweight material construction	✓	✓	
<b>Functional integration</b> Actuator technology, Media conductivity, Sensor technology, Thermal activation, Material functionalisation	✓	✓	
<b>Measuring and testing technology</b> Component and part analysis, Visual analysis (e.g. microscopy, metallography), Materials analysis	✓	✓	
<b>Modelling and simulation</b> Loads & stress, Multiphysics simulation, Optimisation, Processes, Structural mechanics, Materials, Reliability validation	✓	✓	
<i>Plant construction &amp; factory automation</i>			
<i>Recycling technologies</i>			

## Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
<b>Manufacturing process</b>			
<b>Additive manufacturing</b> 3D printing, Deposition welding, Selective laser melting (SLM, LPBF, ...), Selective laser sintering (SLS)	✓	✓	
<i>Coating (surface engineering)</i>			
<i>Fibre composite technology</i>			
<i>Forming</i>			
<b>Joining</b> Hybrid joining, Welding	✓	✓	
<b>Material property alteration</b> Thermomechanical treatment, Heat treatment	✓	✓	
<i>Primary forming</i>			
<b>Processing and separating</b> Others: null	✓	✓	
<i>Textile technology</i>			

## Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
<b>Material</b>			
<i>Biogenic materials</i>			
<i>Cellular materials (foam materials)</i>			
<b>Composites</b>			
Carbon-fiber reinforced plastics (CFRP), Metal matrix composite	✓	✓	
<i>Fibres</i>			
<i>Functional materials</i>			
<b>Metals</b>			
Aluminium, Steel, Titanium	✓	✓	
<b>Plastics</b>			
Thermoplastics	✓	✓	
<i>Structural ceramics</i>			
<i>(Technical) textiles</i>			

## Contacts

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Contacts	
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