

# THM - Central Hesse University of Applied Sciences

## AutoM - Competence Centre for Automotive, Mobility and Materials Research

### About this organisation

#### Machine translation

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

In order to sharpen its research profile, THM has set up interdisciplinary competence centres in its main research areas, whose strength lies particularly in application-oriented research and development. The working groups in the competence centres offer young scientists excellent research opportunities and cooperate with other scientists in Germany and abroad as well as with industry.

The AutoM competence centre focuses on lightweight construction and fatigue strength. The range of services includes modern methods for the lightweight construction of components and systems in mechanical and automotive engineering, with a particular focus on fatigue strength. This includes FE analyses, numerical structural optimisation (topology and shape optimisation, dimensioning) and service life simulations for virtual product development as well as experimental methods for verifying durability and function. In addition, there is experience in the additive manufacturing of components made of steel and aluminium as well as in bionic design practice.

Wilhelm-Leuschner-Straße 13  
61169 Friedberg (Hessen)  
Hesse  
Germany

[www.thm.de/site/forschung/forschung-an-der-thm/kompetenzzentren/autom.html](http://www.thm.de/site/forschung/forschung-an-der-thm/kompetenzzentren/autom.html)



#### Organisation type

University or higher education institution

#### Sectors



#### Employees

10 up to 49

#### Turnover

n/a

#### Funding

n/a



Leichtbau & Betriebsfestigkeit



**THM - Central Hesse University of Applied Sciences**  
*AutoM - Competence Centre for Automotive, Mobility and Materials Research*

About this organisation	
<b>Main areas covered</b>	Design of lightweight structures, Testing of lightweight structures, Design and FE simulation, num. Topology/shape optimisation
<b>Infrastructure</b>	CAE laboratory (CAD, FEM, optimisation), Test laboratory for strength/function
<b>Certifications</b>	
<b>Keywords</b>	Lightweight construction, Operational stability, Computer Aided Engineering
<b>Memberships</b>	

Overview of lightweighting expertise			
Machine translation			
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	Research	Development	Manufacturing & Supply
<b>Offer</b>			
<i>Products</i>			
<b>Services &amp; consulting</b> Training, Consulting, Testing and trials, Engineering, Prototyping, Validation, Simulation, 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, Lightweight construction concepts, Lightweight material construction	✓	✓	
<i>Functional integration</i>			
<b>Measuring and testing technology</b> Component and part analysis, Visual analysis (e.g. microscopy, metallography), Materials analysis, Destructive analysis, Non-destructive analysis	✓	✓	
<b>Modelling and simulation</b> Loads & stress, Optimisation, Structural mechanics, Materials	✓	✓	
<i>Plant construction &amp; 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, Selective laser melting (SLM, LPBF, ...), Selective laser sintering (SLS)	✓	✓	
<i>Coating (surface engineering)</i>			
<i>Fibre composite technology</i>			
<i>Forming</i>			
<i>Joining</i>			
<i>Material property alteration</i>			
<i>Primary forming</i>			
<i>Processing and separating</i>			
<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>			
<i>Composites</i>			
<i>Fibres</i>			
<i>Functional materials</i>			
<b>Metals</b> Aluminium, Magnesium, Steel	✓	✓	
<i>Plastics</i>			
<i>Structural ceramics</i>			
<i>(Technical) textiles</i>			

### Contacts

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## Contacts

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