

# HP CFK - Research co-operation for high-performance production of CFRP structures

## About this organisation

### Machine translation

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

As a research association of Leibniz Universität Hannover (IFW), TU Braunschweig (IFL) and TU Clausthal (PuK), we have been a partner for the design and development of lightweight structures made of fibre-reinforced plastic composites and their production technologies at the CFRP North Research Centre since 2011.

Aircraft and structural design - Design development and investigations - Numerical calculation methods - Design of structural concepts and optimisation - Fibre composite and hybrid lightweight structures Materials engineering and science - Characterisation of thermoset and thermoplastic resin systems, e.g. deformation and flow and flow behaviour, thermal conductivity, reaction kinetics, Tg - Characterisation of textile systems (carbon fibre, glass fibre) - Process development - Hybrid material concepts, e.g. metal-CFRP composites Mechanical engineering and production technology - Development of lay-up systems, e.g. automated fibre placement systems, draping systems lay-up systems, deposition systems for metal foils (for hybrid components) - Process monitoring in lay-up systems, e.g. with the aid of thermography - Moulding tools, e.g. self-heated tools for prepreg forming or for autoclave-free autoclave-free component curing - Process chain design and optimisation

Ottenbecker Damm 12  
21684 Stade  
Lower Saxony  
Germany  
[www.hpcfkd.de](http://www.hpcfkd.de)



### Organisation type

University or higher education institution

### Sectors



### Employees

10 up to 49

### Turnover

Up to €2m

### Funding



[Projects in the funding catalogue](#)



# HP CFK - Research co-operation for high-performance production of CFRP structures

## About this organisation

**Main areas covered** Automated fibre placement, Thermographic process monitoring, CFRP-metal hybrid composites, Structural design/optimisation, Material characterisation

**Infrastructure** Material characterisation laboratory

**Certifications**

**Keywords**

**Memberships**

## Overview of lightweighting expertise

### Machine translation

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

|   | Research | Development | Manufacturing<br>& Supply |
|---|----------|-------------|---------------------------|
| <b>Offer</b>  |          |             |                           |
| <i>Products</i>   |          |             |                           |
| <b>Services &amp; consulting</b><br>Consulting, Testing and trials, Engineering,<br>Prototyping, Validation, Simulation, Technology<br>transfer, Others: null | ✓        | ✓           |                           |

# HP CFK - Research co-operation for high-performance production of CFRP structures

## Overview of lightweighting expertise

### Machine translation

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

|   | Research | Development | Manufacturing<br>& Supply |
|---|----------|-------------|---------------------------|
| <b>Field of technology</b>  |          |             |                           |
| <b>Design &amp; layout</b><br>Lightweight manufacturing, Lightweight design,<br>Hybrid structures   | ✓        | ✓           |                           |
| <b>Functional integration</b><br>Actuator technology, Material functionalisation  | ✓        | ✓           |                           |
| <b>Measuring and testing technology</b><br>Component and part analysis, Visual analysis<br>(e.g. microscopy, metallography), Materials<br>analysis, Destructive analysis, Non-destructive<br>analysis | ✓        | ✓           | ✓                         |
| <b>Modelling and simulation</b><br>Loads & stress, Life-cycle analysis, Optimisation,<br>Processes, Structural mechanics, Materials   | ✓        | ✓           | ✓                         |
| <b>Plant construction &amp; factory automation</b><br>Plant construction, Automation technology,<br>Handling technology, Robotics   | ✓        | ✓           |                           |

*Recycling technologies*

# HP CFK - Research co-operation for high-performance production of CFRP structures

## Overview of lightweighting expertise

### Machine translation

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

|  | Research | Development | Manufacturing<br>& Supply |
|--|----------|-------------|---------------------------|
| <b>Manufacturing process</b>   |          |             |                           |
| <b>Additive manufacturing</b><br>3D printing, Fused deposition modeling  | ✓        | ✓           | ✓                         |
| <i>Coating (surface engineering)</i>   |          |             |                           |
| <b>Fibre composite technology</b><br>Resin infusion process, Pre-preg processing,<br>Vacuum infusion, Others: null | ✓        | ✓           |                           |
| <b>Forming</b><br>Thermal converting, Others: null   | ✓        |             |                           |
| <b>Joining</b><br>Hybrid joining, Others: null   | ✓        | ✓           |                           |
| <i>Material property alteration</i>  |          |             |                           |
| <i>Primary forming</i>   |          |             |                           |
| <b>Processing and separating</b><br>Milling  | ✓        | ✓           |                           |
| <b>Textile technology</b><br>Preforming  | ✓        |             |                           |

# HP CFK - Research co-operation for high-performance production of CFRP structures

## Overview of lightweighting expertise

### Machine translation

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

|  | Research | Development | Manufacturing<br>& Supply |
|--|----------|-------------|---------------------------|
| <b>Material</b>  |          |             |                           |
| <i>Biogenic materials</i>  |          |             |                           |
| <b>Cellular materials (foam materials)</b><br>Closed-pore  | ✓        |             |                           |
| <b>Composites</b><br>Glass-fiber reinforced plastics (GFRP), Carbon-fiber reinforced plastics (CFRP), Others: null | ✓        |             |                           |
| <b>Fibres</b><br>Glass fibres, Carbon fibres   | ✓        |             |                           |
| <i>Functional materials</i>  |          |             |                           |
| <b>Metals</b><br>Aluminium, Steel  | ✓        |             |                           |
| <b>Plastics</b><br>Thermoset plastics, Elastomers, Thermoplastics  | ✓        |             |                           |
| <i>Structural ceramics</i>   |          |             |                           |
| <b>(Technical) textiles</b><br>Laid webs, Woven fabrics  | ✓        |             |                           |

## Contacts

### Machine translation

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

## HP CFK - Research co-operation for high-performance production of CFRP structures

### Contacts

Mr Dr.-Ing. Carsten Schmidt

*Managing Director*

[schmidt\\_c@ifw.uni-hannover.de](mailto:schmidt_c@ifw.uni-hannover.de)