

To extend our team, we are looking for a full time

## Research Associate (m/f/d) in the field of Process Digitalization for Hydrogen Pressure Vessels

### About us

The Chair of Carbon Composites (LCC) at the Technical University of Munich pursues an interdisciplinary research approach from raw materials to production engineering up to complete composite components. of fiber-reinforced composite materials and their applications. This includes the development of new manufacturing methods, new approaches for process and structural simulation, as well as research in the field of material characterization and testing.

We are currently looking for a new, motivated colleague (m/f/d) for a joint research project aimed at the development of a digital twin for composite parts produced in filament winding processes (e.g. hydrogen pressure vessels).

At TUM, we are focusing on the following research areas:

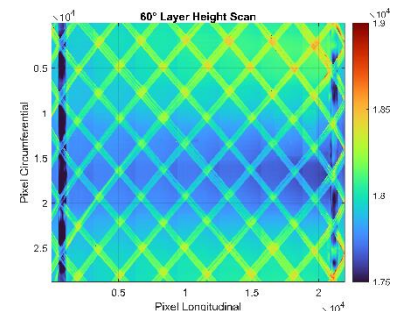
- Development of a methodology to determine the influences of the filament winding process on the resulting material properties
- Characterization and modeling of the influences for transfer into a digital twin
- Production (filament winding) of composite structures for validation of the investigations using a demonstrator geometry

### Requirements

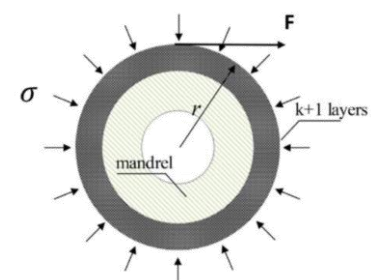
- Above-average university degree (Diploma or Master's degree) in the fields of materials science, composite materials, plastics engineering, manufacturing technology, or similar
- General interest in manufacturing processes and characterization of composite structures
- Enjoyment of experimental work and digitalization methods
- Determination, independent and structured working style and pronounced teamwork and communication skills
- Proficiency in writing longer texts with complex content in German and English

### Tasks

- Independent handling of various tasks in a research project with partners from industry and science
- Participation in the preparation of research proposals
- Supervision and guidance of student theses
- Involvement in teaching in the field of materials science/composite materials
- Supervision of scientific equipment



*Laser scan of deposited fibers [Strobl2024]*



*Compaction forces during the process [cf. Wang2020]*

### **We offer**

- Exciting research and working environment within a young, committed team
- Opportunity for a doctorate for professional and personal development
- Remuneration according to the collective agreement (TV-L)

### **Application**

- The position is initially limited to two years
- Disabled persons will be given preference if they have the same qualifications and suitability
- TUM strives to raise the proportion of women in its workforce and explicitly encourages applications from qualified women.
- TUM does not cover any costs associated with attending interviews
- Please send your application via email to [personal\\_24\\_01.lcc@ed.tum.de](mailto:personal_24_01.lcc@ed.tum.de). In the case of a written application, we kindly ask you to submit only copies, as we cannot return your application documents after the procedure is completed

### **Data Protection Notice:**

As part of your application for a position at the Technical University of Munich (TUM), you will transmit personal data. Please note our privacy policy in accordance with Art. 13 General Data Protection Regulation (GDPR) for the collection and processing of personal data as part of your application. By submitting your application, you confirm that you have taken note of TUM's Privacy Policy.

### **Technical University of Munich**

Chair of Carbon Composites

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