

## Development of short fiber-reinforced ceramics using natural resources and recycled materials

The THA\_comp team conducts research in the field of ceramic matrix composite (CMCs). These materials are used in various applications such as aircraft turbines (Fig. 1), satellite mirrors, or high-performance brakes (Fig. 2). Currently, CMCs are based on synthetically produced raw materials, predominantly oil-based, which undergo an expensive processing chain. In line with the principles of a circular economy, the research project aims to replace these raw materials with natural-based alternatives or recycling materials.

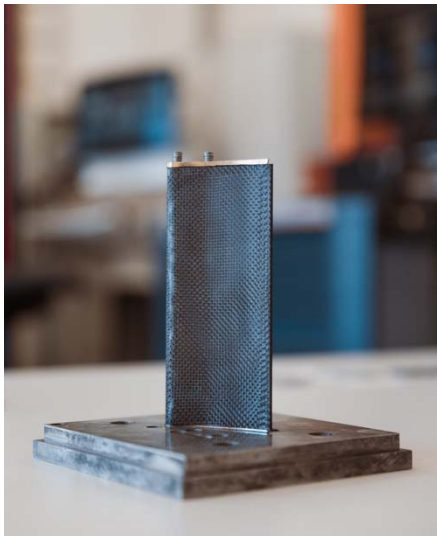


Figure 1: CMC turbine component    Figure 2: CMC brake disk

### Scope of the internships or theses:

In the state-of-the-art research laboratory equipped with the latest technologies, we gain practical experience and develop innovative solutions. Our work focuses on manufacturing test specimens and systematically characterizing materials in their raw state as well as in composite form. The challenging and exciting research activities within the project will be specified and adapted to the qualifications and skills of the intern.

### Special requirements:

- Interest in advanced materials
- Basic knowledge in material science, preferably ceramics and composites
- Enjoyment of the challenge

**Qualification level:** Preferably, Master's degree or Bachelor's degree further advanced

**Program lines:** A2S

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