

Project IMFEX & Institute for Structural Mechanics & Lightweight Design

# Master / Bachelor Thesis

## Thermomechanical tests of additively manufactured Phase Change Material heat sink

### About Space Team Aachen & IMFEX

The Space Team Aachen is a space science association founded by students of the Aachen universities. Our team is formed of ambitious students from a variety of fields who share the fascination for space exploration. Project IMFEX is a REXUS experiment to be launched in March of 2022 on board a sounding rocket. As part of the MoonFibre project, it aims to produce first basalt fibres in space environment for the very first time.

### Your responsibilities

This thesis is within our project IMFEX, a REXUS project to be launched in March of 2022. Your task is to perform thermomechanical tests on the crucial 3D-printed component – a large aluminium heat sink containing paraffin PCM embedded in a lattice structure. This part is already printed and is waiting to be tested.

- Define detailed test procedure
- Design and manufacture necessary test equipment
- Perform the tests
- Document the results and procedures
- Coordinate all efforts as part of the IMFEX team

Project begin: ASAP

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### Our requirements

- Student\*in mechanical engineering
- High motivation & reliability
- Fascination for space engineering
- Able to work alone and in a team
- Knowledge of English and/or German
- Highly systematic way of working
- Enjoyment in hands-on work

### What do we offer

- Be a part of highly-motivated REXUS team
- Receive a DLR certificate of participation of the REXUS programme
- Hands-on work on highly complex, additively manufactured spaceflight hardware
- Contact with experts from EOS GmbH, DLR, ZARM, SSC and Moraba
- See your thesis actually fly into space (and hopefully get it back)!
- The work is led at the SLA facilities, in the framework of the team IMFEX's activities



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