

Experimental Investigation of Sustainable Fiber-Metal Laminates with Activatable Interface

Assignment: Bachelor Thesis/Master Thesis/Laboratory project



Motivation

Fiber-metal laminates, which are used, for example, in aircraft construction, offer decisive advantages over monolithic materials. So far, however, the recycling of these material composites has been challenging. A novel approach aims to produce fiber-metal laminates with an activatable interface so that the components can be separated again at the end of their life. It is crucial that this inserted interface does not cause a significant weakening of the properties during use. In order to further develop the approach, the influences of the intermediate layer are to be investigated on the basis of a material selection that has already been carried out.



Objectives

This thesis deals with the investigation of the thermal-mechanical behavior of sustainable fiber-metal laminates. An intermediate layer allows the materials to be separated at the end of the use phase. The aim is to investigate the influence of the polymeric interlayer on the thermal-mechanical behavior as well as the development of damage.



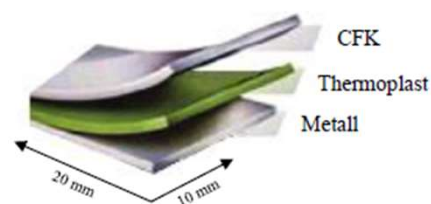
Preconditions

- Degree in materials science, industrial engineering or similar, whereby the approval to start the final thesis/laboratory project has already been obtained on the basis of the applicable study regulations
- Previous knowledge in the field of materials science and composites
- Interest in experimental research
- Sound knowledge of English



Tasks

- Literature review on the topic: thermo-mechanical properties and damage behavior of fiber-metal laminates
- Design of experiments
- Sample preparation Experimental set-up and integration of measurement technology
- Execution and evaluation of experiments
- Presentation of results and theory in scientific form
- Preparation of the main results and presentation in the seminar



Scientific Guidance:

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Chair of Hybrid Composite Materials
Research Group: Materials&Mechanics

Start:

anytime

type of work:

experimental