



Leibniz
Universität
Hannover

The Institute of Structural Analysis at the Leibniz University Hannover invites applications for the position of a

Research Associate/Ph.D. Candidate (m/f/d) on the topic of "Multi-scale strain energy-based fatigue damage modelling of fibre reinforced polymers" (Salary Scale 13 TV-L, 100 %)

to be filled by August, 2024. The position is initially limited to 3 years, with the possibility of extension. A doctorate within the framework of the advertised position is certainly desired.

The topic

Continuous fiber-reinforced polymers (FRP) hold high potential to satisfy the requirements of industries such as aviation, marine systems and wind energy regarding high structural loads at minimum weight. They enable renewable energy from wind, sustainable, energy-efficient aviation and resource-efficient buildings. The prediction and understanding of their fatigue behaviour under operational loads are highly relevant topics in theoretical and applied research. In recent years, several fatigue damage models for FRP have already been presented. Most models require a large amount of experimental input for proper calibration. The need for costly and time-consuming experiments is not only due to the mechanical complexity of the fatigue damage process of composite materials, but also because many models have to compensate for a conceptual lack of physical consistency. In this ambitious project, we minimize the experimental effort with a multi-scale simulation approach to propose a fatigue damage model for FRP based on a new energy metric.

Tasks

The position offers an interesting research challenge in a DFG (German Research Foundation) funded project at the interface of fundamental and applied research in close collaboration with a renowned research institution. The successful candidate will work on extending the state of the art regarding the fatigue damage modelling of fiber-reinforced polymers.

Employment conditions

Formal requirements include a scientific university degree (master-level) in engineering or related fields. You will be provided with counsel and support, however, the ability for self-motivated and independent work is essential. Good English and basic German language skills are required.

This task requires a profound background in computational mechanics and mechanics of materials. Knowledge concerning technical aspects of composites and practical engineering skills are beneficial. Willingness to support teaching activities is expected

Leibniz University Hannover considers itself a family-friendly university and therefore promotes a balance between work and family responsibilities. Part-time employment can be arranged on request.



Leibniz
Universität
Hannover

The university aims to promote equality between women and men. For this purpose, the university strives to reduce under-representation in areas where a certain gender is under-represented. Women are under-represented in the salary scale of the advertised position. Therefore, qualified women are encouraged to apply. Moreover, we welcome applications from qualified men. Preference will be given to equally-qualified applicants with disabilities.

Further inquiries may be directed to Prof. Dr.-Ing. habil. R. Rolfes (Email: r.rolfes@isd.uni-hannover.de) and Dr.-Ing. Sven Scheffler (Email: s.scheffler@isd.uni-hannover.de). Further information can be found on our website at: <https://www.isd.uni-hannover.de/en/>

Applications should include a curriculum vitae and the usual transcripts and certificates. All documents should be merged into a single PDF file.

Please submit applications including the above-mentioned documents by June 1, 2024 concerning the **internal code 'position 142'** in the electronic form to:

Email: bewerbung@isd.uni-hannover.de

or alternatively via postal mail to:

Gottfried Wilhelm Leibniz Universität Hannover

Institut für Statik und Dynamik

Appelstr. 9A

30167 Hannover

<http://www.uni-hannover.de/jobs>

Information on the collection of personal data according to article 13 GDPR can be found at <https://www.uni-hannover.de/en/datenschutzhinweis-bewerbungen/>.