Leibniz Universität Hannover

The Institute of Turbomachinery and Fluid-Dynamics (TFD) invites applications for **two positions** of a

# Research Associate (m/f/d) with focus on "Design of turbomachinery for airplanes with fuel cell power supply systems" (Salary Scale 13 TV-L, 100 %)

starting on June 1, 2024. The positions are initially limited to 30 months. The scope of the positions correspond to 100 % of the regular weekly working hours. The opportunity to do a PhD is given.

## Motivation

With the objective of achieving the Paris climate protection targets by 2050, innovative and in some cases disruptive technologies must be developed and brought to market maturity in all areas of energy conversion. Both in the mobility sector and in stationary applications, a large number of possible processes for sustainable power generation coexist. There is a great need for innovative solutions in the aviation sector in particular, as very high levels of efficiency and power densities of the individual components are required for efficient flying. One concept currently being pursued to achieve these goals is to equip short and medium-range aircraft with fuel cells that run on hydrogen. In order to supply the fuel cells with a sufficient amount of oxygen from the atmosphere during cruising flight, they must be supplied with air via modern turbomachinery.

## Task description

The aim of your work at the institute is the aerothermodynamic design and optimisation of turbomachinery for the air supply of flying fuel cells. Both the aerostage and the overall system are analysed from a fluid mechanical, thermodynamic and structural mechanical point of view. As part of your work, you will apply the latest methods of computational fluid dynamics (CFD) and design methods.

At the TFD, you will be part of a competent and highly motivated team of young employees to tackle these challenges. Your responsibilities will also include coordination with representatives from industry and other research institutions. In addition, the supervision and mentoring of students in the context of their scientific thesis will enable you to gain experience in leading small groups.

## Recruitment requirements

The prerequisite for employment is a completed scientific university degree with a major in mechanical engineering or a comparable course of study with a focus on fluid mechanics, thermal turbomachinery, aircraft propulsion or comparable.

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Desired in addition are:

- Very good to excellent grades in your studies
- Detailed knowledge of aerothermodynamics of turbomachinery
- Knowledge in the application of CFD methods (preferably ANSYS CFX)
- Knowledge of CAD applications
- Very good knowledge of German and English
- Willingness and ability to contribute to a young team
- Independent and careful way of working
- Pleasure in scientific work

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 upon request.

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.

For further information, please contact Dipl.-Ing. Philipp Nachtigal
(Tel.: 0511 762-2755).

Please send your application with the usual documents (including grades of the Bachelor's and Master's degree and certificate of general qualification for university entrance) until April 30 , 2024 to

Email: nachtigal@tfd.uni-hannover.de

or by postal mail to:
**Gottfried Wilhelm Leibniz Universität Hannover**
Institut für Turbomaschinen und Fluid-Dynamik (TFD)
Dipl.-Ing. Philipp Nachtigal
An der Universität 1
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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/.