



Technische
Universität
Braunschweig

IMAB Institut für Elektrische Maschinen,
Antriebe und Bahnen
TU Braunschweig



PhD-Researcher Position (m/f/d) within the SE²A Research Cluster
***Design and Optimisation of Electrical Machines and Drives
for Aircraft Applications***
Temporary Position (up to 3 years), up to Salary Level EG 13 TV-L, 100%

Background:

The Cluster of Excellence SE²A - *Sustainable and Energy-Efficient Aviation* is a DFG-funded interdisciplinary research center investigating technologies for a sustainable and eco-friendly air transport system. Scientists from aerospace, electrical, energy and chemical engineering as well as economics and social science are working on the reduction of drag, emissions and noise, life-cycle concepts for airframes, improvements in air traffic management and new technologies for energy storage and conversion. Technische Universität Braunschweig, the German Aerospace Center (DLR), Leibniz University Hannover (LUH), the Braunschweig University of Art (HBK) and the National Metrology Institute of Germany (PTB) have joined forces in this extraordinary scientific undertaking. The overall project is structured into the three core research areas "Assessment of the Air Transport System", "Flight Physics and Vehicle Systems" and "Energy Storage & Conversion".

(www.tu-braunschweig.de/en/se2a)

Employment:

The position is located at the *Institute for Electrical Machines, Traction and Drives* (www.imab.de) in Braunschweig. The entry date is as soon as possible, and the duration is initially limited until the end of 2025. The position is part-time suitable, but should be occupied 100%. For all doctoral researchers of the cluster, an active participation in SE²A's own qualification program is mandatory, the time effort for this training measure entails 10% of the working time. The payment is made according to task assignment and fulfillment of personal requirements up to salary group EG 13 TV-L. International applicants may have to successfully complete a visa process before hiring can take place. Applications from international scientist are welcome. The Cluster SE²A aims to increase the share of women in academic positions. Applications from female candidates are very welcome. Where candidates have equal qualifications, preference will be given to female applicants. Candidates with handicaps will be preferred if equally qualified. Please enclose a proof.

Task:

In the context of realising electric propulsion systems for aircraft applications the electric machine plays an essential role in the energy conversion chain. You will work on new methods in the design process to meet

the high requirements of this applications. In this context, motor models are to be analyzed, loss models have to be set up and lifetime models have to be developed in an interdisciplinary team.

- *Research in the field of reliability and lifetime of electrical machines of aircraft applications*
- *Development of drive system models due to performance and lifetime*
- *Participation in testbed setups*
- *Publication of new research results, supervision of student work*

Who we are looking for:

- *Master's degree (or comparable degree) in the fields of electrical engineering, industrial engineering, physics or mechanical engineering*
- *Ambitious and independent in working on research projects*
- *Interested in applied research on electrical drive systems, experience in testbed realization*
- *In-depth knowledge in the field of electrical drive design, thermal and/or electromagnetical*
- *Experience in lifetime investigations of electrical machines desirable*
- *Good team-working, observational and communication skills are essential*
- *Very good written and spoken English*

Application Process:

Applications should be sent by e-mail to markus.henke@tu-braunschweig.de

or via mail to

Prof. Markus Henke
Institut für Elektrische Maschinen, Antriebe und Bahnen
Hans-Sommer-Straße 66
38106 Braunschweig

and must contain the following documents until 15.01.2023.

- Motivation Letter
- Curriculum Vitae including complete address, phone number, email address, educational background, language skills and work experience
- Copies of bachelor and master diploma and transcript of grades in original language and in English or German translation
- Additional Documents must be provided on request

All documents should be in PDF format, preferably in a single file. Personal data and documents relating to the application process will be stored electronically.

Please note that application costs cannot be refunded. For the purpose of carrying out the application process, personal data will be stored.

For more information, please call Markus Henke on +49 (0) 531 391- 3914.