# Job offer



# **Doctoral Researcher**

**Institute of Applied Mechanics** Graz University of Technology

The Institute of Applied Mechanics offers 3 full-time fully funded PhD positions within the CRC project Computational Electric Machine Laboratory for 4 years, 40 hours/week, starting as soon as possible.

We are looking for motivated and dedicated candidates interested in modeling and/or numerical simulation of challenging engineering problems. We are a motivated team with the ambition to conduct innovative interdisciplinary research. These particular projects of the CRC focus on the development of an advanced isogeometric framework for the analysis of electric drives and space-time boundary element formulations for the noise and vibration of electric drives.

## **YOUR TASK**

The doctoral candidate will be part of the Collaborative Research Centre (CRC) Computational Electric Machine Laboratory. This first German-Austrian Transregio CRC, research groups from TU Darmstadt, JKU Linz, and TU Graz, want to achieve a paradigm shift in the design and development of electrical machines. The candidate's contribution shall lead to a doctorate and focus on the following topics:

#### **Project 05 Noise and Vibration of Electric Drives: Space-Time Boundary Element Formulations**

· Simulation of noise and vibration with time-domain boundary element method (BEM)

· Fast and data-sparse methods for vibration of electrical machines

MORE INFO: https://www.tugraz.at/go/crc-schanz

#### **Project 03 Advanced Isogeometric Framework** for the Analysis of Electric Drives

 Adressing generic obstacles of the integration of design and simulation

accurate and CAD-compatible spline models

 Developing a flexible geometry handling including topological changes

# REQUIREMENTS

Completed master's degree in the field of engineering, computer science, software development, applied mathematics, or similar.

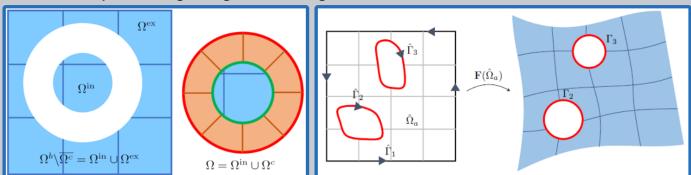
## **DESIRED QUALIFICATIONS**

Very good knowledge of numerical methods and computer-aided geometric design, good programming skills (e.g., C++ or Matlab) and excellent English language skills.

# SALARY

Job Grading "B1" according tot he collective bargaining agreement of universities; monthly minimum salary € 3.058,60 gross (14x per year); previous experience will be taken into account on the basis of the collecting bargaining agreement.

Graz University of Technology supports affirmate ac-•Discretisation for simulation and optimisation with tion. Therefore, women are particularly encouraged to apply.



#### MORE INFO: https://www.tugraz.at/go/crc-marussig

# APPLICATION

Please send your application documents, CV and a motivation letter (half a page) via email to: Institute of Applied Mechanics, Graz University of Technology, Technikerstraße 4/II, 8010 Graz, Austria Project 03: Ass.Prof. Dr. Benjamin Marussig - marussig@tugraz.at Project 05: Univ.-Prof. Dr.-Ing. Martin Schanz - m.schanz@tugraz.at Screening begins at June 1st, 2022