Technische Universität Dresden (TUD), as a University of Excellence, is one of the leading and most dynamic research institutions in the country. Founded in 1828, today it is a globally oriented, regionally anchored top university as it focuses on the grand challenges of the 21st century. It develops innovative solutions for the world's most pressing issues. In research and academic programs, the university unites the natural and engineering sciences with the humanities, social sciences, and medicine. This wide range of disciplines is a special feature, facilitating interdisciplinarity and transfer of science to society. As a modern employer, it offers attractive working conditions to all employees in teaching, research, technology, and administration. The goal is to promote and develop their individual abilities while empowering everyone to reach their full potential. TUD embodies a university culture that is characterized by cosmopolitanism, mutual appreciation, thriving innovation, and active participation. For TUD, diversity is an essential feature and a quality criterion of an excellent university. Accordingly, we welcome all applicants who would like to commit themselves, their achievements, and productivity to the success of the whole institution.

The Boysen-TU Dresden Research Training Group for young researchers from Engineering, Social Sciences, Arts, and Humanities, co-financed by the Friedrich and Elisabeth Boysen Foundation and the Technische Universität Dresden, is offering a doctoral scholarship[1] from January 1, 2023, for a maximum of 3 years, subject to available funding. The interdisciplinary Research Training Group, in what is its fourth generation, is conducting research on the overarching topic Hydrogen Economy - Strategic element of a future GreenGas deal. It consists of four clusters. Cluster G: Electro catalysts for a competitive hydrogen economy combines three sub-projects (SP). A suitable person (m/f/x) is being sought to work on the topic SP G1: Experimental investigations on doping of carbon materials and influence of functional groups on electrocatalytic activity in cathodic oxygen reduction. The Chair of Inorganic Chemistry I at the Faculty of Chemistry and Food Chemistry at TU Dresden is responsible for the supervision. The interdisciplinary supervision takes place in the common rooms of the Research Training Group.

Abstract: In order to make hydrogen efficiently usable as an energy carrier, it is essential to develop highly effective and cost-effective catalyst materials that catalyze the electrode reactions in fuel cells and water splitting, in particular the oxygen reduction reaction (ORR) in energy production from hydrogen. The project aims to systematically investigate heteroatom-doped carbon materials for use as electrocatalysts. The focus is primarily on a deeper understanding of the relationships between the structure of the functionalized carbon materials (specific surfaces, pore size distribution, type, quantity, and position of the functional groups introduced by doping) and the resulting electrocatalytic activity in ORR. The project benefits from the joint expertise in inorganic materials chemistry and physical electrochemistry, as well as operando spectroscopy, in order to arrive at a targeted material design of optimized catalyst materials through structure elucidation in situ.

Applicants should have an above-average academic record in chemistry, electrochemistry, or materials development, and a high degree of willingness to engage in interdisciplinary work and research. Accepting the scholarship obliges your presence in the research group's offices in Dresden on three fixed core days per week. Participation in the college's teaching program is compulsory (24 ETCS in 3 years).

TUD strives to employ more women in academia and research. We therefore expressly encourage women to apply. The University is a certified family-friendly university and offers a Dual Career Service. We welcome applications from candidates with disabilities. If multiple candidates prove to be equally qualified, those with disabilities or with equivalent status pursuant to the German Social Code IX (SGB IX) will receive priority for employment.

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1 The amount of the scholarship is based on the basic amount according to DFG criteria: https://www.dfg.de/foerderung/programme/einzelfoerderung/forschungsstipendien/stipendienrechner/
Please send your compelling application including a letter of motivation, curriculum vitae, copies of academic certificates or other relevant qualifications (language certificates, further training), and a max. 10-page sample text (e.g. final thesis, term paper, or publication) until November 21, 2022 (stamped arrival date of the university central mail service applies) with the subject “SP G1: Experimental investigations on doping of carbon materials and influence of functional groups on electrocatalytic activity in cathodic oxygen”, preferably via the SecureMail Portal of the TU Dresden https://securemail.tu-dresden.de as one PDF document to anna.martius@tu-dresden.de. Alternatively, applications can also be sent to the following address: TU Dresden, Boysen-TU Dresden-Graduiertenkolleg, Frau Dr. Anna Martius, Helmholtzstr. 10, 01069 Dresden, Germany. Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.

Reference to data protection: Your data protection rights, the purpose for which your data will be processed, as well as further information about data protection is available to you on the website: https://tu-dresden.de/karriere/datenschutzhinweis