

The Chair of High Power Electronic Systems of the Faculty of Electrical Engineering and Information Technology has a vacancy for a

## **Research Assistant / Ph.D. Student (m/f/d) in the Area of Modular Multilevel Converters (MMC)**

**for the research project DEFINE within the Center for Digitization and  
Technology Research of the German Federal Armed Forces (DTEC.Bw)**

**(Remuneration according to pay group 13 TVöD)**

to be filled on a full-time basis for a limited period until 31.12.2024.

The Universität der Bundeswehr München (University of the Federal Armed Forces Munich) is firmly anchored in the German and international research community. As a campus university with excellent facilities, it offers the best conditions for high-quality teaching and research.

The DTEC.Bw will be established as a scientific center at the Universität der Bundeswehr München, supported by both universities of the German Federal Armed Forces. Its goal is to promote and strategically bundle projects of innovative and interdisciplinary top-level university research in the areas of digitization and related key and future technologies. It will enable new research cooperations of the Bundeswehr with science, business, administration and society, and strengthen knowledge and technology transfer.

The sought-after candidate supports the research project DEFINE, which is funded by DTEC.Bw and led by Dr. Thomas Brückner. The DEFINE project is dedicated to the development of fault-tolerant systems for a secure and sustainable energy supply of the future. In an interdisciplinary team, comprising seven university institutes, the research fields of secure IT systems and control structures, power electronic hardware and building structures are being worked on.

In this context, components and systems of modular multilevel converters (MMC) are investigated, developed and tested in the Laboratory of High Power Electronic Systems for the pilot scenario of a digitally controllable, urban medium-voltage DC grid. A holistic solution approach is pursued and optimization from the system to the component level is aimed at.

### **Your tasks:**

- investigation and development of novel MMC submodules and power-converter systems for future MVDC networks in analysis, simulation and experiment.
- contribution to the restructuring and expansion of the laboratory for high-power semiconductors and multilevel converters (up to the medium voltage range)
- presentation and discussion of research results among project partners and at international conferences
- participation in lectures and supervision of bachelor and master theses

### **Qualification requirements:**

- an excellent master's degree in electrical engineering, mechatronics or equivalent fields of study
- very good knowledge of power electronics and its applications
- practical laboratory experience with higher voltage/power and/or measurements on power semiconductors desirable, but not mandatory

### **What we expect:**

- interest in new technologies, their applications and interdisciplinary work
- strong team spirit and communication skills
- analytical thinking; responsible, careful and structured work in the laboratory
- initiative, enthusiasm and creativity
- proficiency in English, both written and spoken

### **What we offer:**

- research on innovative solutions for one of the most important topics of the future
- a highly motivated, interdisciplinary team in close cooperation with the industry
- campus university with short distances between scientific work and attractive sports and leisure facilities just outside Munich
- active promotion of your scientific development and possibility to obtain your doctorate (German Dr.-Ing. equivalent to Ph.D.) with appropriate suitability and motivation
- salary according to pay group 13 in compliance with § 12 TVöD with regard to the actual tasks to be carried out and the fulfillment of personal or collective agreement requirements
- mobile working possible to a limited extent and after consultation with the project managers

Employment can also be part-time if desired. The Universität der Bundeswehr München aims to increase the proportion of female scientists and employees; applications from women are expressly welcomed. Persons with handicaps will be given special consideration if they are equally qualified.

### **Have we triggered your interest?**

Then please send your meaningful application documents (cover letter, resume, references, certificates) with the subject "Bewerbung DEFINE" in PDF format via e-mail to [sekretariat.hle@unibw.de](mailto:sekretariat.hle@unibw.de).

By submitting your application, you agree to your personal data being stored, processed and forwarded to the departments involved in the application process for the purposes of the application. You can access more detailed information on data protection at the following link: [Data Protection Declaration](#).

### **We look forward to your application!**