UNIVERSITÄT PADERBORN
Die Universität der Informationsgesellschaft

Paderborn University is a high-performance and internationally oriented university with approximately 20,000 students. Within interdisciplinary teams, we undertake forward-looking research, design innovative teaching concepts and actively transfer knowledge into society. As an important research and cooperation partner, the university also shapes regional development strategies. We offer our more than 2,500 employees in research, teaching, technology and administration a lively, family-friendly, equal opportunity environment, a lean management structure and diverse opportunities.

Join us to invent the future!

In the Faculty of Electrical Engineering, Computer Science and Mathematics at the Department of **Power Electronics and Electrical Drives (LEA)** a

PhD Position as Scientific Coworker (f/m/d)

(salary level 13 TV-L)

in the DFG-funded research project "GaNius" is vacant. Project focus is the analysis and build-up of new low common mode three-phase PFC rectifier (applied e.g. in On-Board Chargers for EVs) utilizing the specific advantages of Gallium-Nitride (GaN) power semiconductors. The employment covers 100 % of the regular working time and is initially limited to 3 years according to German legal regulations (Drittmittelfinanzierung im Sinne des Wissenschaftszeitvertragsgesetzes, WissZeitVG). This limitation corresponds to the granted project duration. An extension is presumed possible and desired. The opportunity of scientifically qualifying by a **PhD thesis** is given and explicitly supported.

Job description and tasks:

- Circuit simulations of new three-phase PFC topologies and DC-DC stages
- Analytic analysis and dimensioning of various power topologies
- Experimental GaN-HEMT characterization, specifically of monolithic bidirectional devices, on existing test setups
- Build-up and operation of three-phase PFC lab prototypes (about 11 kW)
- Development and implementation of modulation- and control algorithms on DSP in C
- Verification, documentation and publication of results

Requirements of employment:

- Very good graduate degree in Electrical Engineering, Control Engineering or comparable university studies (Master degree)
- Established knowledge in circuit simulation (e.g. Plecs, Simplorer, Simulink, …)
- Well-founded programming skills (C, Matlab/Simulink, VHDL if applicable)
- Good knowledge and practical experience in the dimensioning as well as in the prototype implementation of power electronic converters
- Appropriate experiences with DSP-based real-time control on embedded systems
- Knowledge and experiences in analog circuits (e.g. gate drive- and sensing circuits), and ideally in PCB design
- Self-reliant and team-oriented working attitude
- Good English in oral and written form

For more information see: http://lea.uni-paderborn.de/

Applications from women are particularly welcome and, in case of equal qualifications and experience, will receive preferential treatment according to state law (LGG). Part-time employment is generally possible. Qualified disabled people (in the sense of the German social law SGB IX) are also encouraged to apply.

Applications with the usual documents (cover letter, CV, certificates in one PDF-file) and indicated by the **reference number 5041** should be sent **until February 28th 2022** to **sekretarit@lea.uni-paderborn.de**

Information regarding the processing of your person data can be located at: https://www.uni-paderborn.de/zv/personaldatenschutz.

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