Lehrstuhl für Mikro- und Nanosystemtechnik
TUM School of Computation, Information and Technology
Technische Universität München

PhD, Research Assistant

Research Assistant (PhD Candidate) in RF systems design for IoT sensor networks at the Chair of Micro- and Nanosystems Technology (m/f/d)

The Chair of Micro- and Nanosystems Technology (MNT) is looking for a Research Assistant (m/w/d) for RF system design for low power IoT sensor networks.

The Internet of Things (IoT) has opened up completely new applications in many areas. In particular, the wireless connection of a large number of sensors can now provide information in industrial environments, for example, that was previously inaccessible. In this context, RF-based sensors represent a very interesting group, which can be used in particular to detect changes in material properties in an industrial context.
These sensor systems require both high-performance RF sensors with the associated evaluation circuits and also efficient, low-power radio networks. One approach here is edge computing, with which the data rate can be significantly reduced and thus the use of low-power network nodes.

Your research activities include:

- Working on current research and development topics in the area of IoT sensor networks.
- Research and Design of novel PCB-based RF sensor nodes.
- Development of low-power radio networks.
- Demonstration of feasibility, simulation and measurement of sensor nodes.
- Performance Analysis of low-power radio networks.
- Presentation of project results at international conferences and to research partners.

Necessary qualification

- A master degree in electrical engineering, communications engineering, mechatronics, computer engineering, medical engineering or similar fields.
- Very good knowledge in the areas of radio frequency technology and communications technology.
- Very good analytical and conceptual skills as well as a structured way of working.
- A high degree of independence, initiative and commitment.

Desirable Qualification

- Knowledge in the design and simulation of radio frequency systems (e.g. PathWave System Design (SystemVue), Simulink, Phyton).
- Knowledge in the design, simulation and layout of PCB-based RF systems (e.g. ADS and Altium Designer).
- Knowledge in EM-simulation (HFSS, CST, Momentum, etc.).

We Offer:

- An interdisciplinary research unit with a young and motivated team
- Participation in international conferences
- An international scientific network
- A friendly, helpful and international work environment
- The possibility to do a PhD thesis under personal supervision
- Direct cooperation and co-supervision by Fraunhofer Research Institution for Microsystems and Solid State Technologies EMFT
- Embedding in scientific environment at Fraunhofer EMFT and on-site workplace
- Fair pay according to the collective wage agreement of the federal state (TV-L E13)

Application:
Please send your application documents (Motivation, CV, academic transcripts, possibly internship/work references) in one PDF file (max. 25MB) to **Prof. Dr-Ing. Amelie Hagelauer**, Chair for Micro- and Nanosystems Technology, Technical University of Munich (**amelie.hagelauer@tum.de**). We are looking forward to meet you!

Bewerbungen werden gerne auch in deutscher Sprache entgegengenommen.

Hinweis zum Datenschutz:
Im Rahmen Ihrer Bewerbung um eine Stelle an der Technischen Universität München (TUM) übermitteln Sie personenbezogene Daten. Beachten Sie bitte hierzu unsere Datenschutzhinweise gemäß Art. 13 Datenschutz-Grundverordnung (DSGVO) zur Erhebung und Verarbeitung von personenbezogenen Daten im Rahmen Ihrer Bewerbung. Durch die Übermittlung Ihrer Bewerbung bestätigen Sie, dass Sie die Datenschutzhinweise der TUM zur Kenntnis genommen haben.

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