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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