



Research Assistant (m/f/d) for Wireless Communications and Sensing

Job-ID: 3079/26 | Department: System Architecture | Working Time: 40h/week, part-time feasible | Salary: as per tariff (E13 TV-L)
Limitation: until June 2028 (end of project) | Entry Date: as soon as possible

IHP is an institute of the Leibniz Association and conducts research and development of silicon-based systems and ultra-high frequency circuits and technologies including new materials. It develops innovative solutions for application areas such as wireless and broadband communication, security, medical technology, industry 4.0, automotive industry, and aerospace. IHP employs approximately 400 people. It operates a pilot line for technological developments and the preparation of high-speed circuits with 0.13/0.25 μm -SiGe-BiCMOS technologies, located in a 1500 m² cleanroom that meets the highest industrial nanotechnology requirements.

The position:

We are looking for a motivated researcher to join our team to work on Wireless Communication and Sensing Systems, supporting the implementation of our real-time ultra-high data rate wireless communication system prototype targeting > 300 Gbit/s. Your detailed tasks will include:

- Development of signal processing algorithms for a next-gen wireless communication system, focusing on synchronization and CFO compensation
- Definition of a parallelized baseband processor architecture and optimization of algorithms for an efficient implementation
- Real-time implementation of signal processing algorithms in VHDL
- Firmware, API and application software programming for the system prototype

Your qualifications:

You hold a university or master's degree in computer science, electrical engineering, or a related field. A doctorate will be an advantage. You have very good knowledge and experience in developing signal processing algorithms using Matlab/Simulink, with a focus on wireless communication systems. Extensive experience with parallelized high-performance FPGA implementation of processing algorithms using Vivado and Vitis is requested, as well as very good programming skills in C for ARM-based processors in a baremetal configuration. Python programming skills are an advantage. Additionally, it is essential that you have experience with high-frequency analog frontends and relevant measurement equipment.

You must be fluent in English. German language skills are welcome, and further development of German language skills is strongly expected.



Our Offer:

Conduct research in a challenging, multinational environment giving you excellent career opportunities. You will have the chance to establish international reputation at the edge of top-notch technologies.

It is important to us to support the individual career developments (e.g. conferences, advanced trainings) as well as the personal needs of our employees by offering flexible working hours and the possibility to work off-site. The compatibility of work and family is highly valued. More information about our scientific excellence and the working environment at IHP can be found on our website.

IHP is TOTAL E-QUALITY-certified for equal opportunities for women and men at work and actively pursues the equality of all gender and all groups of people. We promote the professional development of women and strongly encourage them to apply. Disabled applicants, qualified according to the above criteria, will be given preference over other candidates with equivalent relevant qualifications.

Further advantages:

30 days holiday | special annual payment | Company pension scheme (VBL) | Flexible working hours, also part-time (no core working hours) | Possibility to work up to 40 % independent of location according to company agreement | A wide range of further training opportunities in-house or within the framework of business trips | Discounted company ticket with monthly allowance of € 15 for various fare zones | Good transport connections, free parking at the institute | Structured induction and actively supported integration into the institute (welcome workshop, intercultural workshop, joint leisure activities)

Your application:

Have we sparked your interest? We look forward to receiving your application in German or English via our [online application form](#).

For more information about the position, please contact Dr. Markus Petri: wenger@ihp-microelectronics.com.



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