



## PhD position (m/f/d) in high frequency circuits for THz wireless data communication

Job-ID: 5083/21 | Department: Circuit Design | Salary: according TV-L | Working time: 40h/week (part-time work option) | Limitation: initially 2 years with option of extension for three more years | Entry Date: 01.11.2021

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 350 people. It operates a pilot line for technological developments and the preparation of high-speed circuits with 0.13/0.25  $\mu\text{m}$ -SiGe-BiCMOS technologies, located in a 1500 m<sup>2</sup> cleanroom that meets the highest industrial nanotechnology requirements.

### The position:

As a member of the research group High Data-Rate Communication Circuits within the department Circuit Design you will contribute to research the use of the SiGe technology for THz communication circuits. Your tasks will include the design of THz communication circuits (amplifiers, mixers, oscillators etc.) and the experimental evaluation of their performance. An international team of 8 scientists including very experienced scientists as well as several PhD students is looking forward to you. Flat hierarchies and mutual support are important to us. We see diversity of perspectives as a great advantage for our team. We strive for a balanced gender mix in our team.

### Your PhD project:

The working title of the doctorate will be “Development of SiGe THz circuits for extremely high data-rate wireless communication systems”. The doctorate is supported by an experienced supervisor and accompanied within the framework of a supervision agreement. We aim together for a completion within 3-5 years. After one and a half years, the topic will be finally defined and the contract duration will be adjusted accordingly by mutual agreement to the foreseeable doctoral period.

### Your qualifications:

You are holding a Master's degree in Electrical Engineering or a comparable study area. You are already experienced in the design of high frequency circuits and systems. Ideally, but not mandatory, you have a background in integrated circuits design flow, electromagnetic simulations and high frequency measurements (vector network analysis, spectrum analysis), as well as a basic knowledge in the field of antennas.

You are also a strong team player. We are looking for a team member, who is able to structure his or her own work and to bring a well-organized and systematic way of working into the cooperation with creative minds. You are an ideal match for this position, when you have experimental, analytical and problem-solving skills, very strong

communicative skills and the ability to quickly learn how to operate the latest technical equipment including various software.

It is necessary that you confidently handle the English language. Knowledge of the German language is welcome. The deepening of German language skills is expected and highly encouraged, for example in in-house language courses and intensive courses.

**Our Offer:**

Do 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. An orientation guide will help you to quickly integrate into the institute and to familiarize yourself with the field.

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.

**Your application:**

Have we sparked your interest? Then we look forward to receiving your application until [September 10<sup>th</sup>, 2021](#) via our [online application form](#).

For further information regarding the position please contact Dr. Andrea Malignaggi:  
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