



PhD position (m/f/d) in the field of high-speed ADC and DAC integrated circuits

Job-ID: 5116/21 | 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 | Earliest Entry Date: 01.03.2022

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 μm -SiGe-BiCMOS technologies, located in a 1500 m² cleanroom that meets the highest industrial nanotechnology requirements.

The position:

As a member of the research group “Converters and High-Speed Logic Circuits” within the Circuit Design department you will contribute to research in analog-to-digital and digital-to-analog converters, targeting the signal conversion bandwidth in a range of tens of GHz. Your tasks will include architecture analysis, IC design, as well as testing of A/D and D/A converters at sampling frequencies of 100 GSps and above.

A growing international team within the Circuit Design department of more than 30 scientists and engineers with broad area of experience 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:

Within the doctorate with the working title “*Development of the A/D and D/A interfaces for sub-THz transceivers*”, it is intended to explore the accuracy and bandwidth limitations of high-speed A/D and D/A converters. Moreover, the research work focuses on ways of how to overcome these limitations and includes IC manufacturing and characterization.

The doctorate is supported by an experienced supervisor and accompanied within the framework of a supervision agreement. We aim together for a completion within 4-5 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 have a strong background in analog/HF IC design. You are already experienced in modeling and EDA tools (Matlab, IC development software, etc.). We expect a good knowledge of A/D and D/A converters' architectures and their key parameters. Ideally, but not mandatory, you have experience in performing measurements, in designing of high frequency (>10 GHz) integrated circuits and in simulation of mixed-signal designs.

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



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communicative skills and the ability to quickly learn how to operate the latest technical equipment including various EDA 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 **25. Januar 2022** via our [online application form](#).

For further information regarding the position please contact Dr. Pylip Ostrovskyy:
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