Faculty of Electrical and Computer Engineering

Since 2012 the Technische Universität Dresden (TUD) is a part of the elected group of eleven Universities of Excellence in Germany. Furthermore, the Dresden location features the “Silicon Saxony”, which is the largest microelectronics cluster in Europe.

In the frame of the BMBF project PLL-SYNCHRONISATION, the Chair of Circuit Design and Network Theory at the Institute of Circuits and Systems offers a job position for a

Research Associate / PhD Student / Postdoc
In Radio Frequency Circuit Design

(Subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

The position is subject to financial commitment by the BMBF, starts on 1. July 2019 and is fixed term until 30. June 2022. The period of employment is governed by the Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG). The position offers the chance to obtain further academic qualification (e.g. PhD or habilitation thesis).

The Chair of Circuit Design and Network Theory is a leading chair in the design of radio frequency and millimeter-wave integrated circuits and has received several world records and awards (e.g. the Vodafone Innovation Award).

Within the scope of the project, a novel clock synchronisation technology based on mesh networks is to be validated at millimeter-wave frequencies. Specialized phase-locked loops (PLLs) in a frequency range from 20 – 60 GHz will be designed and multiple instances are to be coupled on-chip and across different chips with different network topologies. The goal is then to validate that all PLLs run at the same center frequency and the phase drift between all the clocks in the system approaches zero. Application scenarios include the synchronization of massive MIMO systems and distributed radars. The project is in cooperation with the Max Planck Institute for the Physics of Complex Systems and the Fraunhofer IZM.

Tasks: Your task will be the development (analysis, simulation, layout, measurement and optimization) of the integrated PLLs in a BiCMOS semiconductor technology. Key components include voltage-controlled oscillators, phase detectors, frequency dividers, controllable delays and interface circuits. You are also responsible for the integration of multiple PLLs on-chip, including the design of the mesh network and the top-level verification of the complete design. Using on-wafer measurements in the radio frequency lab, you will validate the performance parameters of the circuits. You are required to publish scientific papers and attend project meetings and conferences.

Requirements: We are looking for a candidate with very good or good university degree and if applicable a doctorate in electrical engineering, communications technology or information technology with profound knowledge in analog and millimeter-wave circuit design. Skills are especially needed in CAD-based circuit design, layout, simulation and verification. Knowledge in performing radio frequency measurements on-wafer are advantageous. Interest in new technologies, an independent and flexible way of working, communication and teamwork skills, good English as well as innovative and analytical thinking and high commitment are expected.

This job offer provides an excellent platform for interdisciplinary cooperation and the ability to push your personal scientific development. Postdoctorates have the opportunity to lead prestigious research projects.

Applications from women are particularly welcome. The same applies to people with disabilities.
Please send your complete application including copies of your CV and certificates until **28. March 2019** (stamped arrival date of the university central mail service applies) to **TU Dresden, Fakultät Elektrotechnik und Informationstechnik, Institut für Grundlagen der Elektrotechnik und Elektronik, Professur für Schaltungstechnik und Netzwerktheorie, Herrn Prof. Ellinger, Helmholtzstr. 10, 01069 Dresden**. Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.

**Reference to data protection:** Your data protection rights, the purpose for which your data will be processed, as well as further information about data protection is available to you on the website: [https://tu-dresden.de/karriere/datenschutzhinweis](https://tu-dresden.de/karriere/datenschutzhinweis)