



Technische Universität Berlin



Research Assistant - salary grade E13 TV-L Berliner Hochschulen - 1st qualification phase (for a doctorate)

Part-time employment may be possible

Faculty IV - Electrical Engineering and Computer Science, Faculty IV - Institute of Computer Engineering and Microelectronics / Mixed Signal Circuit Design

Reference number: IV-329/25 (starting at the earliest possible / limited for 5 years / closing date for applications 29/08/25)

About us:

Located in the heart of Germany's capital, TU Berlin is one of the country's largest and most renowned technical universities, with around 35,000 students. TU Berlin is a vibrant place for work, research, learning, and living. We offer a variety of family, sports, and professional development programs. As a certified family-friendly university, we place a strong emphasis on maintaining a healthy work-life balance. Become part of TU Berlin – we are shaping the ideas of the future for the benefit of society.

The internationally renowned **Mixed Signal Circuit Design** group at Technische Universität Berlin conducts fundamental and applied research in the field of energy-efficient microelectronic circuits and systems for mobile, wired, and fiber-optic communication.

About the Position

The internationally renowned Chair of **Mixed Signal Circuit Design (MSC)** conducts both fundamental and applied research in the field of energy-efficient microelectronic circuits and systems addressing innovative communication systems.

The Mixed Signal Circuit Design Group is offering one challenging and future-oriented research assistant position. The goal is the development of energy-efficient CMOS and/or SiGe circuits for innovative mobile or optical communication systems with ultra-high data rates. Your research will be part of an ambitious team that combines state-of-the-art approaches from circuit design, optical communication, and AI-based calibration.

Key areas of focus:

- Design of ultra-fast and/or high-precision analog and mixed-signal circuits in CMOS and SiGe technologies
- Monolithic IC Integration
- Scientific and personal exchange with national and international project partners

Your responsibility:

- independent research in the field of integrated digital CMOS circuits
- design, implementation and characterisation of monolithically integrated (RISC-V, ...) microprocessors, custom digital integrated circuits, neuromorphic computing, AI/ML hardware,
- development and analysis of digital and/or mixed-signal circuits, in particular mixed-signal calibration concepts
- execution of the complete IG development cycle: P&R schematic design, simulation, layout and verification of digital and/or mixed-signal circuits
- Characterisation and validation of the integrated systems through measurements on silicon prototypes
- Publication of research results at national and international conferences and in specialist journals
- Supporting the specialist area in teaching

Your profile:

- successfully completed scientific university degree (Master's, Diploma or equivalent) in computer engineering, electrical engineering or physics
- expertise in the design and verification of digital circuits at register transfer level using Verilog, SystemVerilog or VHDL
- experience with FPGA design flow or VLSI design flow for the design of integrated circuits
- experience with logic synthesis and place-and-route tools (e.g. Xilinx Vivado, Synopsys Design Compiler, Synopsys IC Compiler II)
- knowledge of computer design and/or AI/ML hardware architecture
- programming skills (e.g. Python, C, C++, Java, Tel)
- enthusiastic, motivated and team-orientated personality (desirable)
- independent working style desired
- the ability to teach in German and/or in English is required; willingness to acquire the respective missing language skills

What we offer:

- a demanding and highly relevant research project
- close collaboration with other research institutions and industry
- internationally recognized and highly motivated team
- option for remote work (in consultation with your supervisor)
- diverse sports and health programs through the university sports center
- a wide range of professional development opportunities
- a welcoming and collaborative environment with international researchers

How to apply:

Please submit your written application **quoting the reference number**, along with the usual documents (cover letter, CV, academic transcripts, references, etc.) to: preferably by e-mail (one single PDF file, max. 5 MB) to: **sekr@msc.tu-berlin.de**.

By submitting your application via email you consent to having your data electronically processed and saved. Please note that we do not provide a guarantee for the protection of your personal data when submitted as unprotected file. Please find our data protection notice acc. DSGVO (General Data Protection Regulation) at the TU staff department homepage: https://www.abt2-t.tu-berlin.de/menue/themen_a_z/datenschutzerklaerung/.

To ensure equal opportunities between women and men, applications by women with the required qualifications are explicitly desired. Qualified individuals with disabilities will be favored. The TU Berlin values the diversity of its members and is committed to the goals of equal opportunities. Applications from people of all nationalities and with a migration background are very welcome.

The vacancy is also available on the internet at:
<https://www.jobs.tu-berlin.de>

