

TUD Dresden University of Technology, as a University of Excellence, is one of the leading and most dynamic research institutions in the country. Founded in 1828, today it is a globally oriented, regionally anchored top university as it focuses on the grand challenges of the 21st century. It develops innovative solutions for the world's most pressing issues. In research and academic programs, the university unites the natural and engineering sciences with the humanities, social sciences and medicine. This wide range of disciplines is a special feature, facilitating interdisciplinarity and transfer of science to society. As a modern employer, it offers attractive working conditions to all employees in teaching, research, technology and administration. The goal is to promote and develop their individual abilities while empowering everyone to reach their full potential. TUD embodies a university culture that is characterized by cosmopolitanism, mutual appreciation, thriving innovation and active participation. For TUD diversity is an essential feature and a quality criterion of an excellent university. Accordingly, we welcome all applicants who would like to commit themselves, their achievements and productivity to the success of the whole institution.

At the **Faculty of Electrical and Computer Engineering, Institute of Communication Technology**, the **Vodafone Chair of Mobile Communications Systems** offers a project position as

Research Associate (m/f/x)

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

starting at the **earliest possible date**. The position is limited until the end of the project, June 30, 2028. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG).

The **Vodafone Chair of Mobile Communications Systems** offers the opportunity to help shape the development of future mobile communication systems in a prosperous and dynamic environment, to gain valuable project experience and to establish and deepen contacts with innovative companies. Further information on the Vodafone Chair can be found at <https://mns.ifn.et.tu-dresden.de/>. The research at the Vodafone Chair runs within the scope of **DFG, EU and BMFT projects** as well as within the framework of the 6G-life² project.

Tasks: You will conduct research on circuit design for adaptive energy-efficient transmitter architectures within the 6G-life² project, contributing to a paradigm shift toward energy-aware physical-layer design. Building on the Gearbox-PHY concept, your work will center on adaptive and switchable front-end configurations capable of dynamically reducing transmitter power consumption. A focus lies on the foundations of adaptive operation, including the specification of suitable PHY modes and the identification of promising circuit concepts. Your research will combine circuit design, laboratory measurements, and the evaluation of measurement results in a communication theoretical framework. You will design i) separate amplifier blocks optimized for distinct operating modes and ii) an amplifier block that unifies multiple operation modes within a single front end. Both the separate blocks and the adaptive block will be implemented, taped out, and integrated into a demonstrator platform, where you will evaluate energy consumption, switching behavior, and transmission quality under realistic conditions. The results will be benchmarked against classical transmitter architectures and disseminated through publications in leading international conferences and journals. Through this work, you will contribute to cutting-edge research on energy-adaptive PHY design and collaborate closely with leading national and international partners.

Requirements:

- a very good university degree in nanoelectronic systems, electrical engineering or similar
- profound knowledge of high-frequency circuit design, preferably amplifier design, circuit theory, wireless communications, communications engineering
- excellent experience in circuit design
- experience in modelling and simulation of communication systems
- outstanding academic performance in previous studies
- at least 1 year of full-time circuit design research experience and at least one circuit level tapeout
- independent, goal- and solution-oriented work attitude
- inter- and multidisciplinary thinking
- an integrative and cooperative personality with good communication and social skills
- advanced in English – written and oral.

TUD strives to employ more women in academia and research. We therefore expressly encourage women to apply. The University is a certified family-friendly university. We welcome applications from candidates with disabilities. If

multiple candidates prove to be equally qualified, those with disabilities or with equivalent status pursuant to the German Social Code IX (SGB IX) will receive priority for employment.

Please submit your detailed application with the usual documents by **January 5, 2026** (stamped arrival date of the university central mail service or the time stamp on the email server of TUD applies), preferably by sending it as a single pdf file to jobs@ifn.et.tu-dresden.de (Please note: We are currently not able to receive electronically signed and encrypted data) stating the **Job-ID w25-328** or to:

TU Dresden, Vodafone Chair of Mobile Communications Systems, Prof. Gerhard Fettweis, Helmholtzstr. 10, 01069 Dresden, Germany.

Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.

TUD is a founding partner in the DRESDEN-
concept alliance.

DRESDEN
concept



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>.