Technische Universität Dresden (TUD), 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.

The Faculty of Electrical and Computer Engineering, Institute of Circuits and Systems invites applications for the

**Chair (W3) of Fundamentals of Electrical Engineering and Electron Devices**

to be filled at the **earliest possible date.**

You (m/f/x) will represent the field of appointment in research and teaching. In close cooperation with all three faculties of the School of Engineering Sciences, you will teach courses within the degree programs of electrical engineering, mechatronics, regenerative energy systems, mechanical engineering, industrial engineering, and biomedical engineering.

We are looking for a person with excellent teaching skills who is responsible for lectures, seminars and practical courses in German and English, who can motivate and inspire our students and who is interested in the future-oriented development of academic education.

You are a scientific expert with research experience in several of the following areas of fundamental electrical and electronic engineering:

- Compact modeling and numerical investigation of devices fabricated using incumbent and emerging semiconductor technologies, particularly involving advanced semiconductor devices like nanowire, memristive and memcapacitive components etc. and employing groups IV and III-V semiconductors
- Device design optimization toward the development of new generations of semiconductor technologies
- Development of nonlinear circuit- and system-theoretic methods for the design and optimization of future circuits and systems, leveraging the unique capabilities of emerging nanodevices to extend the functionalities of state-of-the-art CMOS electronics
- Advanced electrical characterization of novel devices, covering DC and quasi-DC dynamics, small signal and large-signal nonlinear operation over a wide temperature range, including cryogenic operation
- Design of circuit building blocks based on advanced semiconductor devices and optional the fabrication of test devices for evaluating process technology performance, compact model verification and special applications such as generation of high RF power, operation at extremely low power etc.
• Research on novel methods and special test structures for model and material parameter determination from experimental data
• Providing insight into the physical limits of various semiconductor technologies on the basis of device and circuit performance evaluation using models and optionally own test devices.

We expect you to demonstrate a successful scientific activity in the field of appointment with strong future potential, and high third-party research grant acquisition rate. Experience in teaching subjects from the electrical engineering curricula is required. In case you are interested in fabricating your own test structures and test devices, you will have the opportunity to use the TU Dresden clean room lab.

We ask for a vibrant, committed, conscientious researcher, who will shape the contemporary and future profile of the faculty through relevant research experience. Proficiency in German is not a prerequisite for appointment. However, we expect the successful candidate to acquire sufficient language skills in German to conduct teaching of mandatory courses and administrative tasks within two years of appointment. Candidates who hold a TU Dresden PhD (or equivalent) must have worked at least two years in a R&D position outside of TU Dresden to be eligible for the appointment. Applicants must meet the employment qualification requirements of § 58 of the Autonomy of Institutions of Higher Education in the Free State of Saxony (SächsHSFG) Act.

For further questions, please contact the Dean of the Faculty of Electrical and Computer Engineering, Prof. Dr.-Ing. Karlheinz Bock, Tel. +49 351 463-39652, email: dekanat.et@tu-dresden.de, or the head of the appointment committee, Prof. Dr. sc. techn. Frank Ellinger, telephone number: +49 351 463-38735, e-mail: frank.ellinger@tu-dresden.de.

TU Dresden strives to employ more women in academia and research. We therefore expressly encourage women to apply. The University is a certified family-friendly university and offers a Dual Career Service. 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. If you have any questions about these topics, please contact the Equal Opportunities Officer of the Faculty of Electrical and Computer Engineering (Ms. Lena Elspaß, tel. +49 351 463-40517), or the Representative of Employees with Disabilities (Mr. Roberto Lemmrich, telephone number: +49 351 463-33175).

Please submit your application, including a CV in tabular form, a description of your scientific career, a list of your scientific publications, and a list of courses taught, results of their evaluations (preferably of the last three years) as well as a copy of the certificate of your highest academic degree, preferably in electronic form (in one PDF file) via the TU Dresden SecureMail Portal https://securemail.tu-dresden.de by sending it to dekanat.et@tu-dresden.de or as hard copy to: TU Dresden, Fakultät Elektrotechnik und Informationstechnik, Dekan, Herrn Prof. Dr.-Ing. Karlheinz Bock, Helmholtzstr. 10, 01069 Dresden, Germany by August 3, 2023 (stamped arrival date of the university central mail service applies).

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.