

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 **Deutsche Telekom Chair of Communication Networks** offers, subject to the availability of resources, 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 **January 1, 2027**. The position is limited until December 31, 2029. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG).

#### **Tasks:**

- developing mathematical and information-theoretic models for synthetic molecular communication systems
- analyzing and quantifying information transfer performance in noisy, diffusion-based molecular communication channels, focusing on metrics such as signal-to-noise ratio (SNR), channel capacity, and error probability.
- designing and evaluating signal digitization and thresholding mechanisms for adaptive communication
- collaborating with experimental teams to validate theoretical models or further advance the testbed setups
- publishing research findings in journals and present results at international conferences
- contributing to the project-based supervision of student assistants and the preparation of project reports

#### **Requirements:**

- university degree (Diploma/Master) in Mathematics, Information Theory, Communication Theory, Electrical Engineering, Physics, or a related field.
- strong theoretical background in one or more of the following areas:
  - Information theory and communication theory.
  - Stochastic processes and mathematical modeling.
  - Signal processing and system theory.
- experience with mathematical tools and programming languages such as MATLAB, Python, or similar for simulation and analysis
- interest in interdisciplinary research at the interface of mathematics, biology, and engineering
- excellent analytical and problem-solving skills, with the ability to work independently and collaboratively
- strong communication skills in English (both written and oral)

#### **We offer:**

- the opportunity for engaging and independent work within a flat hierarchy, in an open-minded team and supportive atmosphere
- flexible working hours
- 30 days of vacation per year (based on a 5-day workweek)

- extensive opportunities for professional development and continuing education
- health care and sports programs offered by TUD
- a discounted job ticket (also available as a Deutschlandticket)
- participation in the supplementary pension scheme for employees in the public sector via VBL (Federal and State Government Employees Retirement Fund)

TUD strives to employ more women in academia and research. We therefore expressly encourage women to apply. The university is a 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.

**Application:** Please submit your detailed application with the usual documents by **September 23, 2026** (stamped arrival date of the university central mail service or the time stamp on the email server of TUD applies), preferably via the TUD SecureMail Portal <https://securemail.tu-dresden.de> by sending it as a single pdf file to [pit.hofmann@tu-dresden.de](mailto:pit.hofmann@tu-dresden.de) or to:

**TU Dresden, Deutsche Telekom Chair of Communication Networks, Dr. Pit Hofmann,  
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.




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**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>.