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 Center for Advancing Electronics Dresden (cfaed) offers a position as

**Research Associate (m/f/x)**

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

starting as soon as possible. The position comprises 65% of the fulltime weekly hours. The position is limited to three years. 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 (usually PhD).

**Position:** Recently, the research on charge storage-based memory effects in organic devices has ramped up significantly. In some of these cases, the memory can be written by light but almost all such devices are read out or erased electrically. We have recently developed an OLED-based memory, dubbed pinMOS, which can be written/erased electrically and read out optically. With this research we plan on extending the functionality of such memory to be fully manipulable both electrically and optically by re-designing the layer structure of the original device.

**Tasks:**

- explore different photonically active layer substitutes, fabrication conditions, and parameters in order to produce optically addressable memory structures
- optimize the device layout for electro-optical functionality, data retention, storage density, etc.
- fabricate organic multilayer devices
- characterize the resulting devices both morphologically and electrically, the latter including I-V, C-V, C-f, and optical measurements.

**Requirements:**

- university degree in electrical engineering or physics
- strong knowledge in device physics/semiconductor physics
- previous experience in fabrication of organic or inorganic thin film electronic devices.
- Ideally also prior experience with thin film deposition from vacuum and/or the fabrication of electronic devices such as transistors, light emitting diodes, solar cells, photodiodes, etc.

**What we offer:** You will join a team of enthusiastic scientists who pursue creatively their individual research agenda inspired by the cluster's innovative approach and support. Your PhD research will be fostered by the cfaed philosophy to promote aspiring researchers, which includes:

- access to state-of-the-art research of leading academic institutes
- international doctoral program
- promotion of gender equality and family-friendly work environment.
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 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.

Your application (in English only) should include: motivation letter, CV, copy of degree certificate, transcript of grades and proof of English language skills. Please submit your comprehensive application by January 3, 2024 (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-document to recruiting.cfaed@tu-dresden.de quoting the reference number PhD2311_pinMOS in the subject header or to: TU Dresden, cfaed - 2301404, z. Hd. Anne Schulze, 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.

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.