The Center for Advancing Electronics Dresden (cfaed) offers a fixed-term position as

**Research Associate / Postdoc**

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

**Research area:** Organic synthesis and organic electronics: material synthesis, processing, and device fabrication

**Project Title:** Self-assembled monolayers (SAMs) with addressable dipole moments

**cfaed Investigators:** Prof. Stefan Mannsfeld (cfaed), Dr. Franziska Lissel (IPF)

**Terms:** starting as soon as possible for 18 months with the possibility of extension for 6 months. The period of employment is governed by the Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz – WissZeitVG).

**Position and Requirements**

The precise manipulation of a solid state device's electrical output is a fundamental challenge in organic electronics and nanotechnology. By introducing stimuli responsive units into the device layout, multifunctional devices might be accessible, e.g. photo-responsive memories or logic circuits.

This fully funded Postdoc project is part of a broader research effort to affect the electronic properties of organic semiconductor devices and control them with an external stimulus, and includes organic synthesis as well as device fabrication. From the side of organic synthesis, photoaddressable molecules will be synthesised, and characterised in solution and as self-assembled monolayers (SAMs). The SAMs will be used to affect and control the behaviour of electrically active devices, which will be fabricated and investigated.

The successful candidate will:

- work in a multidisciplinary environment with access to state-of-the-art equipment, and be part of a team of several other PhD candidates and postdocs
- synthesise and characterise different (photo) addressable switches
- fabricate and characterise self-assembled monolayers of the obtained switches
- fabricate organic single- and multilayer devices, e.g. by thermal evaporation of materials in vacuum and by solution coating processes of small molecules and polymers
- characterise the resulting devices both morphologically and electrically, the latter including I-V, C-V, C-f, and optical measurements
- explore the switching of the fabricated devices.

We aim at attracting the best talent in the respective research fields and look for:

- university and an Ph.D. degree in chemistry, materials science or a related field, with a focus on organic synthesis
• hands-on experience in multi-step organic synthesis, preferably of (electronically) functional molecules, and common characterisation methods (NMR, CV, etc)
• ideally also prior experience SAMs formation and characterisation, and/or photo-addressable molecules
• very good interpersonal and communication skills; in particular, the ability to effectively work in collaborative research efforts,
• an independent, target- and solution-driven work attitude,
• inter- and multidisciplinary thinking,
• strong motivation and interest to join one of the most ambitious interdisciplinary research clusters,
• fluency in English - written and oral
• prior knowledge in device physics/semiconductor physics is desirable.

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: The organic synthesis will take place under the guidance of Dr. Franziska Lissel, and the device work with Prof. Dr. Stefan Mannsfeld. Your research will be fostered by the cfaed philosophy to promote young researchers which includes:
• access to state-of-the-art research of leading academic institutes.
• promotion of gender equality and family-friendly work environment.

Applications from women are particularly welcome. The same applies to persons with disabilities.

Application Procedure

Your application (in English only) should include: motivation letter, CV, copy of degree certificate, transcript of grades (i.e. the official list of coursework including your grades) and proof of English language skills. Please submit your complete application preferably via the TU Dresden Secure-Mail Portal https://securemail.tu-dresden.de by sending it as a single pdf-document quoting the reference number PD2009_OrgSynth in the subject header to recruiting.cfaed@tu-dresden.de or by mail to TU Dresden, cfaed, z. H. Anne Schulze, Helmholtzstr. 10, 01069 Dresden, Germany. The closing date for applications is 06.10.2020 (stamped arrival date of the university central mail service applies). 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

About cfaed

cfaed is a Central Academic Unit at Technische Universität Dresden. It brings together 300 researchers from the university and 10 other research institutes in the areas of Electrical and Computer Engineering, Computer Science, Materials Science, Physics, Chemistry, Biology, and Mathematics. cfaed addresses the advancement of electronic information processing systems through exploring new technologies which overcome the limits of today’s predominant CMOS technology. For more information please see www.cfaed.tu-dresden.de
About TU Dresden

The TU Dresden is among the top universities in Germany and Europe and one of the eleven German universities that were identified as an ‘elite university’ in June 2012. As a modern full-status university with 18 faculties it offers a wide academic range making it one of a very few in Germany.