The **Cluster of Excellence 'Center for Advancing Electronics Dresden' (cfaed)** offers 3 positions as

Research Fellow

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

Research area: **Robust control in noisy biological systems**

cfaed Investigators: Dr. Benjamin Friedrich

cfaed research path: Biological Systems Path

Terms: The positions start **as soon as possible** and are fixed-term until the end of the project the 31.10.2017. Subject to the continued third-party funding of the cluster after 2017, the extension of the contracts may be possible. The period of employment is governed by § 2 Fixed-Term Research Contracts Act (Wissenschaftszeitvertragsgesetz – WissZeitVG). The positions offer the chance to obtain further academic qualification (e.g. PhD/habilitation).

Position and Requirements

The mission of the new research group "Biological Algorithms" headed by Benjamin Friedrich is to understand robust control in noisy biological systems. We identify principles of feedback control in different biological systems, ranging from motility control in single cells to the self-organization of complex tissues. We pursue a Quantitative Biological Physics approach that combines dynamical systems theory, statistical physics, and image/data analysis. More information on current research can be found at www.pks.mpg.de/~ben. We are hiring for 2 specific areas:

1. Motility control: We study how noisy sensory information controls biological motility and dynamic decision making, e.g. during sperm navigation to the egg.
2. Pattern control: We study elementary rules of self-organized pattern formation during self-repair and adaptation, e.g. of load-balancing transport networks in the liver.

Additionally, we will explore possible applications of biological control designs in advanced electronics applications in tight collaboration with the other paths of the cfaed.

We search for highly motivated and talented applicants to work at the interface of physics and biology with a twist towards computer science. We look for:

Postdoc candidates: university degree, PhD and an outstanding performance in Biological Physics, Mathematical Biology, or related field.

PhD candidates: excellent university Master's degree (or equivalent) in these fields; strong analytic skills, creativity, efficient problem solving skills; an aptitude for data-driven science and numeric computing (e.g. Matlab, phython, C); high motivation to work on inspiring research problems at the interface of physics, biology and computer science; excellent communication skills; especially in cross-disciplinary communication; an independent, result-driven work attitude; fluency in English – oral and written.

What we offer

Dresden unites excellence in information and life sciences. We enjoy the close proximity of collaboration partners at the Max Planck Institute of Molecular Cell Biology and Genetics, the

Biotechnology Center, and the new Center for Systems Biology Dresden, which allows rapid iteration loops between theory and experiment. Dresden is also a great place to live.
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 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; for PhD candidates: individual supervision by a Thesis Advisory Committee; possibility to earn (seed) grants of up to € 10.000; promotion of gender equality and family-friendly work environment.
For informal enquiries, please contact Dr. Benjamin Friedrich at benjamin.friedrich@mailbox.tu-dresden.de.
Applications from women are particularly welcome. The same applies to people with disabilities.

Application Procedure

Your application **(in English only)** should include: a motivation letter, your CV with publication list, the names and contact details of two references, copy of degree certificate, and transcript of grades (i.e. the official list of coursework including your grades). Post-doc candidates: please include also copies of 1-2 original publications and a link to your PhD thesis. Complete applications should be submitted preferably by e-mail as a single PDF-document quoting the reference number **PhD/PD_BA** in the subject header to **recruiting.cfaed@tu-dresden.de** (Please note: We are currently not able to receive electronically signed and encrypted data.) or alternatively by post to: **TU Dresden, cfaed, Frau Dr. P. Grünberg, 01062 Dresden, Germany**. The closing date for applications is **01.03.2016** (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.

About cfaed

cfaed is a cluster of excellence within the German Excellence Initiative. As a central scientific unit of TU 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 14 departments it offers a wide academic range making it one of a very few in Germany.