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## Dear Readers,

With three Clusters of Excellence approved, TU Dresden is still in the running to receive Excellence funding.

Intense work is being done to apply the finishing touches to our **proposal for the "University of Excellence" title**, because the application must be submitted to the German Science Council by 12 noon **on 10 December 2018** at the very latest – "High Noon" in the Excellence Competition!

At an **information session on 11 December 2018** (from 1 p.m. to 3 p.m., Festsaal Dülferstraße), Rector Prof. Hans Müller-Steinhagen will explain what is next in line for TUD and which milestones still have to be reached. The event is open to all members of TUD, and you do not need to register.

## "Green Talents" Visit TUD

The German Federal Ministry of Education and Research (BMBF) has been presenting the annual **Green Talent Award** since 2009. The award honours young international scientists whose ideas and research on **sustainability** make the world a little greener.



The "Green Talents" 2018 (Photo: Angela Böhm)

While touring the eastern part of Germany, this year's award winners gained insight into various institutions of the German research and innovation landscape, where they were introduced to selected projects related to the subject of sustainability.

**On 15 October 2018**, TU Dresden was the first port of call of this two-week “knowledge forum”. The Green Talents were welcomed by Rector Prof. Hans Müller-Steinhagen, who introduced them to programmes for the promotion of junior researchers, such as the [Young Investigators](#), and to service facilities such as the [Graduate Academy](#) and the [Welcome Center](#).

Afterwards, they met with professors and scientists of TU Dresden to learn about current research on **alternative energy storage, water resource management, environmental economics** and **carbon concrete**, to exchange ideas and to establish preliminary contacts.



The “Green Talents” in the [Otto Mohr Laboratory](#) of the Institute of Concrete Structures (Photo: Angela Böhm)

Next year, the Green Talents will then be able to complete a three-month research stay at a German research institution, a company or a university of their choice, fully financed by the BMBF.

## Perspectives on Materiality in Art & Design

On **22 November 2018**, [DRESDEN-concept](#) will launch its fourth “[Scientific Area Network](#)” (SAN) in the lecture hall of the Hochschule für Bildende Künste Dresden (*Academy of Fine Arts* – Güntzstraße 34). From 5 p.m. to 8 p.m., it will be possible to discuss “Perspectives on Materiality in Art & Design”.

How do modern analytical methods help in the **digitisation of art objects** and what significance do materials have in the current discourse on **restoration and conservation** as well as for design and art? Scientists and junior researchers from the [DRESDEN-concept partners](#) will have the opportunity to give short lectures on their research results regarding these or similar questions, and to exchange ideas over snacks and drinks in the subsequent informal networking session.

Research projects and ideas can be followed up on at additional events and in working groups. The event will be held primarily in English.

Listeners and discussants can register **at any time** at:

[www.ddcmaterial.eventbrite.de](http://www.ddcmaterial.eventbrite.de).

Registrations for short presentations are still possible until **8 November** at: [robert.fischer2@tu-dresden.de](mailto:robert.fischer2@tu-dresden.de)

## Novel Metal-Organic Frameworks Developed at cfaed

For the first time, a group of scientists has observed band-like electron transport in a conjugated two-dimensional (2D) metal-organic framework film. This semiconducting behaviour, together with its cost-effective production, **opens the path for employing metal-organic frameworks as electroactive materials in electronic devices**.

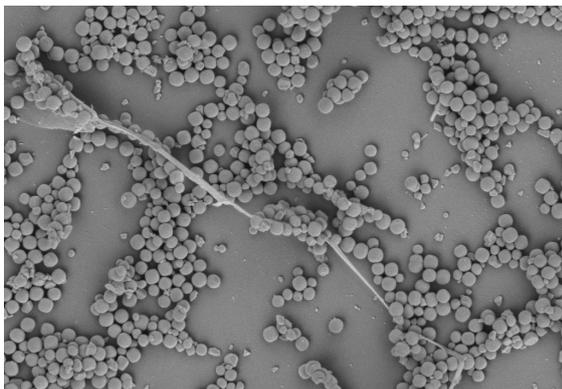
Inorganic semiconductors such as silicon, germanium or gallium arsenide are at the core of modern electronics, but they are very expensive to produce. Organic-based semiconductors, e.g. polymers which can be processed at room temperatures, are a low-cost alternative.

The scientists from the [Chair for Molecular Functional Materials](#) (Prof. Xinliang Feng) at the [Center for Advancing Electronics Dresden \(cfaed\)](#) have now developed a novel

metal-organic framework (MOF) material, an organic graphene-like two-dimensional (2D) material made at room temperature that behaves electrically as inorganic semiconductors.

Within the framework of a joint project involving several European research institutions, it has now also been possible to characterise the new material. The results were recently published in "Nature Materials".

### "Microswimmer" Lecture Series Has Started



Microswimmer up close: sperm with iron oxide particles (Photo: Veronika Magdanz/Dagmar Voigt)

An international and interdisciplinary lecture series on "Microswimmers" was launched in September 2018. Microswimmers are microobjects that can actively move on a micro scale.

The lecture series brings together theory and application issues and combines four disciplines of the life sciences, and as such four of the five TUD School of Science faculties: Biology, Chemistry, Mathematics and Physics.

This lecture series comprises 14 lectures from international speakers plus 14 reading seminars. It is co-organized by Dr. Benjamin M. Friedrich, research group leader of the "Biological Algorithms Group" at the Center for Advancing Electronics Dresden (cfaed).

The series will run for a year until July 2019 and is supported by TUD's Institutional Strategy (*Zukunftskonzept*) as well as by the cfaed.

### DFG Funds Innovative Eye Research in Dresden

Within the Priority Programme 2127 "Gene and Cell-based Therapies to Counteract Neuroretinal Degeneration", the German Research Foundation (DFG) is providing funding of more than one million euros for three years to four research groups at the Center for Regenerative Therapies Dresden (CRTD) and the Biotechnology Center (BIOTEC), both part of the Center for Molecular and Cellular Bioengineering (CMCB) of TU Dresden, as well as at the German Center for Neurodegenerative Diseases (DZNE) in Dresden.

### How Can We Regulate Cell Survival?

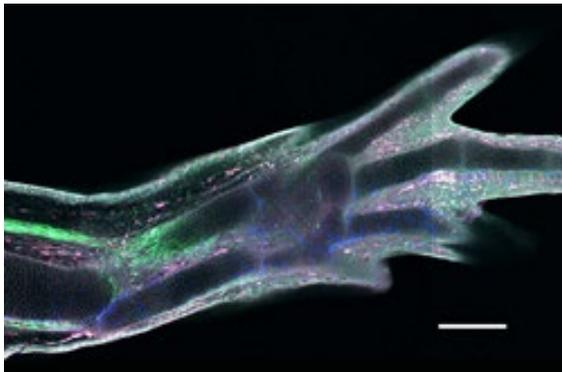
An interdisciplinary and international research group led by Dr. Volker Buskamp from the Center for Regenerative Therapies Dresden (CRTD) has decoded the regulatory impact on neuronal survival of a small non-coding RNA molecule, so-called miRNA, at the highest resolution to date.

This deciphering of gene regulation primes applications for **strengthening neurons in order to protect them from neurodegenerative diseases**. The extensive systems biology methods used here could become a new standard for the way miRNAs are researched.

### Regenerative Properties of Connective Tissue in Salamanders

The cells that enable salamanders to regrow lost limbs have long been debated in scientific circles. An international team of researchers, with the participation of the Center for Regenerative Therapies Dresden (CRTD) has now been able to show that the

regeneration of legs is based on connective tissue cells that can develop stem cell-like properties as soon as an injury is present.



Regenerated extremity in Mexican axolotl salamander (Photo: IMP/W. Masselink)

The research results have been published in the specialist journal "Science".

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