

INTRODUCTION

DEAR READER,

with around 8,200 students, Brandenburg University of Technology Cottbus-Senftenberg is the second largest university in the federal state of Brandenburg, and its only technical university.



We are a research-focused university that also offers elements usually found at a university of applied sciences. Where research and technology transfer are concerned, we cooperate with other universities and non-university based research institutions, regional small and medium-sized businesses and also major, international corporations.

BTU Cottbus-Senftenberg sees itself as a technical university that is committed to knowledge and technology transfer. Our university has initiated many measures aimed at keeping well-qualified people in the region. We are also a start-up focused university. Start-ups generate new impulses for the regional economy, and inspire modern forms of cooperation.

This flyer explains our research areas in more detail. It also includes details of who to contact. You can also find us online at www.b-tu.de/en.

Jörg Steinbach

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Hon.-Prof. (ECUST, CN)
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RESEARCH

OUR PROFILE

BTU Cottbus-Senftenberg is making some changes in order to establish an outstanding profile in four research areas:

- Smart Regions and Heritage,
- Energy Efficiency and Sustainability,
- Biotechnology, Environment and Health
- Cognitive and Dependable Cyber-Physical Systems.

We have conducted intensive and successful research in these fields for many years, and now intend to build on our past achievements. Our strategic appointment policy will be aimed at strengthening the various specialist areas to ensure that we can successfully accomplish our aims in a very short time. Our long-term goals are Deutsche Forschungsgemeinschaft (German Research Foundation membership) and also an annual third party funding volume of 60 million euros.

www.b-tu.de/en/research

SMART REGIONS AND HERITAGE

In the »Smart Regions and Heritage« research field, BTU is addressing issues that call for comprehensive solution strategies in response to changes in towns, regions and metropolitan cities. These include structural transformation processes triggered by various different factors, for instance the demographic change, which involves innovative concepts to convert buildings back to their original state, and the adaptation of the transport and supply infrastructure. »Heritage« refers to research that encompasses and links the regional cultural and technical heritage with international world heritage sites and related issues.

Cities, transport, and the local infrastructure are just some of the aspects examined in the »Smart Regions and Heritage« research field – a prime example of this is Bahnhofstrasse in Cottbus.



ENERGY EFFICIENCY AND SUSTAINABILITY



The photovoltaic system on the roof of BTU's Forschungs- und Materialprüfanstalt (research and material assessment centre) looks like a mushroom – it belongs to the eSOLCar project, which proved that electric cars may be suitable for short-term storage.

The research area »Energy Efficiency and Sustainability« investigates measures for increasing the efficiency of conventional power stations and complex systems, for example, as well as measures that might make these more flexible. This includes the development of energy storage concepts, electric transport, and also the stability of the power networks in the context of the energy shift. Efficient and environmentally compatible combustion engines, gas turbines, aircraft propulsion and micro gas turbine engines complete this research area. Other issues addressed also include new, optimised types of building with a focus on energy saving construction and design. Another key issue in this research area is the automation and digitisation of industrial processes addressed by the »Innovation Center Modern Industry Brandenburg«, for example.

BIOTECHNOLOGY, ENVIRONMENT AND HEALTH

In the »Biotechnology, Environment and Health« research area, the work focuses on the increasing shortage of resources, on environmental and climatic changes, and also on the return of previously eradicated infectious diseases and the negative impact of the demographic change on the population's health. This field involves the investigation of potential solutions for the medical, environmental and healthcare challenges resulting from an ageing population, for example.



Production of microalgae – combining environmental research focused on carbon retention with the production of active ingredients for biological compounds.

COGNITIVE AND CYBER-PHYSICAL SYSTEMS



Internet access – a symbol for the global dependence on information, reliable technical systems and internet security.

The fourth research area, »Cognitive and Dependable Cyber-Physical Systems, harbours a huge potential for innovations and is therefore extremely important for the economy and our society. Computers, especially in the form of so-called embedded systems, are now omnipresent in many areas of modern life. The focus is not only on basic technologies for embedded and cyber-physical systems but also on other research fields such as ensuring their accessibility, predictability, security and reliability. This research area also addresses the way information and communication systems interact with their surroundings and with people. The research aims to investigate cognitive abilities and their automated realisation in technical systems.

BTU SUPPORTS START-UPS

In the latest Stifterverband rankings, BTU Cottbus-Senftenberg achieved an excellent second place among the medium-sized universities in Germany: at BTU, the students, staff and alumni are highly aware of the topic of start-ups, and enjoy praiseworthy support. Numerous successful start-ups confirm that this top position is well-deserved. The BTU Cottbus-Senftenberg Start-up Service is an excellent first port of call and advisory service for anyone thinking of starting a commercial venture. It offers the following support, or will get potential start-ups in contact with the respective agencies:

- Initial advice for potential founders or anyone thinking of starting a commercial venture,
- Seminars offering the necessary training,
- External coaching with a budget of up to € 3,500 per person as a non-returnable, one-off start-up grant for consultancy services,
- Help with the application for EXIST start-up grants amounting to € 1,000 per month for a year for students, and € 2,500 a month for graduates, as well as further financing sources (e.g. EXIST research transfer, High-Tech Gründerfonds (HTGF) and venture capital).



START-UP SERVICE CONTACT

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KNOWLEDGE AND TECHNOLOGY TRANSFER

As a central contact point the Technology and Innovation Department of the BTU Cottbus-Senftenberg offers companies and institutions as well as researchers the following services:

- Supporting companies and researchers with regard to all knowledge and technology transfer related questions (e.g. by visiting companies on site, organising information events)
- Putting researchers in contact with companies, and helping them to maintain this contact
- Providing information on the funding options for the financing of collaborative commercial and scientific research projects
- Initiating and accompanying research projects and collaborations with commercial enterprises, including help with applications for government grants at a regional and national level.
- Advice on patents and the exploitation of copyrights
- Collaborations with clusters, networks, chambers and associations, as well as local communities
- Regional, national and international presentation of research results and collaborative projects, for instance at events and trade



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RESEARCH, KNOWLEDGE
AND TECHNOLOGY TRANSFER

