

# Science and Research



Our Faculty provides the basis for 27 research groups (see <http://www.fe.i.vsb.cz/en/research-and-development/research-groups/>) which cover many aspects of electrical power engineering, electronic systems, and information technologies:

## ● Electrical Power Engineering

- Electric machines and devices
- Transmission and distribution of electrical power
- Power generation and energy applied
- Systems of the alternative energy sources

## ● Electrical and Electronic Engineering

- Electric railways, signaling and lighting systems; reliability of electrical equipment
- Electromagnetic interference/compatibility
- Voltage quality and effectiveness of mechatronic systems and components
- Modern design of electrical equipment, safety and risk problems of electric and magnetic fields
- Electrical drives, analog and microcomputer control technique
- Power semiconductor systems, automotive electronic and diagnostic
- Measurement, testing and sensors
- Industrial automation and computer control systems

## ● Telecommunications


- Electronics applied in telecommunications
- Mobile and radio communications
- Telecommunications and multimedia


## ● Optics

- Optical communications and optoelectronics


To explore collaboration possibilities please contact us:

**Faculty of Electrical Engineering and Computer Science**  
VŠB - Technical University of Ostrava

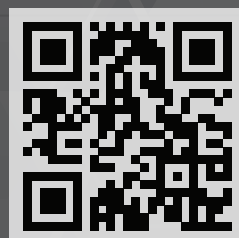
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## ● Engineering, Biomedical

Biomedical engineering

## ● Computer Science

Data analysis and processing  
Database systems  
Computer vision  
Unconventional algorithms and computing  
Computer systems and networks  
Software engineering  
Theoretical computer science

## ● Applied Mathematics

Applied probability and statistics  
Mathematical analysis and discrete mathematics  
Numerical analysis and HPC (High Performance Computing)

The research groups cover especially these research topics:

Smart Cities  
Electronic Systems  
Digital Factory - Industry 4.0  
Bioinformatics  
Internet of Things  
Mathematical Modelling, Simulations, and Optimization

## Projects & Industry Cooperation

Several international projects, e.g.:

7FP EU project (INDECT) in the area of big data and security,  
1.1.2009 - 31.12.2013, <http://www.indect-project.eu/>

H2020 EU project (PACMAN - Prognostics And Computer Aided Maintenance),  
1.10.2016 - 30.9.2020, Coordinator: Honeywell International Inc.

40 projects funded by national grant agencies per year (approx. 2 mil. €)

20 contract research projects per year (approx. 0.5 mil. €),

## Industrial partners


Arcadis Geotechnika a.s., BIKE FUN International s.r.o., CEPS, a.s., CEZ, a.s., Cofely, a.s., Continental Automotive Czech Republic s.r.o., ModemTec s.r.o., Skoda Electric a.s.,


Vítkovice Power Engineering a.s., Continental Automotive Czech Republic, Fraunhofer Institut,

Vítkovice UAM a.s., Arcadis CZ, Strix Chomutov, ABB, ČEZ, E.ON, Siemens and Veolia


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