



CTU

**CZECH TECHNICAL
UNIVERSITY
IN PRAGUE**

RESEARCH FACILITIES



The Czech Technical University (CTU) is a leading technical research university with a long tradition, located in the picturesque city of Prague.

Czech Technical University (CTU) in Prague is one of the largest research institutions in Central Europe, located at the heart of the Prague academic/ research cluster. Besides traditional engineering education at undergraduate, graduate and doctoral level, CTU prioritizes a long-term and pivotal role for basic and applied research. Research is carried out at all eight faculties of the university (a faculty being the main academic organizational unit of the university), and also at the university institutes.

CTU IN NUMBERS

- ➔ 17,229 students
- ➔ 3,825 foreign students in accredited study programmes: 2,043 in bachelor programmes, 827 in master's programmes, 242 in PhD programmes, 713 visiting students
- ➔ 542 outgoing exchange students and 1,132 incoming exchange students
- ➔ 188 accredited study programmes delivered in Czech language, and 44 programmes delivered in a foreign language
- ➔ 21 Joint/Double/Multiple Degree study programmes in collaboration with universities abroad
- ➔ 370 lifelong learning courses
- ➔ 1,591 academic staff, including 205 professors
- ➔ 787 non-academic staff

- ➔ QS World University Rankings 2020
 - ➔ Overall rank 432
 - ➔ Emerging Europe and Central Asia: 12
 - ➔ 101–150 in Physics & Astronomy
 - ➔ In Civil & Structural Engineering 151-200
 - ➔ In Physics and Astronomics 201-250
 - ➔ Electrical and Electronic Engineering 201-250
 - ➔ Engineering – Mechanical 201-250
 - ➔ Physics and Astronomy 201-250
 - ➔ Natural Sciences - 271
 - ➔ Computer Science and Information Systems - 251-300



Testing room for aircraft engines

HR AWARD

In 2017, the Czech Technical University in Prague (CTU) endorsed the principles enshrined in **The European Charter for Researchers** and the Code of Conduct for the Recruitment of Researchers. On September 10, 2019, CTU received the HR Excellence in Research Award from the European Commission, and an initial implementation phase of two years is in progress. The HR Award is awarded by the European Commission to research institutions that implement a personnel strategy based on the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers. This is a recommendation of the European Commission that obliges research institutions to create welcoming working conditions, professional development opportunities and transparent recruitment procedures.



HR EXCELLENCE IN RESEARCH

The project receives support from the operation fund OP VVV "Development of capacity for strategic management of research at CTU in Prague - CZ.02.2.69/0.0/0.0/16_028/0006215



A woman with blonde hair, wearing a light-colored lab coat, is focused on adjusting a complex, multi-tiered mechanical assembly. The device consists of several cylindrical and rectangular metal components, some with screws and a central circular opening. She is using her hands to fine-tune the assembly, which is mounted on a base. The background is slightly blurred, showing other laboratory equipment and a clean, professional environment.

CTU RESEARCH FACILITIES

FACULTY OF CIVIL ENGINEERING CENTRE FOR EFFECTIVE AND SUSTAINABLE TRANSPORT INFRASTRUCTURE (CESTI)

Focused on technical innovations aimed at eliminating deficiencies in today's transport infrastructure.

 www.cesti.cz

➔ **Project Manager:**
Prof. Alena Kohoutková
akohout@fsv.cvut.cz

EXAMPLES OF RESEARCH

"Josef" Underground Educational and Research Facility

➔ Dr. Jiří Štástka jiri.stastka@fsv.cvut.cz

Experimental Centre

➔ Prof. Petr Konvalinka petr.konvalinka@fsv.cvut.cz

Center for Nanotechnology in Civil Engineering

➔ Assoc. prof. Jiří Němeček jiri.nemecek@fsv.cvut.cz

Water Management Experimental Centre

➔ Dr. Milan Zukal zukal@fsv.cvut.cz

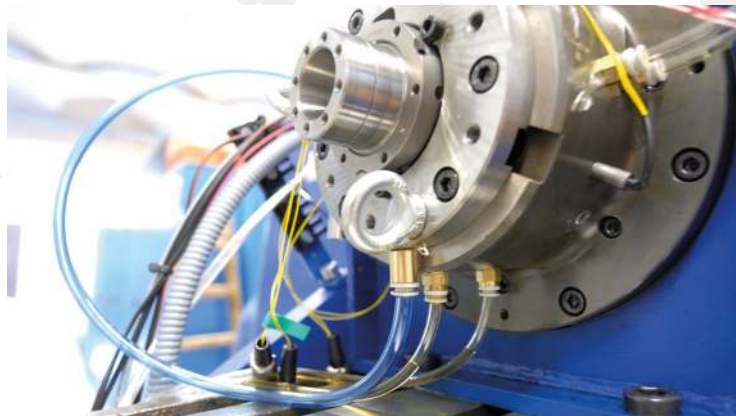


FACULTY OF MECHANICAL ENGINEERING RESEARCH CENTER OF MANUFACTURING TECHNOLOGY

Research and development of machine tools, robots and production machines, including manufacturing technology.


 www.rcmt.cvut.cz

 **Principal researcher:**
Dr. Matěj Sulitka
M.Sulitka@rcmt.cvut.cz




EXAMPLES OF RESEARCH


Center of Vehicles for Sustainable Mobility

 Dr. Bohumil Mareš bohumil.mares@fs.cvut.cz

Josef Bozek Research Center of Engine and Automotive Engineering

 prof. Jan Macek jan.macek@fs.cvut.cz

Centre for Aviation and Space Research

 prof. Michael Valášek Michael.Valasek@fs.cvut.cz

 prof. Tomáš Vampola Tomas.Vampola@fs.cvut.cz

Innovation Center for Diagnostics and Application of Materials

 Dr. Jakub Hornik jakub.hornik@fs.cvut.cz

FACULTY OF ELECTRICAL ENGINEERING CENTER FOR MACHINE PERCEPTION

CMP comprises scientists sharing common interests in computer vision, pattern recognition, machine learning, and autonomous robotics. The mission of CMP is to provide and develop a stimulating and open research environment for groups and scientists sharing common interests. CMP facilitates scientific collaboration and joint research projects, pursues ambitious common scientific objectives.

➔ **CMP Secretariat:**
Dr. Eva Matyskova
matyskov@fel.cvut.cz



EXAMPLES OF RESEARCH

Center of Excellence for Bioanalytical Technologies

➔ Dr. Zdeněk Hurák hurak@fel.cvut.cz

Computer Graphics Center

➔ Prof. Jiří Žára zara@fel.cvut.cz

5Gmobile Research Lab

➔ Assoc. prof. Zdeněk Bečvář zdenek.becvar@fel.cvut.cz

Center for Robotics and Autonomous Systems

➔ Assoc. prof. Tomáš Svoboda svobodat@fel.cvut.cz

Artificial Intelligence Center

➔ Prof. Michal Pěchouček pechouce@fel.cvut.cz

Advanced Photovoltaics Center


➔ Prof. Tomáš Markvart markvart@fel.cvut.cz

FACULTY OF NUCLEAR SCIENCES AND PHYSICAL ENGINEERING

DOPPLER INSTITUTE FOR MATHEMATICAL PHYSICS AND APPLIED MATHEMATICS

The mission of the institute is to create a first class research center in the field of mathematical physics and applied mathematics within the horizon of one generation, and strong ties to leading European institutes.


 doppler.ujf.cas.cz

 Scientific director:
prof. Pavel Exner
pavel.exner@fjfi.cvut.cz



EXAMPLES OF RESEARCH

VR-1 Training Reactor

 Dr. Jan Rataj


jan.rataj@fjfi.cvut.cz

Fusion Tokamak "Golem"

 Vojtěch Svoboda

svoboda@fjfi.cvut.cz

Fractographic laboratory

 Assoc. prof. Jan Siegl

jan.siegl@fjfi.cvut.cz

Laboratory of Advanced Detection Technologies

labtech@fjfi.cvut.cz

FACULTY OF ARCHITECTURE RESEARCH CENTER FOR INDUSTRIAL HERITAGE (RCIH)

The RCIH systematically documents the industrial heritage and technical and industrial monuments located on the territory of the Czech Republic and studies them with reference to the history and theory of architecture, urban studies, and heritage conservation.

➔ Principal researcher:
Dr. Lukáš Beran
lukas.beran@vcpd.cvut.cz

 vcpd.cvut.cz/en



EXAMPLES OF RESEARCH

Institute of Monument Care

➔ prof. Václav Girsá vaclav.girsa@fa.cvut.cz

Research on the Processes and Tools of Urban Design and Spatial Planning

➔ Assoc. prof. Jan Jehlík jan.jehlik@fa.cvut.cz

Research on Sustainable Development of Urban and Regional Structures

➔ Assoc. prof. Jakub Vorel vorel@fa.cvut.cz

Research on Theory and History of Architecture

➔ Assoc. prof. Petr Vorlík vorlik@fa.cvut.cz

Research on Computing Design: MOLAB Cabinet of Design Modelling

➔ Assoc. prof. Henri Hubertus Achten achten@fa.cvut.cz

Research across Diverse Areas of Knowledge: Institute of Intermedia (IIM)

➔ Dr. Roman Berka berka@fel.cvut.cz

FACULTY OF TRANSPORTATION SCIENCES

The Joint Systems Reliability Laboratory of the Faculty of Transportation Sciences and the Institute of Special Telecommunications Laboratory – a member of the Eurnex network

➔ Assoc. prof. Pavel Hruběš hrubes@fd.cvut.cz

Laboratory of Telematics

➔ Prof. Miroslav Svítek svitek@fd.cvut.cz

Laboratory for Electronic Identification Systems and Communication (e-Ident)

➔ Dr. Petr Bureš bures@fd.cvut.cz



Laboratory of Experimental Mechanics

➔ Dr. Petr Zlámal zlamal@fd.cvut.cz

Testing Laboratory of the Faculty of Transportation Sciences

➔ Assoc. prof. Martin Leso lesomart@fd.cvut.cz



FACULTY OF BIOMEDICAL ENGINEERING OPTIMIZING MECHANICAL LUNG VENTILATION

The research objective is to find mechanical lung ventilation modes that minimize the undesirable effects on the patient's lungs. The research is conducted through clinical and animal studies, development of monitoring and therapeutic medical devices and advanced techniques of data processing or modeling of biological systems.

www.ventilation.cz

➔ **Principal researcher:**
Prof. Karel Roubík
roubik@fbmi.cvut.cz



EXAMPLES OF RESEARCH

Non-conventional Ventilatory Team (NVT)

➔ Prof. Karel Roubík roubik@fbmi.cvut.cz

Nanocomposite and Nanocrystalline Materials for Implantology and Biomedicine

➔ Dr. Tomáš Kocourek kocourek@fbmi.cvut.cz

Biotelemetric Systems

➔ Dr. Pavel Smrčka smrcka@fbmi.cvut.cz

Interaction of XUV Radiation with Biological Objects

➔ Prof. Miroslava Vrbová vrbova@fbmi.cvut.cz

Quantification of the Evaluation of the Rehabilitation Process

➔ Dr. Karel Hána hana@fbmi.cvut.cz

New Trends in Disaster Medicine

➔ Prof. Leoš Navrátil navratil@fbmi.cvut.cz

BRAIN Team: Biosignal Recognition & Artificial Intelligence in Neuroscience

➔ Dr. Václava Piorecká vaclava.sedlmajerova@fbmi.cvut.cz

FACULTY OF INFORMATION TECHNOLOGY

PROGRAMMING RESEARCH LABORATORY PRL@PRG

The laboratory focuses on cutting-edge research in the field of programming languages and their environments. The main topics are evolvability of programming language ecosystems and analysis of large code bases available on the Internet.

➔ **Principal researcher:**
Prof. Jan Vitek
jan.vitek@fit.cvut.cz

Forensic analysis laboratory (ForensicLab)

➔ prof. Róbert Lorencz robert.lorencz@fit.cvut.cz



EXAMPLES OF RESEARCH

OpenDataLab

➔ Dr. Jaroslav Kuchař jaroslav.kuchar@fit.cvut.cz

Network Visualization Lab

➔ Jiří Chludil jiri.chludil@fit.cvut.cz

Intelligent embedded systems laboratory

➔ Dr. Miroslav Skrbek miroslav.skrbek@fit.cvut.cz

Network Traffic Monitoring Lab

➔ Dr. Tomáš Čejka tomas.cejka@fit.cvut.cz

Digital Design & Dependability Research Group

➔ Assoc. prof. Hana Kubátová Hana.Kubatova@fit.cvut.cz

Networking Research Group

➔ Dr. Alexandru Moucha alex.moucha@fit.cvut.cz

Parallel and Distributed Computing Research Group

➔ Prof. Pavel Tvrđík pavel.tvrdik@fit.cvut.cz

Prague Stringology Club

➔ Dr. Miroslav Balík miroslav.balik@fit.cvut.cz

Web Intelligence Research Group

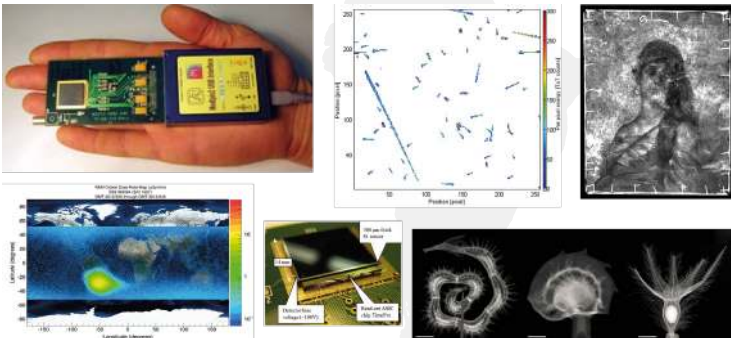
➔ Assoc. prof. Tomáš Vitvar tomas.vitvar@fit.cvut.cz

INSTITUTE OF EXPERIMENTAL AND APPLIED PHYSICS (IEAP)

IAEP is a scientific and educational institute of CTU in Prague focusing on fundamental research in particle physics (LHC at CERN), neutrino (double beta decay, detection of high-energy cosmic neutrinos, oscillations), astroparticle (detection of dark matter and cosmic rays) and subatomic physics and also on a broad range of applications (pixel and strip detectors, X-rays and neutron radiography, biomedical imaging, etc.).

www.utef.cvut.cz

➔ **Director:**
Assoc. prof. Ivan Štekl
ivan.stekl@utef.cvut.cz



UNIVERSITY CENTER FOR ENERGY EFFICIENT BUILDINGS (UCEEB)

The main focus of the Center is on environment-friendly energy-efficient buildings that provide a healthy indoor environment.

www.uceeb.cz

- ➔ **Director:**
Assoc. prof. Lukáš Ferkl
lukas.ferkl@uceeb.cz
- ➔ **Research projects coordinator:**
Kateřina Mrkvíčková
katerina.mrkvickova@uceeb.cz



KLOKNER INSTITUTE

Provides expert services for public administration and for private clients in the field of national and international standardization in civil engineering. The Institute has 4 specialized departments, an accredited laboratory and a forensic department for diagnostics, failure analysis and tests of concrete, steel, timber and masonry structures and parts of structures.

 www.klok.cvut.cz

➔ **Director:**
Assoc. prof. Jiří Kolísko
jiri.kolisko@cvut.cz



CZECH INSTITUTE OF INFORMATICS, ROBOTICS, AND CYBERNETICS

CIIRC builds on the successful tradition of cybernetics and informatics teams at CTU, and will support long-term specific research collaboration with leading global companies and with Czech businesses.

 www.ciirc.cvut.cz

➔ **Director:**
Director: Dr. Ondřej Velek
Ondrej.Velek@cvut.cz



CENTRE FOR APPLIED CYBERNETICS (CAC)

CAC pools together top research capacities of the public and private sectors as part of a long-term collaborative effort in modeling, control, optimization, image analysis, machine perception, and intelligent man-machine interaction.

www.c-a-k.cz

➔ **Manager:**
Prof. Vladimír Kučera
+420 224 354 102
vladimir.kucera@cvut.cz

EXAMPLES OF RESEARCH

Center for Computational Intelligence and Signal Processing (CSP)

➔ Prof. Aleš Procházka ales.prochazka@cvut.cz

Center for Machine Perception (CMP)

➔ Prof. Václav Hlaváč vaclav.hlavac@cvut.cz

CENTRE FOR TECHNOLOGY TRANSFER

Centre for Technology Transfer provides expert services and support to all CTU faculties in the field of Intellectual Property and its commercialization. Moreover, at InQbay, the CTU's business incubator, students, doctoral candidates, CTU employees and start-ups will find support on their journey to create a functional and successful business.

www.transfer.cvut.cz

www.inqbay.cz

➔ **Head of Department:**
Ivo Stanček
ivo.stancek@cvut.cz



THE DEPARTMENT OF SCIENCE AND RESEARCH

The Department of Science and Research (DSR) of the Rector's Office deals with scientific and research projects funded by grants provided from Czech and other sources, for example European Commission research grants.

DSR facilitates research projects by:

- providing information about calls for public research tenders,
- providing information, advisory and administrative support for applicants and researchers, and mediating contacts for Czech and foreign partners in the preparation of international projects,
- helping research teams to prepare and implement their projects,
- managing and coordinating projects and programmes,
- keeping records of the results of scientific and research activities,
- managing and providing administrative support for the Student Grant Competition (SGS).

➔ **Head of Department:**
Karel Žebrakovský
karel.zebrakovsky@cvut.cz

 www.cvut.cz/en/science-and-research-at-ctu

STUDY AT CTU

CZECH TECHNICAL
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CONTACT

FOR INTERNATIONAL COOPERATION

Prof. Oldřich Starý ➔ oldrich.stary@cvut.cz

FOR RESEARCH COOPERATION

Prof. Zbyněk Škvor ➔ zbynek.skvor@cvut.cz

FOR INTERNATIONAL DEGREE-SEEKING STUDENTS

Erika Lahka ➔ erika.lahka@cvut.cz

 www.cvut.cz/en

 www.studyatctu.com

