



2008

ANNUAL REPORT
THE BRNO
UNIVERSITY
OF TECHNOLOGY







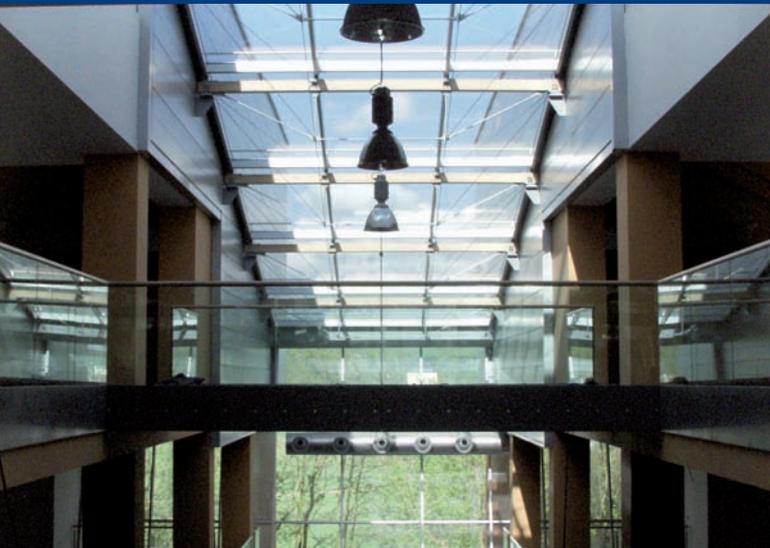
THE BRNO UNIVERSITY OF TECHNOLOGY 2008 ANNUAL ACTIVITY REPORT

is submitted as required by Act no. 111/1998 Coll. on universities. It has been set up on the basis of the 2008 University Guidelines published by the Ministry of Education, Youth, and Sports. It presents a wider public with data and substantial outcomes of all the activities related to Brno University of Technology as part of the Czech and international educational, research, and social space.

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2008

RECTOR'S WORD

The annual report presented by Brno University of Technology to the public documents the university's achievements in the year 2008 in its major areas, that is, education, science, research, and creative activities in engineering, natural sciences, economics and arts. It also provides information on the relations and cooperation with domestic and foreign universities, and with the industrial and social sphere. The annual report presents a great deal of facts and data on the BUT development in 2008. I would like to start with highlighting the most important ones. In many respects, 2008 was a year of targeted efforts to get prepared for the coming reforms in the European and Czech tertiary education and their impact on BUT.



Four years ago, during my rector campaign, I proclaimed changes in the university's organisational structure and strategy – orientation towards closer relations with the industrial sphere, BUT preparedness for accessing the ESF funds and strengthening international relations with the European and world's university environment. This strategy was also used in 2008 and the annual report brings quantified characteristics which prove that such changes are ones in the right direction.

There has been a steady increase in BUT student numbers with the number of applications reaching twenty thousand in 2008 and the number of students registered exceeding by over 600 the student number of 2007. That students applying for study at several universities choose to study at BUT with a high priority is evidenced by the fact that the quotient of actually registered students to those admitted has been increasing.

BUT makes a full use of the ECTS credit system in all its Bachelor's and Master's degree program-

mes. In 2006, Brno University of Technology obtained a Diploma Supplement Label certificate. In 2008 an application was submitted to the National Agency for European Programmes for the ECTS Label certificate and for a renewal of the DS Label certificate.

Our students received a number of awards and ranked among the best in international competitions, let me mention BcA Lukáš Veverka from the BUT Faculty of Fine Arts for one, who won the Promax Award 2008 for a TV programme.

In the Times Higher Education Supplement (THES), a rating by The Times listing the world's top universities, we have again been included in the 500 best out of a total of 18,000 universities.

The annual report also lists detailed data documenting the creative achievements in the research, artistic, and other areas. In 2008 BUT mostly concentrated on the EU Operative Programmes, particularly on the Education for Competitiveness and Research and Development for Innovation operative programmes.

In international scientific and research cooperation, the number of projects is larger with the financial contribution being raised to 59 million CZK in 2008 from 45 million CZK in 2007.

Finally, applied research funded through contracts with domestic and foreign industrial enterprises also forms a major part of research activities. In this regard, I see as positive an increase to 75 million CZK in the funding received from contracts with the domestic and foreign industrial companies as compared with the 69 million CZK in 2007.

Concerning the quality of creative activities, it is good news for BUT that it has quickly accepted the substantial changes in the evaluation of R&D outcomes. According to a new methodology introduced in 2007, the number of what is called re-

calculated results has been raised by 17 percent on 2006.

A major achievement of 2008 was the inclusion in a shortlist of a CEITEC project (Central Bohemian Institute of Technology) prepared by BUT together with Masaryk University and other Brno universities and institutes of the Academy of Sciences and, as part of the negotiations of the Research and Development for Innovation operative programme, submitted to the Ministry of Education and approved by the Council for Research and Development of the Czech government.

Also the significant involvement of BUT in international projects helps a great deal to increase the expertise of teachers, graduate and undergraduate students. BUT improves its international renown by cooperating with many European and world's research institutions as well as by holding important international conferences. In this regard, I would like to point out the 17th European Conference of Fracture (co-organised by the BUT Faculty of Mechanical Engineering and the Academy of Sciences of the Czech Republic).

In 2008 we hosted several distinguished scientists such as Professor Alan Heeger, a Nobel Prize winner in chemistry to name just one. His visit took place as part of the Honeywell Nobel Laureate Series. Apart from two lectures given, there were also several discussion fora attended by both BUT students and management.

The interest of doctoral and post-doctoral students in research and teaching at the university is certainly encouraged by a number of university competitions and grants (such as GRAFO and others) with the best scientists and researchers receiving regular awards.

As mentioned above, internationalization is BUT's strategic goal incorporated in its Mission Statement. BUT has signed a total of 63 cooperation

agreements with foreign universities and scientific institutes with eighteen signed in 2008 alone.

BUT has a John Master Degree In European Business and Finance programme, fully accredited and taught in cooperation with a British and a Polish university.

Support of innovation transfer is also among BUT's basic strategic objectives. At the university, such activities are coordinated by the Technology Transfer Office (TTO) established in 2002 as one of the first at the Czech universities. In 2008, supported by this office, thirteen patents were taken out and thirteen utility models registered, which is twice as many as in 2007. The TTO staff have set up a methodology of establishing spin-off companies, which is unequivocally oriented towards cooperation between universities and professionals.

BUT as a whole as well as its individual faculties have a number of strategic partnerships with leading companies including Honeywell, Siemens, IBM, Tatra, a. s., GiTy, a. s., Alta, a. s., and others of which the majority are members of the Regional Chamber of Commerce.

In 2008 BUT as well as other Czech universities had to operate in an economic environment which could hardly be called favourable to their development. Despite this, I believe that the results of the educational, research, and social activities listed in the BUT 2008 annual report can be thought of as successful. I would like to thank the members of the academic community as well as all the other staff, without whose everyday work Brno University of Technology could not be such a respected institution of higher education as, no doubt, it is now in the Czech Republic and in Europe.

Prof. Ing. Karel Rais, CSc., MBA





2008

**SIGNIFICANT
EVENTS
AT BUT**

In the THES - QS World University Rankings published by The Times Higher Education Supplement (THES), BUT rated as the third best Czech university after Charles University in Prague and Czech Technical University in Prague. The same as in 2007, BUT was included in the list of the world's best 600 universities improving its position on last year by a few places. Over 18,000 universities participated in the competition. THES is among the world's most respected university rankings.

Prominent visitors

Professor Jan Švejnar – an economist, gave a lecture at the BUT Faculty of Business and Management on possible ways and visions of the economic development of the Czech Republic. His visit to Brno was part of his presidential election campaign.



Professor Alan J. Heeger, the 2000 Nobel prize winner in Chemistry –Professor Heeger’s visit to BUT took place as a result of cooperation between Honeywell and BUT as part of his Honeywell Nobel Laureate Series. Apart from giving two lectures, Professor Heeger held several discussion fora with BUT management and students and visited some BUT research institutes.



Ján Figel’ – an EU Commissioner responsible for Education, Training, Culture and Multilingualism was shown a project by the Central European Institute of Technology (CEITEC) co-developed by BUT and Masaryk University in Brno. “CEITEC is a very interesting project as it proceeds in the same direction as a European Institute of Technology, which is being established at present, supporting research excellence and close cooperation between education, research and practice. It is projects like CEITEC that contribute to the creation of an innovative Europe as a space of high value added”, said EU Commissioner Figel’ about the importance of CEITEC.



New Deans

In March, Doc. Ing. Jaroslav Zendulka, CSc. became a new dean of the BUT Faculty of Information Technology. In November, doc. RNDr. Anna Putnová, Ph.D., MBA entered the office of a new dean of the BUT Faculty of Business and Management.



Honorary Doctorates

Following a proposal by the BUT Scientific Board, BUT rector prof. Ing. Karel Rais, CSc., MBA conferred BUT honorary doctorates upon two distinguished scientists and pedagogues of world renown. The Doctor Honoris Causa degrees were received by prof. Dr. Peter Skalicky, top expert

in solid phase physics and professor at the Technische Universität Wien and by prof. Dr.-Ing. habil. Egon Christian von Glasner, distinguished expert in forensic engineering, professor at the Universität Stuttgart.



Czech Academic Games

After six years, the 2008 Czech Academic Games again took place in Brno. Co-organised by BUT, Mendel University of Agriculture and Forestry in Brno, and University of Veterinary and Pharmaceutical Sciences Brno, the games hosted 2,250 academic athletes from 35 Czech and foreign universities.



15th Anniversary of the BUT Faculty of Fine Arts

To commemorate its fifteenth anniversary, the Faculty of Fine Arts organised a Week at FFA series of events to show a wider public the present artistic life at the faculty. Also, a book was published on the 15th anniversary of the faculty. During its endorsement, a *Seconda prattica ad honorem jubilei FaVU* composition by Miloš Štědroň, a Brno composer, was performed as a world premiere.



Opening a Centre of Technology

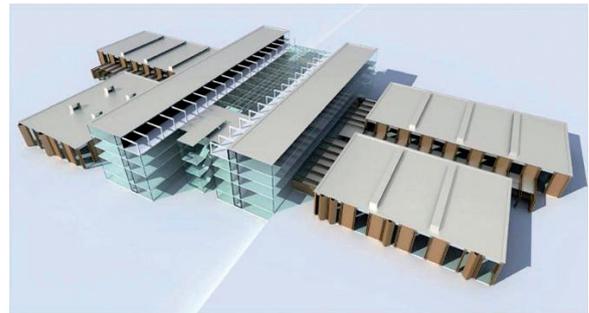
A centre of Technology was opened at the BUT Faculty of Mechanical Engineering. It will become a place to develop new technologies, prepare the production of complex prototypes using four- and five-axis machining, test cutting tools, process fluids, train specialists, etc.



Central European Institute of Technology (CEITEC)

Work on the CEITEC project submitted jointly by BUT, Masaryk University, other Brno universities, and Academy of Sciences institutes has progressed a great deal after efforts to approve in Brussels a Research and Development for Innovation operative programme have finally been successful.

Following a recommendation by foreign experts, the Central European Institute of Technology was included in a list of research projects which, thanks to their quality, stand a substantial chance of receiving a subsidy of ten billion CZK from the EU funded Research and Development for Innovation operative programme.



Radio engineering Journal on the Web of Science

The Radioengineering international scientific journal was included in the ISI Thomson database containing publications referred to in the Science Citation Index Expanded and the Journal Citation Reports; editor in chief is prof. Zbyněk Raida, BUT Faculty of Electrical Engineering and Communication.



TOP 10 Excellence Competition

Rector of BUT Karel Rais announced a TOP 10 Excellence competition to choose the BUT most productive researchers. The competition was organized in two categories – publication and technology. The winner in the publication category was doc. Ing. Miroslav Vořechovský, Ph.D., from the BUT Faculty of Civil Engineering, the winner of the technology category became Ing. Josef Kotlík, CSc., from the BUT Faculty of Chemistry.

Night of Scientists at the Faculty of Chemistry

This European annual event held at the Faculty of Chemistry under the auspices of the European Union was a great success. Fourth in succession, it was attended by over 1000 visitors.



BUT Hosted a One World Festival

BUT became a major partner and co-organiser of the largest European human rights festival. Initiated by the People In Need association and held each year in 28 cities of the Czech Republic, the festival has received endorsements from Václav Havel and, its Brno part, from Roman Onderka, mayor of Brno, Stanislav Juránek, commissioner of the South Moravian Region, and Karel Rais, rector of BUT.



BUT Academic Gathering

Distinguished academics were honoured at a traditional gathering of the academic community held as part of the celebrations of the events of 17th November 1989 and the 109th anniversary of BUT as the first Czech university in Moravia. Silver medals, commemorative letters, and rector's awards were given to students and young teachers. Dipl. Ing. Armin Blaschke, an acknowledged expert in manufacturing technology and Siemens Manager of business development for Eastern Europe, was awarded a gold medal by the rector of BUT for his long-lasting cooperation with the Faculty of Mechanical Engineering.



Commemorative Plaque and Relief of Leoš Janáček

A plaque and a relief was unveiled at the Faculty of Architecture commemorating the teaching career of Leoš Janáček at the Slavonic Institute for Teacher Training in a building in which the BUT Faculty of Architecture is situated at present. The commemorative plaque was designed by doc. Ing. arch. Zdeněk Makovský, the author of the relief is Ing. arch. Aleš Navrátil, both from the BUT Faculty of Architecture.



World's Cathedrals in Full View

A six-month exhibition of structural models of sacral buildings in the crypt of the St. Peter and Paul cathedral in Brno – works of Faculty of Architecture students. The author was doc. Ing. arch. Jaroslav Drápal, CSc. Mons. Mgr. Jiří Mikulášek, general vicar, made a speech during the opening ceremony.



Selected International Conferences Held at BUT

17th International Forensic Engineering Research Conference (25th to 26th January 2008) – co-organised by the BUT Institute of Forensic Engineering, the Czech Association of Forensic Experts, and the European Association for Accident Research and Analysis (EVU) - the Czech national group focussing on civil engineering and economics, assessing real property, analysis of accidents, assessing vehicles, machines and equipment. The conference was attended by experts from the Czech republic, Germany, Poland, and Slovakia.

International Conference on the causes of damage to and fracture of materials (ECF17) (2nd to 5th September 2008) – the conference was attended by officials of the European Structural Integrity Society (ESIS), American Society for Testing Materials (ASTM), etc. For its large international attendance, ECF17 was very successful. The world's top scientists were among its participants. The research part of the conference programme was hosted by the BUT Faculty of Mechanical Engineering. A total of 380 lectures were given and 62 posters presented.



The 6th International MANAGEMENT, ECONOMICS AND BUSINESS DEVELOPMENT IN THE NEW EUROPEAN CONDITIONS conference at the BUT Faculty of Business and Management

– attended by teachers, doctoral students, and participants from cooperating universities abroad. The aim of the conference was to provide the participants with a discussion forum to present the objectives and results of their research projects, encourage discussion on the current and future issues and help initiate close cooperation in research and teaching in the EU conditions.

BIO SIGNAL 2008 – an international EURASIP – IEEE EMBS conference at the BUT Faculty of Electrical Engineering and Communication

– the traditional 19th biennial international conference on biomedical engineering was attended by 220 scientists from 30 countries. The proceedings of the three-day conference were divided into the following sections: measuring and interpretation of physiological signals, displaying in medicine and analysis of image data, modelling and simulation in medicine, education in biomedical engineering.

International Scientific Conference of Forensic Experts and Accident Analysts, June 2008

– Unusual Accidents were the main topic of the 13th international conference of forensic experts and accident analysts, which was traditionally part of an accompanying programme of the Autotec 2008 fair. The conference was co-organised by the BUT Institute of Forensic Engineering, the Brno based Czech Association of Forensic Experts and Assessors, and the Hamburg based European Association for Accident Research and Analysis (EVU), its Brno-based national group. The conference was attended by experts from the Czech republic, Germany, Poland, and Slovakia.



Evolvable Systems international conference: From Biology to Hardware

– BUT Faculty of Information Technology became the organiser of the conference after Wuhan, China. A prestigious event held biennially as a meeting point of experts specialising in the implementation of biology-inspired hardware, the conference was attended by 70 participants from four continents.

4th Meeting on Chemistry & Life – a conference providing space for academics and industrial partners to exchange experience and new research ideas in chemistry and chemical technologies, food chemistry and biotechnologies, materials science and environmental engineering. The conference was attended by 184 participants from the Czech Republic and 140 scientists from 17 countries. The authors published their papers in seven sections in 100 lectures and on 320 posters.

CINPAR 2008 international conference – the BUT Faculty of Civil Engineering co-organized the CINPAR 2008 Aveiro – Congresso Internacional sobre Patologia e Rehabilitacao de Estruturas, Portugal conference, which continued the successful series of conferences in Brazil: CINPAR 2007 – Fortalesa, 2006 – Recife.



Major Awards and Achievements

City of Brno Awards – in December, the Brno municipality decided to give 2008 City of Brno Awards. Three representatives from BUT were among the laureates:

Prof. Ing. František Pochylý, CSc., from the Victor Kaplan Department of Fluid Engineering of the FSI Energy Institute received an award for his research work. Under his leadership, a team of young scientists received a certificate of merit from the Engineering Academy for a project of Seidl turbine protected by patent.



Prof. Ing. arch. Vladimír Šlapeta, DrSc., dean of the Faculty of Architecture for his extraordinary contribution to architecture and urban planning and for his outstanding achievements.



Doc. PhDr. Petr Spielmann, dr.h.c., a teacher, museologist, and art historian, for his remarkable achievements in educating a new generation of artists.



The Main 2008 Award of the Czech Engineering Academy was given to a team of authors from the FME Institute of Aerospace Engineering led by prof. Ing. Antonín Píštěk, CSc. The Kunovice based EVEKTOR company was the main partner of the development and implementation project of a VUT 100 aircraft. VUT100 Cobra is the trade name of the aircraft.



European patents awarded – in 2008, the following patents were granted to Ing. Matějka, CSc., Ph.D., MBA, from the FCE Institute of Building structures:

„Material deformation testing stand for long-term monitoring of deformation characteristics under constant pressure“ no. 08018713;

„Support structure for a door's threshold“ no. 08018771;

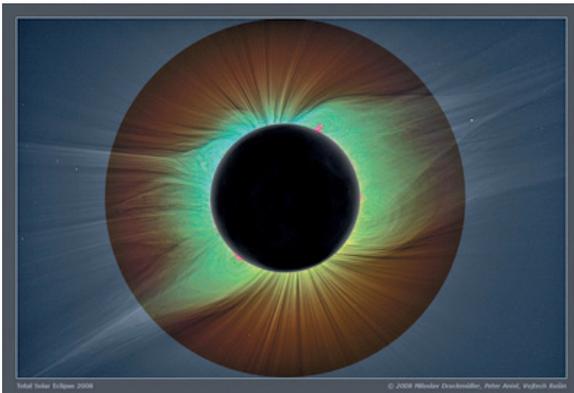
„Window subframe“ no. EP 1 918 500 B1.

Newly developed technology and patent

– a team from the FCE Institute of Concrete and Masonry Structures led by prof. RNDr. Ing. Petr Štěpánek, CSc., as part of an MPO PK2/57 project, in cooperation with PREFA Kompozity Brno, a. s., developed non-metal carbon and glass fibre based reinforcements, which are manufactured and used to reinforce concrete structures in extreme conditions (protected by utility models, also applicable to concrete structure stress monitoring). A method was developed and protected by patent of prestressing, anchoring, and joining such reinforcements



BUT FME Expedition was undertaken to observe and record a total solar eclipse. Led by prof. RNDr. Miloslav Druckmüller, CSc., the team specialises in digitally processing the images related to a visualisation of the solar corona. For his numerically processed photographs of the solar corona, professor Druckmüller won the respect of the world's astrophysicists. The enormous contrast in observing the corona can be captured neither on film nor digitally. Professor Druckmüller developed a method for making individual images of the corona with different parameters that can subsequently be improved mathematically for further processing. The result is a photograph showing the actual image of the corona. The results of the expedition have contributed a great deal to further investigations of the solar corona.



With his Uroboros project, **Mgr. Tomáš Medek, a sculptor and teacher at the BUT Faculty of Fine Arts**, won an ART IS STEEL competition announced by Arcelor Mittal Distribution in 2006 and attended by 650 European sculptors. His work has now been installed next to the Arcelor Mittal administrative headquarters in Rems, France.



In the prestigious Human Competitive Awards In Genetic and Evolutionary Computation (Humies) within the Genetic and Evolutionary Computation Conference (GECCO) Atlanta, USA, the second place went to **a team of computer scientists from the BUT Faculty of Information Technology** consisting of Ing. Tomáš Pečenka, doc. Ing. Lukáš Sekanina, Ph.D., and doc. Ing. Zdeněk Kotásek, CSc., from the FIT Institute of Computer Systems (GECCO is the world's most important event in genetic algorithms and genetic programming, attended each year by more than 500 scientists from all over the world) for their evolutionary design of testing circuits.

The Speech@FIT group from the Faculty of Information Technology proved once more its excellence in automatic speech recognition by ending up among the world's top research institutes in evaluations carried out by the US National Institute of Standards and Technology. It was also much lauded for its achievements and contribu-

tion to international cooperation in the field at a workshop held in Orlando, USA.

Automatic speech recognition is a key application for defence and security issues. Both the NIST evaluations and the workshop are funded by the U.S. Department of Defense and intelligence services.



Major Achievements by Students

BcA. Lukáš Veverka, a graduate from the BUT Faculty of Fine Arts, Studio of Graphic Design, received a Promax Rocket Award 2008. Designers having worked less than 18 months in the industry are eligible for the rocket award category.



Ondřej Mikšík – a Czech Head award winner in the Hope category – reached the finals of the Intel International Scientific and Engineering Fair competition in Atlanta, Georgia, USA. This international student competition is organised by Society for Science & Public with Intel as the main sponsor.



In a Euroweek international competition at Girona, Spain, the Faculty of Business and Management was represented by six students. The first place went to a Corporate Governance as an Innovative Management project in which student Mark Volavý participated. A KISS Those Old Good Fellows project with participation of student Michal Učeň ended up as second.



BcA. Petr Dub, student of the Studio of Painting 3 at the Faculty of Fine Arts came in second in the photography section at the Bienal Internacional de Arte Contemporaneo Chapingo 2008 in Mexico.



Ondřej Chybík, a student of the BUT Faculty of Architecture together with doc. Ing. Josef Chybík received the first prize in the home category of the Wooden House 2008 international competition for their design of a low-energy house.



In the international final of the Student Research competition held in Ostrava on 22nd May 2008, students of the BUT Faculty of Civil Engineering came in first five times, second four times, and third five times. The competition was divided into nine sections with the representatives of universities from the Czech Republic, Slovakia, Poland, Hungary, Germany, and Austria taking part.

Bc. Hana Druckmüllerová, student of the BUT Faculty of Mechanical Engineering, won the prestigious GE Foundation Scholar- Leaders Program scholarship taking part in a Solar Eclipse Conference in Los Angeles, USA. In March 2008, she was also in a team of FME students led by Jan Novotný participating in a Mathematical Internet Olympiad organised by the Ariel University Center of Samaria, Israel. For their achievements, the students were awarded a gold medal by the organising committee.



David Čech – 4th year student of civil engineering had swum across the straight of Gibraltar between Europe and Africa in both directions. He was the first Czech, first non-islander and fifth man to achieve this. He took 2 hours 38 minutes to swim from Sapin to Morocco, which is a new world record.

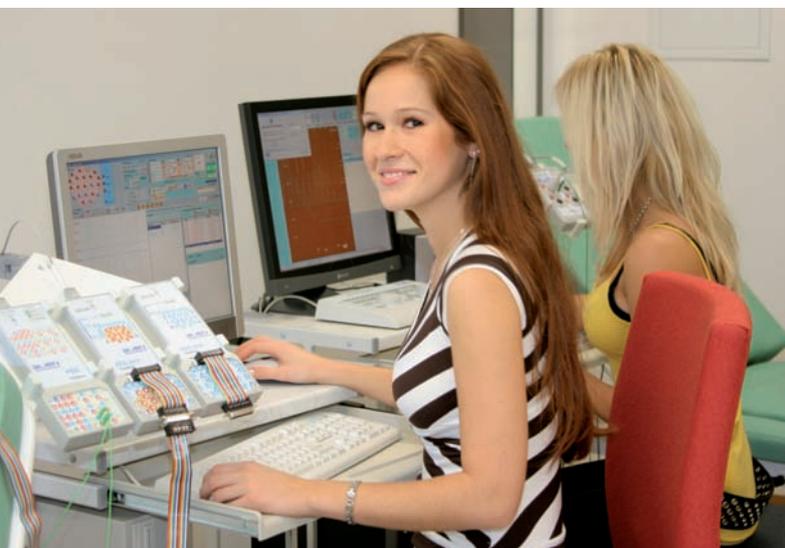


Vox Iuvenalis Choir

Has been around on the Brno and international music stage since 1993 and, during this time, has acquired a reputation of a young performer of high quality, which is testified by numerous awards won in international contest. Since 2000 it has been representing Brno University of Technology. In 2008 it gave for BUT an Easter concert of spiritual music held in the atrium of the BUT Centre, a seriously casual concert to finish the academic year, a gala concert on the occasion of the 17th November anniversary, and a Christmas concert.







BASIC DATA

1. 1. Full name of the public higher-education institution, acronym used, address, names and addresses of all BUT faculties

Brno University of Technology, BUT
Antonínská 548/1, 601 90 Brno
<http://www.vutbr.cz>

BUT Faculty of Architecture, BUT FA,
Pořičí 237/5, 639 00 Brno
<http://www.fa.vutbr.cz>

BUT Faculty of Electrical Engineering and Communication, BUT FEEC,
Údolní 244/53, 602 00 Brno
<http://www.feec.vutbr.cz>

BUT Faculty of Chemistry, BUT FC,
Purkyňova 464/118, 612 00 Brno
<http://www.fch.vutbr.cz>

BUT Faculty of Information Technology, BUT FIT,
Božetěchova 1/2, 612 66 Brno
<http://www.fit.vutbr.cz>

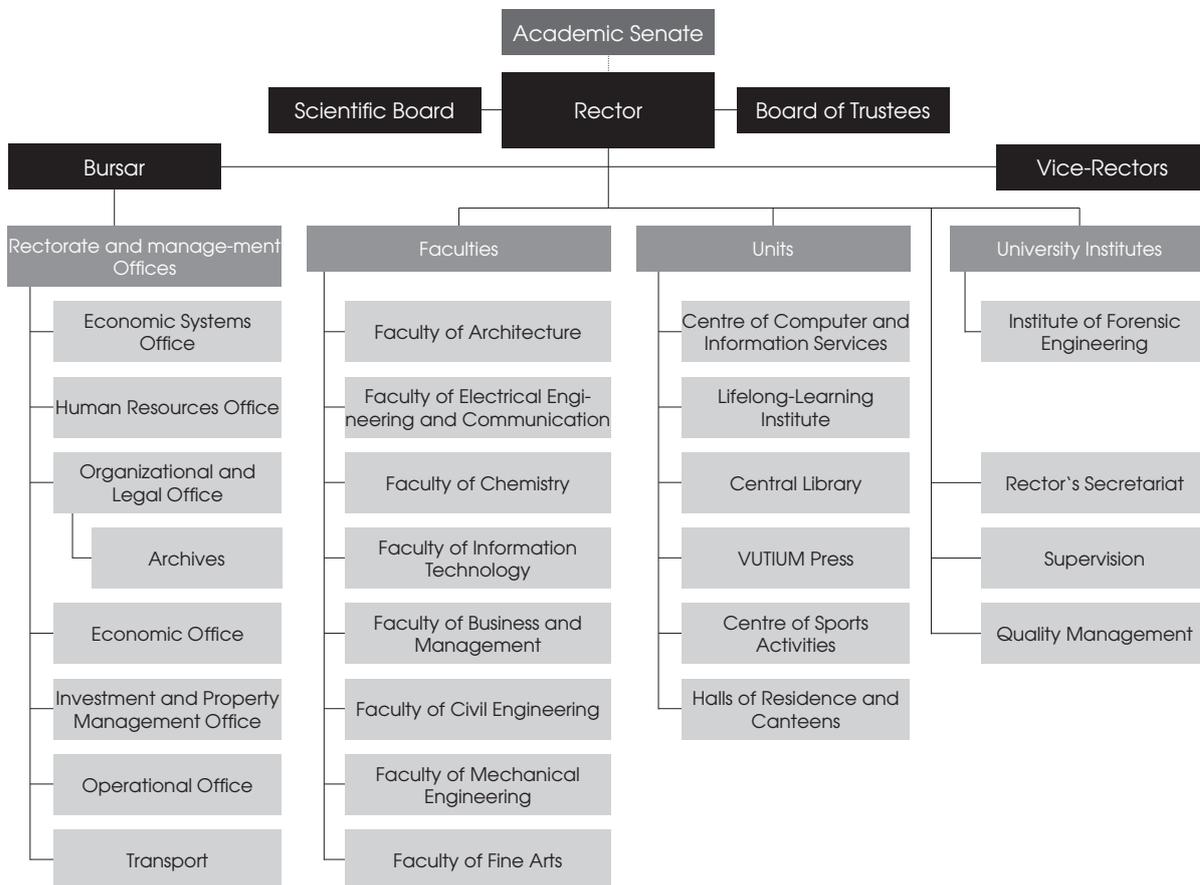
BUT Faculty of Mechanical Engineering, BUT FME,
Technická 2896/2, 616 69 Brno
<http://www.fme.vutbr.cz>

BUT Faculty of Business and Management, BUT FBM,
Kolejní 2906/4, 612 00 Brno
<http://www.fbm.vutbr.cz>

BUT Faculty of Fine Arts, BUT FFA,
Rybářská 125/13/15, 603 00 Brno
<http://www.ffa.vutbr.cz>

BUT Faculty of Civil Engineering, BUT FCE,
Veveří 331/95, 602 00 Brno
<http://www.fce.vutbr.cz>

1. 2. BUT Organizational Chart (university structure and its parts)



1. 3. BUT Scientific Board, Managerial Board, Academic Senate and other BUT bodies

BUT Scientific Board

Name	Position, workplace	Field of research
prof. RNDr. Vladimír Aubrecht, CSc.	vice-dean, BUT FEEC	physics of plasma
prof. Ing. Vladimír Bálež, DrSc.	rector, Slovak Technical University	chemical engineering
Ing. Aleš Bartůněk	general manager, IBM Česka republika, s. r. o.	information technology
prof. Ing. Jan Bujňák, CSc.	rector, University of Žilina	steel and concrete structures
prof. RNDr. Milan Češka, CSc.	vide-dean, BUT FIT	information technology
Ing. Ivan Dobiáš, DrSc.	Czech Academy of Sciences, Institute of Thermomechanics	non-linear dynamic systems
Ing. Jaroslav Doležal, CSc.	Honeywell, s. r. o.	management automation
prof. Ing. Rostislav Drochytka, CSc.	vide-dean, BUT FCE	construction materials engineering
prof. RNDr. Miloslav Druckmüller, CSc.	BUT FME	applied mathematics
prof. Ing. Jaroslav Fiala, CSc.	vice-rector, BUT	materials sciences and engineering
Ing. Josef Hájek	Skanska DS, a. s.	design and transport sciences
prof. Ing. Jan M. Honzík, CSc.	vide-dean, BUT FIT	information technology
Ing. František Hrnčír *	ABB Lummus Global, s. r. o.	power and process plants
Mgr. Tomáš Hruďa	Constantia Privatbank	project manager
prof. Ing. Tomáš Hruška, CSc.	dean, BUT FIT	information technology
prof. RNDr. Josef Jančář, CSc.	BUT FC	macromolecular chemistry
prof. Ing. Pavel Jura, CSc.	vice-rector, BUT	cybernetics, automation, and measurement
RNDr. Petr Kantor	AutoCont CZ, a. s., Brno	mathematical informatics and theoretical cybernetics
prof. Ing. Jiří Kazelle, CSc.	BUT FEEC	electrical and electronic technology
Mgr. Rostislav Koryčánek	Director, The Brno House of Arts	architecture

prof. RNDr. Michal Kotoul, DrSc.	vice-rector, BUT	applied mechanics
prof. Ing. Vladimír Kučera, DrSc.	Czech Technical University in Prague, Faculty of Electrical Engineering	technical cybernetics
prof. RNDr. Miroslav Liška DrSc.	BUT FME	applied physics
doc. RNDr. Petr Lukáš, CSc.	director, Academy of Sciences, Institute of Materials Physics	materials physics
doc. ing. Lubomír Mikš, CSc.	Chairman of the Board of Directors, Qualiform, a.s.	technology of construction
prof. Ing. Ladislav Musílek, CSc.	vice-rector, Czech Technical University in Prague	experimental physics
prof. Ing. arch. Alois Nový, CSc.	vice-rector, BUT	architecture
prof. Ing. Drahomír Novák, DrSc.	BUT FCE	structure mechanics, reliability of structures
prof. Ing. Ladislav Omelka, DrSc.	vide-dean, BUT FC	physical chemistry
prof. Ing. Emanuel Ondráček, CSc.	advisor to rector of BUT	mechanics of solids, computer mechanics
prof. Ing. Karel Rais, CSc., MBA	rector, BUT	business and management
prof. Ing. Petr Sába, CSc.	rector, Tomas Bata University in Zlin	materials engineering
prof. PhDr. Jan Sedlák, CSc.	BUT FFA	architecture
prof. RNDr. Eduard Schmidt, CSc.	Masaryk University in Brno, Faculty of Science	solid state physics
prof. Ing. Vladimír Smejkal, CSc.	forensic engineer, Prague	business and management
prof. Ing. Jana Stávková, CSc.	dean, Faculty of Business and Economics, Mendel University of Agriculture and Forestry in Brno	statistics
prof. Ing. Petr Stehlík, CSc.	BUT FME	process engineering
prof. Ing. arch. Jilji Šindlar, CSc.	BUT FA	architecture
prof. Ing. arch. Vladimír Šlapeta, DrSc.	dean, BUT FA	architecture
prof. RNDr. Ing. Petr Štěpánek, CSc.	dean, BUT FCE	concrete structures
prof. Ing. Petr Vavřín, DrSc.	BUT FEEC	cybernetics, automation, and measurement
prof. Ing. Radimír Vrba, CSc.	dean, BUT FEEC	electrical and electronic technology
prof. RNDr. Ing. Jan Vrbka, DrSc.	BUT FME	mechanics of solids

* in 2008 handed in his resignation from the BUT Scientific Board

BUT MANAGERIAL BOARD

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Valentin Girstl
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RNDr. Barbora Javorová
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PhDr. Miroslava Kopicová
Ing. Pavel Suchánek
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Ing. Jiří Škrála
Ing. Michal Štefl
Ing. Oldřich Kratochvíl, MBA, Dr. h. c.
doc. Ing. Otakar Smolík, MBA

BUT ACADEMIC SENATE

(from 1st January to 28th October 2008)

doc. RNDr. Josef Dalík, CSc. – chairperson
doc. Dr. Ing. Petr Hanáček – vice-chairperson and
chairperson of the Chamber of Academics
Petr Donth – vice-chairperson and chairperson of
the Chamber of Students

Chamber of Academics

doc. RNDr. Josef Dalík, CSc. (FCE)
doc. Ing. Eva Gescheidtová, CSc. (FEEC)
doc. Dr. Ing. Petr Hanáček (FIT)
Ing. Helena Hanušová, CSc. (FBM)
doc. Ing. Jana Korytářová, Ph.D. (FCE)
RNDr. Vlasta Krupková, CSc. (FEEC)
doc. Ing. Jiří Kunovský, CSc. (FIT)
doc. MgA. Petr Kvíčala (FFA)
doc. Ing. Zdenka Lhotáková, CSc. (FA)
Ing. arch. Ladislav Mohelník, Ph.D. (FA)
doc. Ing. Miloslav Pekař, CSc. (FC)
RNDr. Pavel Popela, Ph.D. (FME)
Ing. Jan Roupec, Ph.D. (FME)
PhDr. Jana Špoustová (FFA)
Ing. Stanislav Škapa, Ph.D. (FBM)
prof. RNDr. Milada Vávrová, CSc. (FC)

Chamber of Students

Ing. Daniela Čechová (FME)
Petr Donth (FCE)
Bc. Veronika Donthová (FBM)
BcA Petr Dub, DiS. (FFA)
Ing. arch. Martin Kareš (FA)
Rastislav Piovarči (FIT)
Petra Zedníčková (FC) - until 12th December
2008
Ing. Šimon Vojta (FC) - from 11th March to 28th
June 2008
Ing. Petr Polách (FEEC)

BUT AS Working Committees

LEGISLATION COMMITTEE:

Petr Donth
doc. Ing. Eva Gescheidtová, CSc.
doc. Ing. Jiří Kunovský, CSc.
doc. Ing. Zdeňka Lhotáková, CSc. – chairperson
committee
doc. Ing. Miloslav Pekař, CSc.
Ing. Pavel Roupec, Ph.D.
prof. RNDr. Milada Vávrová, CSc.

ECONOMIC COMMITTEE:

doc. Dr. Ing. Petr Hanáček
Ing. Helena Hanušová, CSc.
doc. Ing. Jana Korytářová, Ph.D.
RNDr. Vlasta Krupková, CSc.
doc. MgA. Petr Kvíčala
Ing. arch. Ladislav Mohelník, Ph.D.
RNDr. Pavel Popela, Ph.D. – chairperson
prof. RNDr. Milada Vávrová, CSc.
Rastislav Piovarči - from 12th February 2008

PEDAGOGIC COMMITTEE:

Ing. Daniela Čechová
Ing. Helena Hanušová, CSc.
RNDr. Vlasta Krupková, CSc. – chairperson
doc. Ing. Jiří Kunovský, CSc.
PhDr. Jana Špoustová
Ing. Stanislav Škapa, Ph.D.
Petra Zedníčková – until 12th February 2008

BUT REPRESENTATIVES ON THE UNIVERSITY COUNCIL

doc. Ing. Eva Münsterová, CSc.
UC presidium member
prof. RNDr. Milada Vávrová, CSc.
UC congress member for BUT
BcA Petr Dub, DiS.
UC Chamber of Students
Martin Hrubý
UC Chamber of Students – substitute
Martin Hrubý
UC Chamber of Students – from 9th September 2008
BcA Petr Dub, DiS.
UC Chamber of Students – substitute from 9th September 2008

BUT ACADEMIC SENATE

(newly elected from 29th October 2008)

doc. Dr. Ing. Petr Hanáček – chairperson
doc. Ing. Jana Korytářová, Ph.D. – vice-chairperson and chairperson of the Chamber of Academics
Tomáš Krejbich – vice-chairperson and chairperson of the Chamber of Students

Chamber of Academics

doc. Dr. Ing. Jan Černocký (FIT)
doc. Ing. Eva Gescheidtová, CSc. (FEEC)
doc. Dr. Ing. Petr Hanáček (FIT)
Ing. Helena Hanušová, CSc. (FBM)
PhDr. Kaliopi Chamonikola, Ph.D. (FFA)
doc. ing. Jana Korytářová, Ph.D. (FCE)
doc. Ing. Aleš Krejčí, CSc. (FCE)
RNDr. Vlasta Krupková, CSc. (FEEC)
RNDr. Hana Lepková (IFE and CSA)
Doc. Ing. Jiřina Omelková, CSc. (FC)
RNDr. Pavel Popela, Ph.D. (FME)
Ing. Jan Roupec, Ph.D. (FME)
Mgr. Blahoslav Rozbořil, Ph.D. (FFA)

Ing. Stanislav Škapa, Ph.D. (FBM)
prof. RNDr. Milada Vávrová, CSc. (FC)
prof. Ph.Dr. Hana Vykopalová, CSc. (IFE)

Chamber of Students

Bc. Stanislava Dermekova (FAST)
Bc. Patrik Halfar (FIT)
Tomaš Krejbich (FP)
Marian Maslak (FEKT)
Ing. Martin Moos (FCH)
Bc. Petra Novačkova (FSI)
Ing. Vladimír Panaček (USI)
Samuel Paučo (FaVU)

BUT AS Working Committees

LEGISLATION COMMITTEE:

doc. Ing. Eva Gescheidtová, CSc.
doc. Ing. Aleš Krejčí, CSc.
doc. Ing. Jiřina Omelková, CSc.
Ing. Jan Roupec, Ph.D. – chairperson
Mgr. Blahoslav Rozbořil, Ph.D.
students – Marian Maslak and Samuel Paučo

ECONOMIC COMMITTEE:

doc. Dr. Ing. Jan Černocký
Ing. Helena Hanušová, CSc.
PhDr. Kaliopi Chamonikola, Ph.D.
doc. Ing. Jana Korytářová, Ph.D.
RNDr. Vlasta Krupková, CSc.
RNDr. Pavel Popela, Ph.D. – chairperson
prof. RNDr. Milada Vávrová, CSc.
prof. PhDr. Hana Vykopalová, CSc.
students – Bc. Patrik Halfar, Ing. Martin Moos

PEDAGOGIC COMMITTEE:

Ing. Helena Hanušová, CSc.
RNDr. Vlasta Krupková, CSc. – chairperson
RNDr. Hana Lepková
prof. PhDr. Hana Vykopalová, CSc.
studenti – Bc. Stanislava Dermekova, Tomáš Krejbich,
Marian Maslak, Bc. Petra Novačkova, Ing. Vladimír Panaček, Samuel Paučo

BUT REPRESENTATIVES ON THE UNIVERSITY COUNCIL

doc. Ing. Eva Münsterová, CSc.
 UC presidium member
 prof. RNDr. Milada Vávrová, CSc.
 UC congress member for BUT
 BcA Petr Dub, DiS.
 UC Chamber of Students
 Ing. Martin Hrubý
 UC Chamber of Students – substitute

1. 4. BUT representation in Czech Rectors Conference, Council Of Higher Education Institutions, international and professional organizations

BUT represented in:

- Czech Rectors Conference – as a member
- Council Of Higher Education Institutions, see pages 28 and 29.

Table 1. 4. BUT Membership in international and professional organizations

Organization	Country	Status
AECEF	CZ	member
AIB (Academy of International Business)	USA	member
AIST	USA	member
AKVŠ	CZ	member
American Association for Artificial Intelligence	USA	member
American Biographical Institute	USA	member of executive committee
American Chemical Society	USA	member
American Mathematical Society (AMS)	USA	member
ASME	USA	member
Association of Chemical Companies	CZ	member
Association for the Development of Building Material Recycling in the Czech Republic	CZ	president
Czech Association of Forensic Experts and Assessors	CZ	chairman
Association for Computational Linguistics	USA	member
Cesnet, z. s. p. o.	CZ	member
CEWS (Center of Excellence Women and Science)	Germany	member
Committee of Stochastic Programming	USA	member of international committee

Conference of European Schools for Advanced Engineering Education and Research (CESAER)		member
COST ES0603, management committee	Belgium	CZ expert on steering committee
COST P20, management committee	Belgium	CZ representative on steering committee
COST 633, management committee	Belgie	zastupce za ČR v řídicím výboru
Czech Quality System	CZ	senior management system auditor
Computing and Informatics	SK	member of editorial board
Journal of General Systems	USA	member of editorial board
Journal of Electrical Engineering	SK	member of editorial board
Journal of Universal Computer Science (J.UCS)	A	member of editorial board
Forensic Engineering	CZ	editor in chief
Czech Electrical Engineering Society	CZ	member
Czech Computer Science Association	CZ	member
Czech Chamber of Authorized Engineers and Technicians operating in construction (ČKAIT)	CZ	member
Czech Logistic Association	CZ	member of presidium
Czech Mathematical Society of the Czech Union of Mathematicians and Physicists	CZ	committee member
Czech Marketing Organization	CZ	FBM is a member
Czech Marketing Association	CZ	member
Czech Marketing Association	CZ	member of main committee
Czech Society for Quality	CZ	member, QA certification (Quality Auditor) and QM (duality Manager)
Czech Society for Quality	CZ	chairperson
Czech Society for Quality	CZ	founder of creativeness and innovation group
Czech Society for Cybernetics and Informatics	CZ	member
Czech Society for Mechanics	CZ	deputy chairperson
Czech Society for Non-Destructive Testing	CZ	president
Czech Society for New Materials and Technologies	CZ	member
Czech Foundry Society	CZ	member of executive committee
Czech Welding Society	CZ	committee member
Czech Moravian Psychological Society	CZ	member
Czech-Moravian Society for Automation	CZ	committee member

Czech and Moravian Electrical and Electronic Association	CZ	member
Czech Standards Institute	CZ	member
Czech Forging Association	CZ	committee member
Czech Society For Research and Processing of Metal Sheets	CZ	committee member
Danube Rectors Conference	Austria	member
DILIA	CZ	collective member
EACES	UK	member
ECSB – European Council for Small Business EU	Finland	vice-president for CR
EIASM (European Institute for Advanced Studies in Management)	Belgium	member
EIBA – The European Business Academy	Belgium	member
ELIA	the Netherlands	member
EMAC – The European Marketing Academy		member
European Foundation for Quality Management (EFQM)	CZ	member
European Organisations for Quality (EOQ)	CZ	member
EUA	Belgium	member
EUNIS-CZ	CZ	member
European Association for Lexicography	FR	member
European Association for Theoretical Computer Science (EATCS)	Belgium	member
European Association of Chemistry and Environment		member
European Photochemistry Association		member
European University Association (EUA)	Belgium	member
Hamburg based European Association for Accident Research and Analysis (EVU)	Germany	Czech national group presidium chairman, main group presidium member
Expert group of European project „Entrepreneurship in higher education, especially within non-business studies”, European commission	EU	CR representative
Federation Internationale du Recyclage F.I.R.	the Netherlands	board member
Global Business and Technology Association (GBATA)	USA	board member
Gesellschaft für Angewandte Matematik und Mechanik (GAMM)	Germany	member
Gesellschaft für Informatik	Germany	member
Global Water Partnership (GWP)		member
Chamber of Commerce	CZ	member

IBS	USA	member
International Council of the Aeronautical Sciences (ICAS)	internat. org.	member of programme committee
International Council of the Aeronautical Sciences (ICAS)	internat. org.	representative of Czech Society for Mechanics
IGeLU	internat.org.	member
Institute of Electrical and Electronics Engineers (IEEE)	CZ	IT manager of Czechoslovak section, member
International Association for Cross-cultural Psychology	Germany	member
International Deep Drawing Research Group	the Netherlands	CR representative
International Federation for the Promotion of Mechanism and Machine Science IFtoMM	internat. org.	CR representative in robotics section
International Humic Substances Society		member
International Project Management Association	internat. org.	president of national association
International Pyrotechnics Society		member
International speech communication association	FR	member
International Water Association (IWA)		member
International Water Association (IWA)		member
Internationale Gesellschaft fur Ingenieurpadagogik	Germany	member
ISEKI-Food Association	Austria	member
SAP Public Higher Education Institutions Coordination Centre	CZ	member
Marketing and Communication	CZ	member of editorial board
International Energy Agency, ECBCS Implementation Agreement	France	CR representative in Annex AIVC
Moravian Association of Female Entrepreneurs and Managers	CZ	honorary chairperson
Moravian-Silesian Academy for Education, Science, and Arts	CZ	chairperson
National Register of Advisors	CZ	member
Polish Academy of Sciences, Foundry Committee	Poland	member
PRIME	Belgium	member
Quality Council	CZ	member of board of consultants
Waste Material Management Board - a consulting body of the Ministry of Environment	CZ	member
Raw Material Policy Board - a consulting body of the Ministry of Industries and Commerce	CZ	member

Council of Higher Education Institutions	CZ	member
Royal Society for Chemistry	UK	member
Science Steering Committee RAAD	EU	member
Association for Quality Assessment	CZ	senior assessor of CZ National Quality Prize by EFQM and CAF models
SIETAR UK (Society for Intercultural Training, Education and Research United Kingdom)	UK	member
SKIP	CZ	member
Society of Plastics Engineers (SPE)	USA	member
Association for Business Ethics	CZ	committee member
Society for Machine Tools	CZ	member of executive committee
Association for Project Management	CZ	member
State Testing Institute Brno	CZ	chairperson of certification committee
SUAleph	CZ and Slovakia	member
Union of Czech Book Sellers and Editors	CZ	member
Association of Female Entrepreneurs of the Czech Republic	CZ	vice-president
The International Society of Difference Equations	USA	member
TIES	USA	member
World Foundrymen Organisation	UK	vice-president

1.5. Women in university academic bodies

Table 1 5. Women in university academic bodies

Faculties	Deans' Advisory Board	Academic Senate	Scientific Board
FA	3/15	3/13	3/15
FCE	0/11	8/25	3/45
FFA	4/12	4/11	4/21 (Artistic Board)
FC	2/10	7/12	6/33
FEEC	2/10	5/19	2/29
FIT	1/13	0/13	2/27
FBM	5/14	11/21	8/28
FME	3/10	6/37	0/37





QUALITY AND EXCELLENCE OF ACADEMIC ACTIVITIES

2. 1. The Academic Senate

In 2008, two different bodies of senators convened. The BUT Academic Senate in office until October 2008 convened at ten ordinary and one extraordinary sessions. The newly elected senators in office from 29th October 2008 attended three more sessions in 2008.

Legislation, economics, and teaching were the main topics of 2008. A number of discussions were held to approve changes in the BUT internal regulations as well as the faculty regulations being

amended in conformance with the 2006 amendment of the university act. The reason for the regulations to be amended was also the preparation of the elections of academics senates held in the autumn. In view of the preparation of a tertiary-education white book, the BUT Academic senate paid a great deal of attention to comments on the white book by the University Council directly participating in the discussions through its representatives.

Discussing and approving the rules for setting up the BUT budget and the subsequent approval of the BUT 2008 budget were major items of the BUT Senate's agenda as well as efforts to help prepare BUT for involvement in the new type of EU programmes. Because of the new BUT strategy in this regard, the BUT Academic Senate took decisions concerning a number of property rights (purchase and sale of BUT land). The BUT AS 2008 activities were fully supported by the AS Office. Most of the BUT AS work was carried out by its permanent working committees where all issues were analysed in detail. The work done in the committees is decisive for the BUT AS competency.

At its 12 sessions, the BUT AS Legislation Committee (LC) dealt with the internal regulations of BUT, its faculties, and the Institute of Forensic Engineering. Among the most important changes in the BUT internal regulations was an amendment to the BUT Constitution and the Senate election and proceeding rules as a result of the establishment of the university Institute of Forensic Engineering. Next the LC discussed a first proposal of the life-long learning rules, amendment no. 1 to the BUT Scholarship Rules, amendments to the BUT Management and Accounting Rules, amendment no. 10 to the BUT salary structure and an amended Code of Discipline for BUT students. The LC discussed and recommended for approval to the BUT Academic Senate an amended Constitution of the Institute of Forensic Engineering (IFE) and IFE admission guidelines.

Concerning the internal faculty regulations submitted for approval, the LC recommended for approval an amendment to the constitution of the Faculty of Chemistry and election and proceeding rules of the FC academic senate, amended election and proceeding rules of the FMA academic senate and an amended Code of Discipline for FIT students. The LC discussed, commented on, and refused to approve amended rules of the faculties of architecture and fine arts. As 2008

was an election year, preparation of the BUT AS 2008- 2011 elections was among the LC's important objectives with emphasis on the unification of the BUT AS election criteria across all the electoral districts. Also, when discussing and commenting on the internal regulations of BUT faculties, the LC made every effort to support the BUT management's view and the standpoint of the BUT AS requiring the elections to the faculty AS chambers to be held in separate electoral districts. In 2008 elections to faculty academic senates were held in separate electoral districts at all the BUT faculties except the faculties of architecture and fine arts where amendments to internal faculty regulations had not yet been approved as a result of the amendment to university act in force since 1st January 2006. In 2008 the LC activities were significantly supported by cooperation with the rector's administrative department, particularly with Mgr. Pavlíková.

At its more than twenty sessions in 2008, the BUT AS Economic Committee (EC) was concerned with an update of the BUT 2008 budget rules, detailed discussion of the BUT 2008 budget, and the BUT Annual 2007 Management Report. Following an initiative by the BUT AS chairperson and the EC chairperson, the bursar submitted a study of the impacts of the relatively low wage scales on the redistribution of funding among faculties and individual staff members. Thanks to the materials submitted, a long but highly professional and matter-of-fact discussion could take place after which the BUT AS approved the bursar's proposal of an amendment of the BUT wage regulations.

The long-term trend was confirmed towards an annual reduction of non-investment funding being used for construction. In June 2008, two meetings of the EC joined by the director of the BUT Centre of Computer and Information Services, faculty secretaries, and system integrators, and vice-rector for communication technology prof. Jura. This meeting determined the amount

and recipients of the funding to be used to develop the BUT information system as well as the ways of inspections and savings.

Members of the BUT Halls of Residence and Canteens supervisory board in cooperation with the BUT AS took an active attitude towards the resolving of the problem of meals in the BUT canteens in the Spring of 2008. Thanks to the active approach of the BUT AS pedagogic and economic committees, the BUT management could decide to undertake a pilot budget initiative in support of courses for active and talented students eager to broaden their outlook organised across the BUT faculties in the years 2009/2010. Due attention was paid to the problems of the Faculty of Fine Arts with increasing the degree programme coefficients. The EC members undertook further initiatives related to economic issues particularly on the University Council forum (providing numerous comments on the tertiary-education white book, bringing up crucial questions concerning the accountability and election of supervisory board members, coming up with topical suggestions to an amendment to Act no. 130/2002 Coll., presenting concrete results of the AS 10th seminar on the quality assessment of universities held at the Jan Evangelista Purkyně University in Ústí nad Labem in January 2009, discussing university assessment indicators, participating a great deal in removing the unfair treatment of engineering programmes in evaluating the results of research and development etc.), but also within BUT.

In 2008 the BUT AS pedagogic committee continued its activities of the previous years by collecting the documents needed for pedagogic suggestions: an overview was made of the humanities offered at BUT faculties, a plan was prepared for courses offered across faculties to students wishing to complement their study portfolio by their own selection of courses taught at other faculties, and the work was continued on a methodology of calculating teachers' loads at BUT faculties.

In 2008 BUT AS further discussed in great detail and approved the BUT 2007 Annual Management Report, a 2009 update of the BUT Mission Statement, and a programme for the years 2009 to 2015 of finishing the BUT infrastructure. On a continual basis, BUT AS members were interested in the preparation of a White Book of Tertiary Education, in changing the methodology of evaluating research and development results in the Czech Republic, and in creating conditions for proposing and working on EU operative programmes as the outcomes of such activities will be crucial for BUT's position in the near future. The BUT AS members openly and justifiably voiced their findings on a number of fora including the University Council. From what was said above, it is clear that, by their pro-active approach to and concern for dealing with problems connected with the reform of tertiary education, members of the BUT AS provided a number of remarkable examples of the unique role played by the academic senates in the management of a university.

The following issues were discussed at a meeting held at Skalský Dvůr in late June 2008:

- Information on an amendment to Act no. 130/2002 Coll. and the first version of the White Book on Tertiary Education.
- BUT outlooks in all major areas (management and legislation, evaluation, research, teaching, applications, building allocation) and their impacts on the academic community.
- The new R&D assessment methodology and its expected impact on BUT.
- The results of the BUT AS activity in legislation related to the amendment of 2006 of the university act and to the establishment of the university institute.
- Courses offered across the faculties and courses in humanities offered at BUT.
- Draft strategy towards short- and long-term investment policy (principles of updating the BUT Mission Statement).

At its establishing meeting, the new BUT Academic Senate to be in office from October 2008 to October 2011 elected its chairperson and chairperson of the academic staff chamber (deputy chairperson of the BUT Academic Senate). Based on a request by the student chamber of the BUT AS, the election of the chairperson of the student chamber (deputy chairperson of the BUT Academic Senate) was postponed to the next BUT AS meeting. Next the BUT AS appointed a BUT representative for the presidium and assembly of the University Council and a BUT student representative and his deputy for the student chamber of the University Council. Following proposals by faculty academic senates, BUT AS appointed representatives of all faculties for the University Council assembly. At its next session, BUT AS appointed its representatives for the advisory bodies and rector's committees.

From the very beginning of their time in office, members of the new BUT AS student chamber, actively attended the BUT AS meetings. The student chamber started to prepare rules for giving scholarships to BUT students in need. It also regularly meets the chairpersons and their deputies of the student chambers of the BUT faculty senates. At the end of 2008 a debate was again started about changes in the BUT Study and Examination Rules, particularly about the number of examination dates. In response to this, the Student Chamber of BUT AS tries to collect as many suggestions as possible from the BUT academics. The Student

Chamber of the BUT AS is aware of the current issues of the University Halls of Residence and Canteens trying to cooperate with the director of this institution at regular sessions of the supervisory board as well as during regular personal meetings. In the long run, the Student Chamber of the BUT AS will make every effort to stay in contact with students, for example, by launching a brand new student web portal as well as encouraging students to get involved in various BUT activities.

2. 2. Numbers of accredited degree programmes

In 2008, BUT offered 77 full-time and combined degree programmes including 63 active ones with students actually registered. New degree programmes were accredited in 2008 such as Architecture and Development of Settlements, Physical and Materials Engineering and Forensic Engineering, next new degree programmes including Physical Engineering and Nanotechnologies, Management in Physical Education and a number of others. The degree programmes cover a wide spectrum of classical fields of engineering and science as well as interdisciplinary fields combining engineering with science or business. Also architectural and artistic degree programmes are accredited. Table 2.2 provides an overview of the accredited degree programmes, Table 2.2.a_1 lists the accredited degree programmes by faculties.

Tab. 2.2.a Active accredited degree programmes

Programme Groups	Degree Programmes						
	Bachelor's		Master's		follow-up Master's		doctoral
	FT	C	FT	C	FT	C	
Natural Sciences	0	0	0	0	0	0	2
Engineering	13	6	7	3	12	7	17
Economics	2	2	0	0	1	1	1
Artistic and Cultural Sciences	1	0	0	0	1	0	1
Total	16	8	8	7	14	8	21

Table 2.2.a_1 Active accredited degree programmes by faculty

Faculty	Bachelor's	follow-up Master's	Master's	doctoral	total
FA	1	0	1	1	3
FCE	4	3	2	3	12
FFA	1	0	1	1	3
FEEC	2	1	0	2	5
FC	3	3	4	5	15
FIT	1	1	0	2	4
FBM	2	1	0	1	4
FSI	2	2	2	7	13
IFE	0	1	0	1	2
Total	16	12	10	23	61

2. 3. Courses taught in foreign languages, joint programmes (double degree), degree programmes of a public higher-education institution accredited in a foreign language

BUT devotes much of its attention to courses taught in a foreign language, especially in English. Most of the programmes are accredited to be taught both in Czech and in English.

Table 2.3. lists the active programmes accredited to be taught in English for which students have signed up. Also degree programmes offered jointly with foreign universities begin to be prepared for accreditation. At present there are three fully fledged joint-degree programmes offered, with further being prepared.

Table 2.3. BUT degree programmes accredited to be taught in English

accredited programme groups	degree programmes						Total programmes	
	Bachelor's		Masters		Follow-up Master's			Doctoral
	FT	C	FT	C	FT	C		
Natural Sciences	0	0	0	0	0	0	4	4
Engineering	2	0	1	0	3	0	2	8
Economics	0	0	0	0	1	0	2	3
Total	2	0	1	0	4	0	8	15

2. 4. Degree programmes accredited to be jointly offered by BUT and a specialised institution of higher-education

At present there is no degree programme at BUT offered jointly with a specialised institution of higher-education.

2.5 Numbers of university lifelong-learning courses

Table 2.5 Numbers of university lifelong-learning courses

Programme groups	Profession-oriented courses			Special-interest courses			U3A
	up to 15 lessons	up to 100 lessons	more	up to 15 lessons	up to 100 lessons	more	
natural sciences							2
engineering	5	3					37
agriculture, forestry, and veterinary							
health care, medicine, pharmacy							4
social sciences and services							
economics							2
law, public administration							
pedagogy, teaching, social care		1					
psychology fields		1					
artistic and cultural sciences							5
total	5	5	2				50

Note: U3A – University of the third age.

2.6 Student numbers of university lifelong-learning courses

Table 2.6 Student numbers of university lifelong-learning courses

programme groups	profession-oriented courses			special-interest courses			U3A
	up to 15 lessons	up to 100 lessons	more	up to 15 lessons	up to 100 lessons	more	
natural sciences							42
engineering	91	46					624

agriculture, forestry, and veterinary						
health care, medicine, pharmacy						147
social sciences and services						
economics						19
law, public administration						
pedagogy, teaching, social care		20				
psychology fields		12				
artistic and cultural sciences						448
total	91	78				1280

Note: U3A – University of the third age.

2. 7. BUT Study Candidates

Long term statistics show that the demand for studying at BUT is constantly increasing. The number of applications submitted in 2008 reached almost twenty thousand with the students actually enrolled being by six hundred more than in the autumn of 2007. The percentage of the students

actually enrolled out of the total of those admitted is growing, too. This means that, of all the applications submitted to different universities, the candidates are likely to choose the one submitted to our university. Table 2.7 indicates the interest of candidates in individual degree programmes.

Tab. 2.7. BUT Study Candidates

Accredited programme groups	number				
	applications submitted	applications registered	candidates eligible	candidates admitted	candidates enrolled
natural sciences	18	17	16	16	15
engineering	15246	12753	11126	10628	8239
economics	4252	3337	2544	1543	1254
artistic and cultural sciences	464	447	105	105	104
total	19980	16554	13791	12292	9612

2. 8. Students In Accredited Degree Programmes

In recent years, there has been a moderate and steady increase in enrolled student numbers. Maintaining the excellence of the students admitted is the university's long-term policy, which is the reason why admission examinations are required at all BUT faculties. Table 2.8 shows the student numbers on 31st October 2008 arranged by degree-programme groups and levels of tertiary

education. No more students are admitted to the long non-follow-up Master's programmes with their numbers dropping rapidly and the proportion of students enrolled to follow-up Master's programmes growing. Table 2.8_1 lists total student numbers including suspended studies while, in Table 2.8_2, these are grouped by programme types, in Table 2.8_3 by faculties, and in Table 2.8_4 by degree programmes. Table 2.8_5 lists international student numbers

Tab. 2.8. Student numbers in accredited programmes on 31st October 2008

Accredited programme groups	Students in the programme								total
	Bachelor's		Master's		follow-up Master's		doctoral		
	FT	C	FT	C	FT	C	FT	C	
natural Sciences	0	0	0	0	0	0	38	29	67
engineering	11709	1245	397	69	3926	331	908	994	19579
economics	1348	77	0	0	839	434	46	92	2836
artistic and cultural sciences	172	0	0	0	106	0	14	0	292
total	13229	1322	397	69	4871	765	1006	1115	22774

Tab. 2.8_1 Student Numbers Including Suspended Studies Arranged by Programmes

Programme groups	master group code	students in programmes				total students
		Bachelor's	follow-up Master's	Master's	doctoral	
engineering	23 - 29	12954	466	4257	1902	19579
artistic and cultural sciences	82	172	0	106	14	292
natural sciences	14	0	0	0	67	67
economics	62	1425	0	1273	138	2836
Total		14551	446	5636	2121	22774

Tab. 2.8_2 Student numbers arranged by programme type

Programme type		Programme type		
		full-time	combined	total
Bc.	Bachelor's	13229	1322	14551
Ing./Mgr.	follow-up Master's	397	69	466
Ing./Mgr.	Master's	4871	765	5636
Ph.D.	doctoral	1006	1115	2121
Total		19503	3271	22774

Tab. 2.8_3 Student numbers arranged by faculty and programme type

Faculty	Bachelor	Master	Follow-up Master	Doctoral	Total
FA	438	0	204	77	719
FCE	4789	345	619	526	6279
FFA	172	0	106	14	292
FC	611	13	236	176	1036
FEEC	2458	0	1230	396	4084
FIT	1881	0	712	157	2750
FBM	1425	0	1273	138	2836
FME	2777	108	1156	542	4583
IFE	0	0	100	95	195
Total	14551	466	5636	2121	22774

Tab. 2.8_4 Student numbers arranged by faculty and degree programme

Faculty	Progr. code	Title	Men	Women	FT	C	Total
FA	B3501	Architecture and Town-Planning/Erasmus	197	241	438	0	438
FA	P3501	Architecture and Town-Planning	43	34	32	45	77
FA	N3501	Architecture and Town-Planning	104	100	24	0	204
FCE	P3646	Geodesy and Cartography	11	7	11	7	18
FCE	N3646	Geodesy and Cartography	51	49	100	0	100
FCE	P3607	Civil Engineering	353	143	205	291	496
FCE	P3917	Forensic Engineering	7	5	0	12	12
FCE	B3609	Building	108	28	136	0	136
FCE	B3607	Civil Engineering	3073	1148	3686	535	4221
FCE	B3503	Architecture of Building Structures	72	116	188	0	188
FCE	M3646	Geodesy and Cartography	5	9	14	0	14
FCE	M3607	Civil Engineering	261	70	264	67	331
FCE	N3607	Civil Engineering	356	163	519	0	519
FCE	N3501	Architecture and settlement development	0	0	0	0	0
FCE	B3646	Geodesy and Cartography	132	112	211	33	244
FFA	B8206	Fine Arts	78	94	172	0	172
FFA	P8206	Fine Arts	5	9	14	0	14

FFA	N8206	Fine Arts	45	61	106	0	106
FC	P2901	Chemistry and Food Technology	1	12	11	2	13
FC	N2901	Chemistry and Food Technology	12	99	91	20	111
FC	M2805	Environmental Chemistry and Technology	1	2	3	0	3
FC	N2806	Consumer Chemistry	7	29	32	4	36
FC	B2901	Chemistry and Food Technology	28	101	113	16	129
FC	B2825	Public Protection	48	40	88	0	88
FC	P1405	Macromolecular Chemistry	16	6	11	11	22
FC	P2820	Chemistry, technology, and material properties	22	14	22	14	36
FC	M2806	Consumer Chemistry	0	1	1	0	1
FC	N2805	Environmental Chemistry and Technology	15	32	37	10	47
FC	M2901	Chemistry and Food Technology	1	7	7	1	8
FC	N2820	Chemistry, technology, and material properties	28	14	38	4	42
FC	B2801	Chemistry and Chemical Technology	152	242	357	37	394
FC	P2805	Environmental Chemistry and Technology	24	36	28	32	60
FC	M2808	Chemistry and Technology of Materials	1	0	1	0	1
FC	P1404	Physical Chemistry	17	28	27	18	45
FEEC	P2643	Electrical Engineering, Electronics, Communication and Control Technology	144	6	27	123	150
FEEC	P2613	Electrical Engineering and Communication	232	14	199	47	246
FEEC	B3930	Bio-medicinal Technology and Bio-informatics	99	63	162	0	162
FEEC	B2643	Electrical Engineering, Electronics, Communication and Control Technology	2252	44	1997	299	2296
FEEC	N2643	Electrical Engineering, Electronics, Communication and Control Technology	1194	36	1115	115	1230
FIT	B2646	Information Technology	1795	86	1881	0	1881
FIT	P2651	Computing Technology and Informatics	20	1	19	2	21
FIT	P2646	Information Technology	124	12	79	57	136
FIT	N2646	Information Technology	691	21	712	0	712
FBM	B6208	Economics and Management	342	450	730	62	792
FBM	N6208	Economics and Management	674	599	839	434	1273
FBM	P6208	Economics and Management	88	50	46	92	138
FBM	B6209	Systems Engineering and Informatics	549	84	618	15	633

FME	N2301	Mechanical Engineering	869	47	745	171	916
FME	P3910	Physical and materials engineering	78	12	43	47	90
FME	B2341	Mechanical Engineering	2344	136	2155	325	2480
FME	M2301	Mechanical Engineering	98	10	107	1	108
FME	P3901	Applied Sciences in Engineering	73	3	34	42	76
FME	P3917	Forensic Engineering	0	0	0	0	0
FME	P3913	Applied Natural Sciences	28	8	13	23	36
FME	P3920	Metrology and Testing	25	15	11	29	40
FME	B3901	Applied Sciences in Engineering	247	50	297	0	297
FME	P2302	Machinery and Equipment	228	15	111	132	243
FME	P2303	Manufacturing Technology	45	12	24	33	57
FME	N3901	Applied Sciences in Engineering	182	58	233	7	240
IFE	P3917	Forensic Engineering	68	27	39	56	95
IFE	N3917	Forensic Engineering	60	40	100	0	100
Total			17823	4951	19503	3271	22774

Tab. 2.8_5 International student numbers

Programme type		International students
Bc.	Bachelor's	1 331
Mgr.	Master's	12
Mgr.	follow-up Master's	687
Ph.D.	doctoral	136
Total		2166

2. 9. Graduates

The number of BUT graduates has been increasing from year to year. With the last long Master's degree programme students finishing gradually their studies, the number of students graduating from Bachelor's and Follow-Up Master's programmes is increasing. The numbers arranged by programmes and degrees of tertiary education are shown in Table 2.9; Table 2.9_1 lists 2008 graduates by faculty and programme. Table 2.9_2 lists the graduate numbers by faculty. Table 2.9.2 lists details of doctoral graduates including their supervisors and the titles of their theses. Table 2.9_4 shows 2008 graduates with awards.

Table 2.9 Graduates from BUT accredited degree programmes from 1st January 2008 to 31st December 2008

accredited degree programme groups	Graduates from degree programme								Total graduates
	Bachelor's		Master's		Follow-up Master's		Doctoral		
	FT	C	FT	C	FT	C	FT	C	
natural sciences	0	0	0	0	0	0	4	9	13
engineering	2106	117	1206	23	833	33	25	123	4466
economics	309	38	0	0	226	150	0	11	734
artistic and cultural sciences	38	0	0	0	35	0	0	0	73
Total	2 453	155	1 206	23	1094	183	29	143	5286

Table 2.9_1 Graduates from accredited degree programmes from 1st January 2008 to 31st December 2008 arranged by faculty and programme

Faculty	Programme	Male students	Female students	including international students	Total
FA	B3501	41	43	6	84
FA	P3501	0	2	0	2
FA	N3501	47	24	1	71
FCE	B3607	353	162	30	515
FCE	P3917	0	2	0	2
FCE	P3646	1	0	0	1
FCE	B3646	22	28	0	30
FCE	P3607	20	10	0	30
FCE	M3646	28	23	1	51
FCE	B3609	4	5	0	9
FCE	M3607	456	187	11	642
FFA	N8206	17	18	3	35
FFA	B8206	15	23	4	38
FC	N2806	1	2	0	3
FC	P1404	5	8	0	13
FC	B2901	4	44	7	48

FC	B2801	25	36	2	61
FC	M2806	7	23	0	30
FC	M2901	10	27	0	37
FC	P2820	3	1	0	4
FC	N2901	0	13	0	13
FC	M2805	11	25	1	36
FC	N2805	1	3	0	4
FC	P2805	2	6	0	8
FC	N2820	1	2	0	3
FC	M2808	16	6	0	22
FEEC	N2643	464	9	12	473
FEEC	P2643	40	1	6	41
FEEC	B2643	614	17	72	631
FIT	P2646	5	0	0	5
FIT	B2646	302	12	52	314
FIT	N2646	175	7	14	182
FBM	P6208	9	2	0	11
FBM	N6208	197	179	8	376
FBM	B6209	129	42	17	171
FBM	B6208	74	102	4	176
FME	N2301	76	12	4	88
FME	B3901	43	15	4	58
FME	P3901	4	0	0	4
FME	B2341	426	27	26	453
FME	P2302	24	0	0	24
FME	M2301	370	41	9	411
FME	P3910	9	1	2	10
FME	P3920	4	0	0	4
FME	M3901	24	5	1	29
FME	P2303	7	2	0	9
FME	P3913	2	0	0	2
IFE	P3917	1	1	0	2
Total		4088	1198	302	5286

Table 2.9_2 Graduates from accredited degree programmes from 1st January 2008 to 31st December 2008 arranged by faculty

faculty	graduates from degree programme				total graduates
	Bachelor's	Master's	follow up Master's	doctoral	
FA	84	0	71	2	157
FCE	574	693	0	33	1300
FFA	38	0	35	0	73
FC	109	125	23	25	282
FEEC	631	0	473	41	1145
FIT	314	0	182	5	501
FBM	347	0	376	11	734
FME	511	411	117	52	1091
IFE	0	0	0	2	2
total	2608	1229	1277	171	5285

Tab. 2.9_3 BUT 2008 Doctoral Graduates

Fac.	Name	Theme	Supervisor
FCE	Ing. Petr Sedlák	Analysis of the outer strata series of overcladding systems.	Supervisor: doc. Ing. Karel Dočkal, CSc.
FCE	Ing. Vít Koverdinský	Thermal insulation with capillary conducting fabric.	Supervisor: Ing. Karel Čupr, CSc.
FCE	Ing. Aleš Rubina	Air conditioning systems for clean spaces in health care.	Supervisor: doc. Ing. Jiří Hirš, CSc.
FCE	Ing. arch Iva Košíčková	Attic built-in systems and penthouses – applying roof illuminating structures.	Supervisor: doc. Ing. arch. Jarmila Ledinská, CSc.
FCE	Ing. Pavel Šulák	Analysis of masonry structures additionally reinforced by ropes.	Supervisor: doc. Ing. Zdeněk Bažant, CSc.
FCE	Ing. Milan Pilgr	Problems of the actual effect of joints with a short front plate in steel structures.	Supervisor: prof. Ing. Jindřich Melcher, DrSc.
FCE	Ing. Milan Štukavec	Reducing noise and vibrations in building structures using recycled elastomers.	Supervisor: doc. Ing. Jiří Sedlák, CSc.
FCE	Ing. Dagmar Michoínová	Study of historic procedures for making lime mortars to be used to repair architectural monuments.	Supervisor: prof. RNDr. Pavla Rovnaníková, CSc.
FCE	Mgr. Markéta Štefková	Non-destructive testing of building materials using methods of acoustic and electromagnetic emission.	Supervisor: prof. Ing. Bohumil Koptavý, CSc.
FCE	Ing. Tomáš Gross	Using industrial waste in reactive powder concretes.	Supervisor: Ing. Zdeněk Jeřábek, CSc.

FCE	Ing. Dana Tomíčková	Low-energy aluminium-silicate binder die from waste materials used to stabilize / solidify heavy metals.	Supervisor: prof. RNDr. Pavla Rovnaníková, CSc.
FCE	Ing. Martin Čermák	Rehabilitation and reuse of monuments: medieval strongholds in Moravia.	Supervisor: doc. Ing. arch. Jarmila Ledinská, CSc.
FCE	Ing. et Ing. Šárka Matyášová	Multi-criteria optimization of business activities in a building company.	Supervisor: doc. Ing. Jana Korytářová, Ph.D.
FCE	Ing. Michal Radimský	Noise analyses applied to the public rail transport.	Supervisor: doc. Ing. Jaroslav Smutný, Dr.
FCE	Mgr. Ibrahim Aliwi	Building investment in Syria.	Supervisor: doc. Ing. Bohumil Puchýř, CSc.
FCE	Ing. Sylva Klímová	Influence of cover structures on the interior temperature of penthouses.	Supervisor: Ing. Danuše Čuprová, CSc.
FCE	Ing. Ladislav Skuda	Protection of concrete structures by epoxid resins using filling from waste materials.	Supervisor: prof. Ing. Rostislav Drochytka, CSc.
FCE	Ing. Radek Steuer	Study of the basic physical properties of the materials used to overclad buildings in terms of reducing the humidity.	Supervisor: doc. Ing. Jiří Vala, CSc.
FCE	Ing. Václav Veselý	Confronting a model in geotechnics.	Supervisor: Ing. Lumír Miča, Ph.D.
FCE	Ing. Radovan Zrůbek	Efficient management of human resources as a factor of company management.	Supervisor: doc. Ing. Bohumil Puchýř, CSc.
FCE	Mgr. Jana Bílková	Study of the impact of the parameters of concrete on the propagation of mechanical waves using an impact-echo method.	Supervisor: doc. Ing. Luboš Pazdera, CSc.
FCE	Ing. Adam Hubáček	Study aerated-concrete related issues.	Supervisor: doc. Ing. Rudolf Hela, CSc.
FCE	Ing. Jan Králík	Real estate transactions in terms of surveying.	Supervisor: RNDr. Ladislav Plánka, CSc.
FCE	Ing. Barbara Kucharczyková	Analysis of the influence of the properties of light structural concrete from porous aggregate on its use in supporting structures.	Supervisor: prof. Ing. Jiří Adámek, CSc.
FCE	Ing. Michal Matysík	Research of nonlinear acoustic spectroscopy for flaw detection in building.	Supervisor: doc. Ing. Marta Kořenská, CSc.
FCE	Ing. Kateřina Mihalíková	Development of polymer-cement mortars from waste material and their preservability.	Supervisor: prof. Ing. Rostislav Drochytka, CSc.
FCE	Ing. Antonín Vojtěšek	Measuring and assessing the non-skidding properties of roads.	Supervisor: doc. RNDr. Josef Dalík, CSc.
FCE	Ing. Petra Zuzáňáková	Real-estate assessment in assessing companies.	Supervisor: doc. Ing. Leonora Marková, Ph.D.
FCE	Ing. Tomáš Kučera	Multi-criteria optimization of annual ware-supply network maintenance planning.	Supervisor: Ing. Ladislav Tuhovčák, CSc.
FCE	Ing. Stanislav Malaník	Support for planning renewal of sewer networks.	Supervisor: doc. Ing. Petr Hlavínek, CSc.

FCE	Ing. Miloš Rozkošný	Assessment of the efficiency of vegetative root waste water treatment plants and ways of improving their functioning.	Supervisor: prof. Ing. Jan Šálek, CSc.
FCE	Ing. Jana Piecha	Ways of employing renewable resources and energy saving in the Czech market environment.	Supervisor: doc. Ing. Jiří Hirš, CSc.
FCE	Ing. et Ing. Dušan Chovanec	Analysing a model of the financial plan of a building company using a cost and organisational structure.	Supervisor: doc. Ing. Alena Tichá, Ph.D.
FCE	Ing. Jitka Chovancová	Devising an integral strategy of a building company using competitor analysis and balanced scorecard elements.	Supervisor: doc. Ing. Alena Tichá, Ph.D.
FME	Ing. Ondřej Bílek	Efficient grinding of metal and plastic materials.	Supervisor: doc. Ing. Imrich Lukovics, CSc.
FME	Ing. Jaroslav Boráň	Processing sludge from waste water treatment plant for power producing purposes.	Supervisor: prof. Ing. Petr Stehlík, CSc.
FME	Ing. Pavel Doležal	Influence of manganate and copper on the mechanical properties and micro-heterogeneity of alloys with ball graphite.	Supervisor: doc. Ing. Jaroslav Šenberger, CSc.
FME	Ing. Pavel Heriban	Computer aided modelling of comprehensive drive systems.	Supervisor: prof. Ing. Ctirad Kratochvíl, DrSc.
FME	Ing. Ivo Konvalina	Quantification of the detecting activity of a secondary electron detector in REM.	Supervisor: Ing. Ilona Müllerová, DrSc.
FME	Ing. Jan Košner	Experimental research of flow in a ventilated room.	Supervisor: doc. Ing. Milan Pavelek, CSc.
FME	Ing. Jiří Kovář	Theory and practice of high-speed milling.	Supervisor: doc. Ing. Imrich Lukovics, CSc.
FME	Ing. Martin Musil	Methodology and practical application of risk analysis for assessing the agreement of engine plants.	Supervisor: prof. Ing. Josef Vačkář, CSc.
FME	Ing. Richard Nekvasil	Solving problems of extreme and thermal load of apparatuses.	Supervisor: prof. Ing. Stanislav Vejvoda, CSc.
FME	Ing. Ladislav Ošlejšek	Optimization of the calibration of comparative measuring instruments.	Supervisor: doc. Ing. Jiří Pernikář, CSc.
FME	Ing. Ladislav Plšek	Influence of geometric differences on the resulting precision of tripod positioning.	Supervisor: doc. Ing. Radek Knoflíček, Dr.
FME	Ing. Martin Piskovský	Modelling devices used in combustion systems and combustion product cleaning in waste thermal treatment plants.	Supervisor: prof. Ing. Petr Stehlík, CSc.
FME	Ing. Simona Pospíšilová	Influence of alitossilication on the structure and properties of cast nickel super alloys.	Supervisor: prof. Ing. Tomáš Podrábský, CSc.
FME	Ing. Bohuslav Kilkovský	Modelling a device for heat exchange in thermal processing.	Supervisor: doc. Ing. Zdeněk Jegla, Ph.D.

FME	Ing. Martin Pavlas	System of calculating technology parameters of processes including power aspects.	Supervisor: prof. Ing. Petr Stehlík, CSc.
FME	Ing. Libor Urbanec	Numerical simulations of elastohydrodynamically lubricated circular contact of non-smooth surfaces.	Supervisors: prof. Ing. Přemysl Janíček, DrSc. and doc. Ing. Ivan Křupka, Ph.D.
FME	Ing. Aleš Nosek	Measuring the efficiency of processes.	Supervisor: doc. Ing. Alois Fiala, CSc.
FME	Mgr. Abdel Rahman Youssef Mohamed Lashin	Structural and phase analysis of iron-silicon alloy surfaces.	Supervisor: Ing. Oldřich Schneeweiss, DrSc.
FME	Ing. Jan Bořkovec	Computer simulation of the process of material division.	Supervisor: prof. Ing. Jindřich Petruška, CSc.
FME	Ing. Robert Botlík	Polymer forming tools.	Supervisor: doc. Ing. Miroslav Maňas, CSc.
FME	Ing. Michal Buksa	Fatigue properties of ultra-fine-grained materials.	Supervisor: prof. RNDr. Ludvík Kunz, CSc.
FME	Ing. Jana Dvořáková	Using information relationships in technological processes for computer-aided production.	Supervisor: doc. Ing. Miroslav Píška, CSc.
FME	Ing. Martin Juliš	Low-cycle fatigue of selected nickel super alloys in high temperatures.	Supervisor: prof. Ing. Tomáš Podrábský, CSc.
FME	Ing. Daniel Koutný	Experimental study of the behaviour of water contaminated lubrication films.	Supervisor: doc. Ing. Ivan Křupka, Ph.D.
FME	Ing. Jan Mintách	Fatigue properties of nickel super alloys in high medium voltages.	Supervisor: prof. RNDr. Ludvík Kunz, CSc.
FME	Ing. Jan Müller	Computer and experimental analysis of the dynamic properties of a hydrodynamic absorber with pushed out limit layer.	Supervisor: prof. Ing. Eduard Malenovský, DrSc.
FME	Ing. Kamil Podaný	Problems of limit formability of components from tubes.	Supervisor: prof. Ing. Radko Samek, CSc.
FME	Ing. Josef Sedlák	Production technology of prototypes with CAD/CAM and reverse engineering support.	Supervisor: doc. Ing. Miroslav Píška, CSc.
FME	Ing. Martin Šindelář	Monitoring the technical condition of the rear wheel suspension of a vehicle.	Supervisor: doc. Ing. Ivan Mazůrek, CSc.
FME	Ing. Eva Šmehlíková	Contribution to the radial stretching tight of axially symmetrical components.	Supervisor: prof. Ing. Radko Samek, CSc.
FME	Ing. Miroslav Urbánek	Asymptotic properties of linear dynamic equations with lag.	Supervisor: doc. RNDr. Jan Čermák, CSc.
FME	Ing. Antonín Záděra	Secondary oxidation of steel.	Supervisor: doc. Ing. Jaroslav Šenberger, CSc.
FME	Ing. David Hrazdíra	Reduction of the number of volatile organic compounds in bentonite mixtures through advanced oxidation processes.	Supervisor: prof. Ing. Karel Rusín, DrSc.

FME	Ing. Petr Kachlík	Defects in bonded joints, their simulation and computer modelling.	Supervisor: doc. Ing. Josef Klement, CSc.
FME	Ing. Lubomír Kováčik	3D reconstructions of microbiological objects from their projections.	Supervisor prof. RNDr. Jiří Komrska, CSc.
FME	Ing. David Paloušek	Analysis of comprehensive reliability of a transtibial prosthesis.	Supervisor: doc. Ing. Pavel Mazal, CSc.
FME	Ing. Jiří Škorpík	Contribution to the design of a Stirling motor.	Supervisor: prof. Ing. Jaroslav Kadrnožka, CSc.
FME	Ing. Michal Urbánek	Reflectometry: design and application of a device.	Supervisor doc. RNDr. Jiří Spousta, Ph.D.
FME	Ing. Marian Formánek	Design of energy saving cooling devices.	Supervisor: doc. Ing. Milan Pavelek, CSc.
FME	Ing. Petr Jurák	Estimates of discrete probability distributions using quasinorms.	Supervisor: doc. RNDr. Zdeněk Karpíšek, CSc.
FME	Ing. Jaroslav Kašpárek	Optimization of the compactifying effects of vibration cylinders.	Supervisor: doc. Ing. Miroslav Škopán, CSc.
FME	Ing. Jan Otáhal	Experimental research of two-phase flows in effervescent jets.	Supervisor: prof. Ing. Miroslav Jícha, CSc.
FME	Ing. Filip Plešinger	Analysing the readability of communicators in industrial design.	Supervisor: prof. Ing. Přemysl Janíček, DrSc.
FME	Ing. Přemysl Pokorný	Identification of loading conditions of supporting structures of machine sets.	Supervisor: doc. Ing. Břetislav Mynář, CSc.
FME	Ing. Břetislav Skalka	Complex analysis of the deformation stability of break resistor segments.	Supervisor: prof. Ing. Jindřich Petruška, CSc.
FME	Ing. Tomáš Králík	Methods of measuring thermal radiation of design materials for cryogenics.	Supervisor: RNDr. Věra Musilová, CSc.
FME	Ing. Ondřej Schaumann	System of assistance to the victims of airplane crashes and their families.	Supervisor: doc. Ing. Slavomír Vosecký, CSc.
FME	Ing. Milan Dvořák	Development of low-cost and classic air travel companies in the Czech Republic after EU accession.	Supervisor: prof. Ing. Bohuslav Sedláček, CSc.
FME	Ing. Luboš Kotek	Risk analysis of hydrogen technology	Supervisor: prof. Ing. František Babinec, CSc.
FME	Ing. Jindřich Finda	Methods of determining the extent and periodicity of maintenance of airplanes/ airplane units.	Supervisor: prof. Ing. Antonín Pištěk, CSc.
FME	Ing. Michal Mališ	Applying impact tests to airplane structures.	Supervisor: prof. Ing. Antonín Pištěk, CSc.
FME	Ing. Miroslav Pešák	Optimizing aviation structures minimizing their weight.	Supervisor: prof. Ing. Antonín Pištěk, CSc.
FEEC	Ing. Ondřej Hála	Design and optimisation of broadband TV distribution networks.	Supervisor: prof. Ing. Václav Říčný, CSc.
FEEC	Ing. Zdeněk Růžička	Models used to examine the influence of interference on the UMTS signal qualitative parameters.	Supervisor: prof. Ing. Stanislav Hanus, CSc.

FEEC	Ing. Vladimír Holcman	Dielectric relaxation spectroscopy of composite systems.	Supervisor: doc. Ing. Karel Liedermann, CSc.
FEEC	Ing. Rostislav Stráník	Dielectric relaxation spectroscopy of glycerol.	Supervisor: doc. Ing. Karel Liedermann, CSc.
FEEC	Ing. Kamil Bodeček	Image compression in interactive applications of digital TV broadcast.	Supervisor: prof. Ing. Kamil Vrba, CSc.
FEEC	Ing. Petr Daněček	Attacks on cryptographic modules.	Supervisor: doc. Ing. Václav Zeman, Ph.D.
FEEC	Ing. Zbyněk Fedra	Dynamics of orthogonal systems with multiple carriers and its reduction.	Supervisor: prof. Ing. Vladimír Šebesta, CSc.
FEEC	Ing. Pavel Chytil	Detection of diseases by voice analysis.	Supervisor: prof. Ing. Milan Sigmund, CSc.
FEEC	Ing. Vojtěch Stejskal	Automatic segmentation of speech and identification of pauses.	Supervisor: Ing. Robert Vích, DrSc.
FEEC	Ing. Karel Horák	Application of image-recognition methods in defectoscopy.	Supervisor: doc. Ing. Jozef Honec, CSc.
FEEC	Mustafa M. Abdalla Ahmed	Characterization of thin-layer electroluminiscent parts.	Supervisor: prof. RNDr. Pavel Tománek, CSc.
FEEC	Ing. Jaroslav Vrána	Quadrature mirror filter bases with sigma-delta modulators.	Supervisor: prof. Ing. Zdeněk Smékal, CSc.
FEEC	Ing. Vítězslav Krčmář	Reception antennae for passive monitoring systems.	Supervisor: doc. Ing. Zdeněk Nováček, CSc.
FEEC	Ing. Tomáš Urbanec	Special methods of microwave vector measurements.	Supervisor: prof. Ing. Jiří Svačina, CSc.
FEEC	Abdurrazag Giuma A Tamtam	Framework for assessing the qualitative aspects of information systems.	Supervisor: Ing. Karol Molnár, Ph.D.
FEEC	Ing. Issa El Dbib	Design techniques for low-voltage current conveyors.	Supervisor: prof. Ing. Jaromír Brzobohatý, CSc.
FEEC	Ing. Ondřej Jež	Moile robot navigation in an unknown environment using distance measurements.	Supervisor: doc. Ing. Luděk Žalud, Ph.D.
FEEC	Ing. Tomáš Neužil	Continual localization and surveying by a mobile robot.	Supervisor: prof. Ing. František Šolc, CSc.
FEEC	Ing. Vladimír Axman	Circuits with modern active components.	Supervisor: prof. Ing. Tomáš Dostál, DrSc.
FEEC	Ing. Michal Bernard	Influence of the development of renewable resources (wind turbines) on the Czech Power System.	Supervisor: doc. Ing. Antonín Matoušek, CSc.
FEEC	Ing. Tomáš Brich	Digitally controlled analogue function blocks an systems.	Supervisor: prof. Ing. Jaromír Brzobohatý, CSc.
FEEC	Ing. Milan Březina	Masking errors in wireless telecommunication systems.	Supervisor: doc. Ing. Ivan Rampl, CSc.
FEEC	Ing. Tomáš Cibulka	Ways of optimizing the design of asynchronous devices using methods of artificial intelligence.	Supervisor: doc. Ing. Čestmír Ondrůšek, CSc.

FEEC	Ing. Petr Čambala	Combined solar energy converters.	Supervisor: Ing. Jan Gregor, CSc.
FEEC	Ing. Pavel Černocho	Signal detection by a segment insulation detector in an environmental SEM.	Supervisor: doc. Ing. Josef Jiráček, CSc.
FEEC	Ing. Emil Kalina	Applying ultracapacitors in transport systems.	Supervisor: doc. Ing. Pavel Vorel, Ph.D.
FEEC	Ing. Kamil Nováček	Amplifiers in a current mode.	Supervisor: prof. Ing. Jaromír Brzobohatý, CSc.
FEEC	Ing. Bohdan Růžička	Wavelength standard for band C optical communication.	Supervisor: prof. Ing. Otakar Wilfert, CSc.
FEEC	Ing. Alexey Andreev	Noise spectroscopy of radiation detectors.	Supervisor: doc. Ing. Lubomír Grmela, CSc.
FEEC	Ing. Anna Kubánková, née Shklyaeva	Automatic classification of digital modulations.	Supervisor: doc. Ing. Vít Novotný, Ph.D.
FEEC	Ing. Petr Stančík	Optoelectronic and photogrammetric systems of measurement.	Supervisor: prof. Ing. Václav Říční, CSc.
FEEC	Ing. Jiří Majzner	Electronic noise of piezoceramic sensors of acoustic emission.	Supervisor: prof. Ing. RNDr. Josef Šikula, DrSc.
FEEC	Ing. Radim Číž	Modelling and analysis of the operation of digital subscriber lines.	Supervisor: prof. Ing. Zdeněk Smékal, CSc.
FEEC	Ing. Ondřej Hégr	Nature of nanostructures deposited by high-frequency magnetron spraying.	Supervisor: doc. Ing. Jaroslav Boušek, CSc.
FEEC	Ing. Vilém Neděla	Detection of signal electrons in the high-pressure gas of an environmental scanning electron microscope.	Supervisors: prof. Ing. Rudolf Atrata, DrSc., and doc. Ing. Josef Jiráček, CSc.
FEEC	Ing. Jakub Žajdlík	Design and control of a hand prosthesis.	Supervisor: prof. Ing. Jiří Skalický, CSc.
FEEC	Ing. Marcel Janda	Thermal optimization of the components of electric devices.	Supervisor: doc. Dr. Ing. Hana Kuchyňková
FEEC	Mohamed Abdulsalam Shaban Ali	Analysis of electric devices using models with concentrated parameters.	Supervisor: doc. Ing. Čestmír Ondrůšek, CSc.
FEEC	Ing. Jan Čermák	Not fully determined blind separation of sound signals.	Supervisor: prof. Ing. Zdeněk Smékal, CSc.
FEEC	Ing. Peter Barath	H ₂ -O ₂ fuel cells with annex and bipolar membranes.	Supervisor: doc. Ing. Marie Sedlaříková, CSc.
FEEC	Ing. Jaromír Makovička	The negative electrode of a lithium and secondary cell.	Supervisor: doc. Ing. Marie Sedlaříková, CSc.
FA	Ing. Yvona Opatová	Brownfields – greenfields – town. The role of verdure in reusing a town's ravaged areas.	Supervisor: doc. Ing. arch. Gabriel Kopáček, Dr.
FA	Ing. Mária Mroščáková	The reflection of a landscape in the image of a settlement.	Supervisor: doc. Ing. arch. Vladimíra Šilhánková, Ph.D.

FA	Ing. arch. Robert Rais	Categorization and setting up of a development series of chandeliers – integral parts of historic interiors.	Supervisor: doc. Ing. Miloslav Meixner, CSc.
FC	Ing. Jana Drbohlavová	Preparation of photocatalytic active surfaces.	Supervisor: doc. Ing. Michal Veselý, CSc.
FC	Ing. Karína Čiháková	Study of the sorption of micro-concentrations of chrome, molybdenum, and vanadium in a multi-component system on different sorbents to determine their ICP-OES in waters.	Supervisor: prof. RNDr. Lumír Sommer, DrSc.
FC	Ing. Jana Hrdličková	Using micro organisms to produce and biodegrade selected types of bio molecules.	Supervisor: doc. RNDr. Ivana Márová, CSc.
FC	Ing. David Hynek	Isoconversion methods in chemical kinetics.	Supervisor: prof. Ing. Peter Šimon, DrSc.
FC	Ing. Iva Králová	Study of printability of thin polymer strata.	Supervisor: doc. Ing. Michal Veselý, CSc.
FC	Ing. Dana Kubátová	Study of the surface charge of high-dispersion silicate-based systems.	Supervisor: doc. Ing. Jaromír Havlica, DrSc.
FC	Ing. Lubomír Laichman	Binders of fourth-generation forming mixtures on the basis of biogenic polymers.	Supervisor: prof. Ing. Milan Drdák, DrSc. and prof. Ing. Jiří Brandštet, DrSc.
FC	Ing. Andrea Mikulcová	Contribution to the study of selected natural substances interacting with bio molecules.	Supervisor: doc. RNDr. Ivana Márová, CSc.
FC	Ing. Petra Možíšková	Study of the photocatalytic reduction of metals.	Supervisor: doc. Ing. Michal Veselý, CSc.
FC	Mgr. Milan Roupec	Molecule modelling in polyurethan materials.	Supervisor: doc. Ing. Miloslav Pekař, CSc.
FC	Ing. Šimon Vojta	Fluorimetry of selected elements in a complexogenic and micellar environment.	Supervisor: prof. RNDr. Lumír Sommer, DrSc.
FC	Ing. Lucie Wolfová	Study of the solvability of paint binders based on their solvability parameters.	Supervisor: prof. RNDr. Zdeněk Friedl, CSc.
FC	Ing. Jana Procházková	Study of the decomposition of substances in discharges in fluids.	Supervisor: doc. RNDr. František Krčma, Ph.D.
FC	Ing. Martin Biler	PEDT – semiconducting properties and applications in electronics.	Supervisor: prof. RNDr. Stanislav Nešpůrek, DrSc.
FC	Mgr. Jan Studýnka	Creating strata and strata structures of plasma polymers.	Supervisor: prof. RNDr. Vladimír Čech, Ph.D.
FC	Ing. Hana Čechlovská	Study of hydrofobic domains in humic acids.	Supervisor: doc. Ing. Miloslav Pekař, CSc.
FC	Ing. Dana Flodrová	Pectin – hemicellulose complex and hydrolase exopectate degrading homogalakturonan.	Supervisor: doc. Ing. Jiřina Omelková, CSc.
FC	Ing. Hana Grossmannová	Decomposition diagnostics for volatile organic substances in a gliding arc plasma discharge.	Supervisor: doc. RNDr. František Krčma, Ph.D.

FC	Ing. Jana Chomoucká	Study of self-cleaning and antimicrobial properties of thin titanium (IV) oxide layers.	Supervisor: doc. Ing. Michal Veselý, CSc.
FC	Ing. Martin Chytil	Properties of hyaluronan in a solution.	Supervisor: doc. Ing. Miloslav Pekař, CSc.
FC	Ing. Kamila Kočí	Separation of azaarenes by high-efficiency fluid chromatography.	Supervisor: doc. RNDr. Zdeněk Šimek, CSc.
FC	Ing. Radim Lána	Persistent organic pollutants in the South Moravian Region environment.	Supervisor: prof. Ing. Jana Hajšlová, CSc.
FC	Ing. Filip Mravec	Aggregation behaviour of polysaccharids in water solutions.	Supervisor: doc. Ing. Miloslav Pekař, CSc.
FC	Ing. Kristýna Urbánková	Multi-component extraction and pre-concentration of micro-concentrations of As, Sb, Se, and Te on modified silica gel, determination of ICP-AES (ICP-MS) and application to water samples.	Supervisor: prof. RNDr. Lumír Sommer, DrSc.
FC	Ing. Petr Zelík	Kinetic study of the esterase inhibitors produced by autotrophic micro-organisms.	Supervisor: doc. RNDr. Ivana Márová, CSc.
FBM	Ing. Petra Hamplová	Increasing the efficiency of a company by supply chain management.	Supervisor: prof. Ing. Marie Jurová, CSc.
FBM	Ing. Tomáš Kužilek	Networks of small and medium biotechnology enterprises in the Czech Republic.	Supervisor: doc. Ing. Vojtěch Koráb, Dr., MBA.
FBM	Ing. Tomáš Meluzín	Financing companies by initial public offerings.	Supervisor: Ing. Jaroslav Vašek, CSc.
FBM	Ing. Petr Bačík	Knowledge management.	Supervisor: prof. Ing. Petr Němeček, DrSc.
FBM	Ing. Tomáš Heralecký	Innovation management and competitiveness of small and medium enterprises.	Supervisor: prof. Ing. Petr Němeček, DrSc.
FBM	Ing. Eduard Palíšek, MBA	Influence of strategic management on the prosperity of a firm.	Supervisor: doc. Ing. František Bartes, CSc.
FBM	Ing. et Ing. Pavel Fotijev	Safe e-trading model and its economic aspects.	Supervisor: prof. Ing. Vladimír Smejkal, CSc.
FBM	Ing. et Ing. Ivo Kuřitka	Concept of logistics for virtual organizations.	Supervisor: prof. Ing. Marie Jurová, CSc.
FBM	Ing. et Ing. Zdeněk Makovský	Management of the free liquidity in a company.	Supervisor: doc. Ing. Liběna Tetřevová, Ph.D.
FBM	Ing. Jiří Peterka	Strategic management and its influence on the development in small technology firms in the Czech Republic.	Supervisor: doc. Ing. Vojtěch Koráb, Dr.
FBM	Ing. Mgr. Hana Skalická	Harmonizing the taxation of corporations in EU.	Supervisor: doc. Ing. Zdeněk Sadovský, CSc.
FIT	Ing. Jan Pečiva	Active transactions for collaborative virtual scenes.	Supervisor: doc. Dr. Ing. Pavel Zemčík

FIT	Ing. Jiří Techet	Scattered context in formal languages.	Supervisor: prof. RNDr. Alexandr Meduna, CSc.
FIT	Ing. Vladislav Kubíček	Details of search in multimedia data.	Supervisor: doc. Ing. Jaroslav Zendulka, CSc.
FIT	Ing. Karel Masařík	System of parallel design of computer hardware and software.	Supervisor: prof. Ing. Tomáš Hruška, CSc.
FIT	Ing. František Ščuglík	Automatic specification generation from UML activity diagrams.	Supervisor: prof. Ing. Miroslav Švéda, CSc.
IFE	Ing. Miloslava Pošvářová	Methodology of determining the life cycle of functional components of transport structures made from patinating steel.	Supervisor: doc. Ing. Leonard Hobst, CSc.
IFE	Ing. František Prodělal	Discount rate used to determine the market price of an enterprise.	Supervisor: doc. Ing. Jana Korytářová, Ph.D.

Tab. 2.9_4 2008 Awards for students and graduates

Best Graduate Rector Award

	FCE	Tomáš Fojtík
	FME	Jan Novotný
	FEEC	Martin Štumpf
	FC	Lenka Šupinová
	FBM	Tomáš Procházka
	FFA	Martina Svozilová
	FIT	Martin Klauďiny

Josef Hlávka Prize

	FME	Hana Druckmüllerová
	FEEC	Ondřej Hůttl
	FC	Václav Mach
	FFA	Oldřich Bystřický
	FIT	Viktor Puš

Siemens 2008 Award

	FC	Anna Čtvrtníčková
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PRECIOSA Foundation Award

	FEEC	Jiří Forejtek
	FC	Lucie Hegerová
	FIT	Milan Janeček
	FME	Jan Novotný
	FME	Aleš Volek

2. 10. University drop-outs

The relatively high number of dropouts, particularly during the first years of Bachelor's degree programmes, is a recurring problem of technical universities. Even in this regard, a gradual improvement can be observed - mostly due to the transition to a structured study system - the number of 2008 dropouts was lower by almost 800 students on 2007. Table 2.10 lists students that dropped out in 2008.

Tab. 2.10. Dropouts from accredited degree programmes from 1st January 2008 to 31st December 2008

degree programme groups	master progr. group code	Bachelor's		Master's		follow-up Master's		doctoral		total
		FT	C	FT	C	FT	C	FT	C	
Engineering	23 - 39	2395	603	38	18	230	65	71	231	3651
Artistic and Cultural Sciences	82	0	0	0	0	6	0	0	0	6
Natural Sciences	14	0	0	0	0	0	0	1	5	6
Economics	62	215	7	0	0	93	130	2	10	457
Total		2 610	610	38	18	329	195	74	246	4120

2. 11. Credit system, diploma supplements

BUT makes a full use of the European Credit Transfer and Accumulation System (ECTS) and all its instruments in all Bachelor's and Master's degree programmes. A module of the information system recommended by the EU has been installed. All the graduates from degree programmes are given a free English-Czech diploma supplement using the recommended form and content. In 2006, Brno University of Technology obtained the DS Label. In 2008 an application was submitted to the National Agency for European Programmes for the ECTS Label and for a renewal of the DS Label.

2. 12. Specialized cooperation between BUT and the region, links between theory and practice and cooperation with customers

These are long-term traditional activities concerning the university as a whole. At the university, such activities are coordinated and supported by

the Technology Transfer Office (TTO) established in 2002 as one of the first at the Czech universities. Like some other Czech universities and research institutes, BUT also gets ready for what is called the third role, which includes transfer of knowledge to practice. According to the Community Framework, every scientific institution must have a department concerned with technology transfer. Universities and public research institutions are recommended by the European Commission that they should have:

- internal rules for the protection of intellectual property rights (licensing policy);
- rules for technology transfer;
- rules for cooperation with industries and research to order.

The Technology Transfer Office (TTO) has been assigned the task of designing such rules at BUT. Other typical activities include searching for commercialisable ideas and outcomes of BUT activities and offering them to external customers,

protecting intellectual property rights, supporting the shift of research fields towards commercial use, support for technology-oriented and spin-off companies, selecting companies for the BUT Technology Incubator (activities of the Industrial Board), and selecting a suitable BUT department as a partner to a business wishing to cooperate in research, development, and innovation (first contact point at BUT).

The concrete results of the TTO activities in 2008 included thirteen patents taken out and thirteen utility models registered, which is about twice as many as in 2007. This is one of the positive impacts of the BUT Development Project, particularly its patent fund used to pay for activities undertaken to protect intellectual property rights.

With a clear design, the TTO prepares the relevant internal regulations: in 2008 the "System of Commercialising the Outcomes of Science and Research at BUT" rector's guideline was issued to be continually amended by implementing regulations.

A team of major industry experts was established at the TTO as part of the BUT Development Programme. These work in their departments being continually trained on issues of commercialising new ideas. As part of the EUPRO Ministry of Education project, a South Moravia Regional Contact Organization is operating at TTO being mostly concerned with consulting and support for the EU 7th Framework projects of the regional institutions including small and medium enterprises. Education about knowledge and technology transfer of BUT staff and external collaborators is among TTO's ongoing activities.

Close cooperation exists between TTO and the South Moravian Innovation Centre and the Brno Regional Chamber of Commerce on knowledge and technology transfer and commercialisation. The TTO and BUT activities are also interesting for other regions, as evidenced by the cooperation agreements with the Agency for the Economic Development of the Vsetín Region and The Business Centre of Valašské Klobouky.

Tab. 2.13. BUT academic staff – numbers recalculated for 31st December 2008

academic staff						research staff
total	professors	senior lecturers	senior assistants	assistants	instructors	
1157.7	124.04	266.13	514.01	223.35	1.00	28.59

Table 2.14. Age structure of BUT academic staff on 31st December 2008

Age	academic staff										research staff	
	professors		senior lecturers		senior assistants		assistants		instructors		total	women
	total	women	total	women	total	women	total	women	total	women		
up to 29 years	0	0	0	0	41	6	145	37	0	0	3	2
30 – 39 years	2	0	35	1	233	37	87	22	1	1	17	5

40 -49 years	15	1	48	6	79	31	26	17	0	0	2	0
50 -59 years	41	4	94	9	127	64	6	2	0	0	3	0
60 -69 years	61	5	96	12	68	21	2	2	0	0	4	0
70 years and more	28	0	27	3	6	0	1	0	0	0	4	0
Total	147	10	300	31	554	159	267	80	1	1	33	7

2. 15. Education of BUT academic and other staff

In 2008 BUT organized 37 courses attended by 449 members of its staff.

2. 16. Further education courses offered to the BUT academic staff (with numbers of their participants) (Tables 2.16 and 2.16_1)

Tab. 2.16 Further education courses for academic staff

teaching skills courses	general skills courses	specialised courses	total
1	34	2	37

Tab. 2.16_1 Participant numbers in further education courses for academic staff

teaching skills courses	general skills courses	specialised courses	total
20	345	15	380

2. 17. Professors and associate professors appointed in 2008

Professors appointed in 2008

Faculty	name	field of research	appointment date
FCE	doc. Ing. Ph.D. Zdeněk Kala	design and transport structures	20.05.2008
FA	doc. Ing. arch. Petr Pelčák	architecture	20.05.2008

FEEC/TU Delft	doc. Dr. Ing. Pavol Bauer	heavy current electrical engineering and power engineering	20.05.2008
FME	doc. Ing. CSc. Milan Horáček	manufacturing technology	01.11.2008
FME	doc. RNDr. Ph.D. Jiří Spousta	applied physics	01.11.2008
FEEC	doc. Dr. Ing. Zdeněk Kolka	electronics and communication technology	01.11.2008

Associate professors appointed in 2008

Faculty	name	field of research	appointment date
FCE	Ing. CSc. Helena Králová	water management and water structures	28.03.2008
FCE	Ing. CSc. Ales Krejčí	physical and building materials engineering	17.07.2008
FCE	Ing. Ph.D. Radomír Sokolář	physical and building materials engineering	17.07.2008
FCE	Ing. Ph.D. Jan Jandora	water management and water structures	20.11.2008
FME	Mgr. Ph.D. Miroslav Černý	applied physics	13.03.2008
FME	Ing. Ph.D. Jiří Hájek	construction and process engineering	13.03.2008
FME	Ing. CSc. Zdeněk Němec	construction and process engineering	30.05.2008
FME	Ing. Ph.D. Jaroslav Štigler	construction and process engineering	30.05.2008
FME	Mgr. CSc. Tomáš Kruml	materials sciences and engineering	14.10.2008
FEEC	Ing. CSc. Zdeněk Bradáč	technical cybernetics	14. 4. 2008
FEEC	Mgr. CSc. Ph.D. Jan Pavelka	electrical and electronic technology	14.04.2008
FEEC	Ing. Ph.D. Petr Bača	electrical and electronic technology	05.06.2008
FEEC	Ing. Ph.D. Karol Molnár	teleinformatics	05.06.2008
FEEC	Ing. Ph.D. Jiří Vaněk	electrical and electronic technology	05.06.2008
FEEC	Ing. Ph.D. Jaromír Hubálek	electrical and electronic technology	19.11.2008
FEEC	Ing. Ph.D. Roman Maršálek	electronics and communication technology	19.11.2008
FA	Ing. arch. CSc. Jan Hrubý	architecture	23.01.2008
FA	Ing. arch. CSc. Josef Hrabec	architecture	14.04.2008
FC	Ing. CSc. Josef Čáslavský	environmental chemistry and technology	14.03.2008
FC	Ing. Ph.D. Marián Lehocký	physical chemistry	10.11.2008
FBM	PhDr. Ph.D. Ivetta Šimberová	business and management	04.03.2008
FBM	Ing. et Ing. Ph.D. Stanislav Škapa	business and management	10.06.2008
FIT	Ing. Ph.D. Přemysl Kršek	computing technology and informatics	30.06.2008

2. 18. Advancements of research, development, artistic and other creative activities at BUT and strengthening the links between such activities and education

Concerning creative activities at BUT, good news is that BUT has coped with the radical change in evaluating the outcomes of research and development according to the new methodology introduced in 2007 – the number of recalculated outcomes has risen by 17 percent on 2006. Another change in the evaluation occurred in 2008. According to the 2008 methodology, the total number of recalculated outcomes of 2008 increased by about 14 percent on 2007, with 20

percent in publications and 12 percent in the product category.

Last year, as in the preceding period, the research and creative activities of the BUT academic staff received funding from four main sources. The first source was institutional research funding for universities receiving subsidies mostly from the Science and Research Support programme of the Ministry of Education, Youth, and Sports of the Czech Republic. In 2008, there were 11 research plans, 9 research centres and 3 basic research centres at BUT. BUT was the owner of two centres and participated in the programmes of another two centres. See tables 2.18_1, 2.18_2, 2.18_3.

Table 2.18_1. BUT involvement in work on research plans

Name of research plan	Funding received in 2008 (CZK thousand)
Progressive building materials based on secondary raw materials and their influence on the service life of structures	16269
Waste and biomass processing systems and their control in terms of environment protection and power balance	16190
Synthetic-polymer- and biopolymer-based multifunctional homogeneous and heterogeneous materials	21421
Electronic communication systems and technologies of new generations (ELKOM)	24669
Inorganic nano-materials and nano-structures: creation, analysis, properties	21130
New trends in microelectronic systems and nano-technologies	24018
Simulation and modelling of mechatronic systems	17543
Energy resources, accumulation, and optimal use in the sustainable development conditions	17589
Progressive, reliable, and durable bearing structures	15233
Research of information technology and its safety	27824
Intelligent systems in automation	14441
Total	216327

Table 2.18_2 1M Research Centres

Fac.	Centre Name	Solution provider	Owner
FME	Centre of Integrated Design of Progressive Building Structures	Pišťek Antonín, prof. Ing. CSc.	Czech Technical University in Prague
		Solution co-provider	
FCE	Centre of Integrated Design of Progressive Building Structures	Melcher Jindřich, prof. Ing. CSc.	Czech Technical University in Prague
FCE	Centre of Integrated Research of Inorganic Composites	Štěpánek Petr, prof. RNDr. Ing. CSc.	Research Institute of Building Materials
FME	Josef Božek Research Centre of Combustion Engines and Automobiles II	Pišťek Václav, doc. Ing. CSc.	Czech Technical University in Prague
FME	Ecological Centre of Applied Research of Non-Ferrous Metals	Podrábský Tomáš, prof. Ing. CSc.	VUK Panenské Břežany, s. r. o.
FME	Research Centre of Manufacturing Technology	Kolibal Zdeněk, prof. Ing. CSc.	Czech Technical University in Prague
FME	Centre for Production Quality and Reliability	Karpíšek Zdeněk, doc. RNDr. CSc.	Czech Technical University in Prague
FEEC	Data, Algorithms, Decision-Making	Jan Jiří, prof. Ing. CSc.	Czech Academy of Sciences, Institute of Information Theory and Automation
FEEC	Centre of Applied Cybernetics	Vavřín Petr, prof. Ing. CSc.	Czech Technical University in Prague

Table 2.18_3 LC Programme Centres of Basic Research

Fac.	Centre name	Solution provider	Owner
FME	Structures for Nanophotonics and Nanoelectronics	Šíkola Tomáš, prof. RNDr. CSc.	BUT
FEEC	Centre for Quasioptical Systems and Terahertz Spectroscopy	Raida Zbyněk, prof. Ing. CSc.	Institute of Chemical Technology, Prague
FIT	Centre of Computer Graphics	Zemčík Pavel, doc. Dr.	Czech Technical University in Prague

A major part of the institutional funding of research at BUT comes from specific research at universities as provided by Act no. 130/2002 Coll. The second source was targeted research funding covering projects submitted within grant systems such as GA ČR and the grant agencies of the Czech Academy of Sciences and ministries, particularly the Ministry of Industry and Trade. Here, BUT has long been among the most successful universities with the proportion of its successfully submitted applications exceeding the national average. The third source of research funding was the participation in international projects supported by grants such as COST, EUREKA, INGO,

CONTACT, 5th FP, and 6th FP. In view of research internationalization, the participation in international projects is of key importance. Finally, applied research funded through contracts with domestic and foreign industrial enterprises also forms a major part of research activities. Contracts with national and international businesses brought a total of 75 million CZK to finance applied research and experimental development as compared with the 69 million of last year. In international scientific and research cooperation, the number of projects is larger with the financial contribution being raised to 59 million CZK in 2008 from 45 million CZK in 2007. See tables 2.18_4 and 2.18_5.

Table 2.18_4 Grants, research projects, patents, and other creative activities at BUT (Table 8 - Ministry of Education, Youth, and Sports)

Name of grant, research project, patent, etc.	Source	Thousands of CZK in funding
GA Standard Projects	B	86554
GP Post-Doctoral Projects	B	15777
GD Doctoral Projects	B	10544
Eurocores	B	462
INE	B	98
Ministry of Education Research Plans	C	216327
1M Research Centres	C	77878
LC Programme Centres of Basic Research	C	8374
NPV II National Research Programme II	C	43567
1E Information Society (National Research Programme TP2)	C	543
IA Grants of Distinctive Research Character Targeted at Current Research Done Mostly in the Czech Academy of Sciences	C	1264
1Q Support for Targeted Research Projects (National Research programme)	C	1930
KJ Junior and Research Projects	C	2500
KA Nanotechnology for Society	C	11200
FI-IM IMPULS	C	21573

FT-TA TANDEM	C	32072
1H-PK PROGRESS (National Research programme)	C	8526
2A Permanent prosperity	C	3079
1F Safe and Economical Transport (National Research programme)	C	120
CG - Support for sustainable development of transport	C	3008
1G Use of Natural Resources	C	208
QH - Research programme in agriculture	C	1280
WB Research and Development Serving the Needs of the Region	C	340
Ministry of Culture	C	317
NBU – ST	C	430
MV VD	C	220
COST (OC)	C	5986
EUPRO (OK)	C	620
EUREKA (OE)	C	2168
INGO (LA)	C	378
KONTAKT (ME)	C	2647
Ministry of Education Support Programme for International Cooperation Programme	C	2300
EU 5 th and 6 th Framework Programme (5FP, 6FP)	A	44227
Marie Curie – as part of a research project	A	182
Transatlantic Cooperation	A	188
ASO	A	39
AKTION – Research Project	AIP ČR	81
8 Bilateral International Cooperation projects	AIP ČR	529
Total		607536

Table 2.18_5. BUT industrial property ownership portfolio (patents in force, etc.) on 31st December 2008 (Table 8 - Ministry of Education, Youth, and Sports)

Industrial Ownership Category Protected under Special Regulations	Subject-matters in force	Patent applications published
Domestic Patent	6	8
Foreign Patent		1
US Patent		

EPO Patent		3
Japanese Patent		
PCT Application Published		2
Domestic Utility Model	27	
Foreign Utility Model	3	
Domestic Industrial Model	1	
OHIM Registered Industrial Model		
Domestic Trade Marks	17	
OHIM Trade Marks		

It should be stressed that the BUT involvement in international projects will bring not only funding, but also chances for BUT to better develop its scientific and educational activities in cooperation with other European institutions, which will enhance the professional standard of its teachers, students, and doctoral students and increase BUT's international renown. The international renown of a research institution is also improved by holding prestigious conferences, by visits of the world's leading scientists, or by editing journals referred to in the ISI Thomson Reuters database. In all these areas, BUT was successful in this year – the following is worth noting: the 17th highly appraised European Conference on Fracture, co-organized by the BUT Faculty of Mechanical Engineering and the Institute of Physics of Materials of the Academy of Sciences of the Czech Republic in late August of 2008, in May 2008, Professor Alan Heeger, Nobel-prize winner gave two lectures as part of a Honeywell event, and the Department of Radio Electronics at the Faculty of Electrical Engineering and Communication was successful in registering its Radioengineering journal for the ISI Thomson database. The funding of creative activities in 2008 rose to 303 million CZK from 261 million CZK in 2007. The total funding from all four resources received at BUT for research and creative activities exceeded 682 million CZK, which is

about one third of the university budget. As this is by about 19 million more than in 2007, despite the increasing trend, BUT must be prepared to compete with other universities such as Czech Technical University in Prague and Masaryk University in Brno. In this respect, BUT achieved a higher growth rate. This is reflected in a higher subsidy on specific research calculated for 2008 (87,988,000 CZK) as compared with that for 2007 (85,807,000 CZK), that is, by about 2.5 percent. Institutional support for specific research as part of research conducted at a university in 2008 was closely related to education provided in which students participated. At BUT faculties, doctoral students could participate in grant projects. Funding was also available for supporting students' activities necessary for the completion of their studies (costs related to participation in international and national conferences, purchases of specialized literature, etc.).

The amount of research-project funding won in various grant competitions and contributions from targeted funds are also listed in Table 2.18_4. The total targeted subsidy for national grants increased from 233 million CZK in 2007 to 246 million in 2008 or by about six percent. It should, however, be stressed that there are still great differences between faculties. These result from the actual sizes of faculties as well as from the substantial differences in the structure of funding in the average

grant volumes and, above all, in the proportion of the researchers who are the owners of grant projects. In this regard, the best situation is at the faculties of mechanical engineering and electrical engineering with the most project owners.

BUT reports a high percentage of funding won from departmental applied research grant agencies, in particular from the Ministry of Industry and Trade. This testifies to the growing efforts to apply the basic research outcomes in the industrial sphere. The highest success rate, as in the previous years, has been reached with the Ministry of Industry and Trade and the Ministry of Transport and Communication with a total finding of 35 million CZK. Here, the faculties of mechanical engineering, civil engineering, electrical engineering, and chemistry should be mentioned as achieving the best results.

Six BUT projects were approved in 2008 for the 7th Framework Programme. The total funding amount for the entire grant period averaging three years reaches about 1,900,000 EUR.

2. 19. BUT infrastructure (material, technical and information background), access to information and information infrastructure development

Material background

In conformance with the BUT 2006-2010 Mission Statement concerning education, research, development, artistic and other creative activities and with the Property Reproduction Programme no. 23334O approved by the Ministry of Education, Youth, and Sports, other actions were undertaken in 2008 to implement new material structures enabling BUT and all its parts to provide education, research, and development at a world technical standard.

The following were the major activities carried out to enhance the material infrastructure:

- continuing reconstruction and finishing of the buildings called “manor house” and “cooper’s workshop”, and of the cellars under buildings P and Q on the Božetěchova campus,
 - reconstruction of the fibre optic cable routes,
 - renovation of the lifts in the existing buildings of the Faculty of Mechanical Engineering,
 - finishing an additional storey to building 506 at the Faculty of Chemistry to be used for new laboratories,
 - starting the installation of the lighting of the stadiums at the Pod Palackého vrchem campus,
 - starting conversion of the Kounicova canteen into BUT central archives,
 - reconstruction of the building in Rybkova Street to meet the needs of the Faculty of Civil Engineering,
 - reconstruction of the building at Kounicova 67a to meet the needs of the Technology Transfer Office,
 - reconstruction and renovation of halls of residence at the Pod Palackého vrchem campus,
 - reconstruction of the Purkyňova canteen to meet the modern sanitary operation requirements,
 - finishing the landscaping around the sports hall,
 - starting a new building of the BUT Faculty of Electrical Engineering and Communication at the Pod Palackého vrchem campus.
- The following preparatory work was done:
- projects for the reconstruction of the cladding of the Faculty of Mechanical Engineering buildings A1, A2, A3, B1, B2, B3,
 - architectural competition for the best use of the Academic Square by the faculties of architecture and fine arts,

- study and land preparation for a new BUT Faculty of Electrical Engineering and Communication building at the Pod Palackého vrchem campus,
- project for a building permit for addition to building C3 of the Faculty of Mechanical Engineering,
- overcladding projects for BUT buildings.

These activities are described in detail including the financial issues in the BUT 2008 Annual Management Report.

BUT Central Library

The BUT Central Library serves as a coordinating centre of all BUT libraries. It provides consulting services and issues methodological guidelines.

The Central Library manages the BUT Libraries Portal and the central librarian servers. In 2008 an intranet portal was put into operation used for internal communication of the library staff. It is also directed towards support for the Aleph500 library system, information education, and access to electronic information resources.

The Central Library runs and administers the Aleph500 library system. In 2008 the libraries upgraded the system to version 18.01. Work also continued on removing duplicates, clearing registries, and preparing connection to the Master Catalogue of the Czech Republic. In this regard, already in 2007, the libraries started using the National Authorities database. Some parts of the system were adjusted in order to unify the existing library processes.

Information education of BUT libraries was innovated and, since the academic year 2007/2008,

it has been offered through a Moodle e-learning system. After consultation with external experts, changes were made in 2008 in the form and layout of the study materials. More than 2000 BUT students completed information courses in 2008 and, according to a questionnaire enquiry, satisfaction with the form and content of the courses unequivocally prevails. Also the number was increased of those libraries offering information education in the innovated form. After the faculties of mechanical engineering, business and management, and fine arts have been included, the IVIG courses are now offered at six BUT faculties.

Negotiations were under way in 2008 on creating new consortia for making information resources available from 2009 to 2011. The aims also to provide users with remote access to such resources through a central authentication system.

While resolving the issues connected with submitting and publishing university qualification projects (uqp), University Development Fund project no. 2694/ 2008 was being implemented in 2008. At its first stage, the project deals with publishing university qualification projects in compliance with the current regulations. The project was also worked on by some colleagues from the BUT Centre of Computing and Information Services. As foreseen by the plan of integration into the university's information system, work was started on the automatic acceptance of metadata records and their subsequent import into a digital library. Negotiations were also started on its further use – posting the BUT News journal, conference proceedings, etc..

In cooperation with VUTIUM Press, a sales gallery was opened of specialized and technical literature situated on the Central Library premises.

Table 2.19. University libraries, library-information services

Yearly collection increase	22002
Total collection	267354
Number of periodical titles:	922
- paper form	100
- electronic form (estimate) ⁴	
Opening hours in a week ¹ (physical)	66
Number of loans to be studied at home ²	88645
Number of users ³	33571
Number of study seats	712
Number of volumes available for free selection	88746

- 1) *The opening hours of the library department with the longest opening hours. The opening hours of individual departments do not add up! Physical denotes actual visit to the library rather than electronic communication.*
- 2) *Including loan period extensions.*
- 3) *Users registered by 31st December 2007 are listed, that is, natural persons or legal entities registered by the library authorized to borrow collection documents (to be studied either in a study room or at home) and have not been newly registered or re-registered over the period in question.*
- 4) *Only the periodical titles are listed subscribed by the library itself (or received as a donation or exchange) in paper or electronic form are included; other periodicals with full-text access by the users within consortia are not included.*

VUTIUM

The VUTIUM Press participated in 4 exhibitions of books published by BUT and in cooperation with BCES (the Quantum edition series) – World of Books, Prague – April, Autumn Book Fair, Havlíčkův Brod – October, the Frankfurt Book Fair, Frankfurt am Main – October, Libri Olomouc – November.

Four new titles were published (Jaroslav Šenberger et al. – Metallurgy of Casting Steel, Jaroslav Kadrnožka – Global Warming, Jan Jandora & Jaromír Říha – The Failure of Embankment Dams

due to Overtopping, 15 years of the BUT Faculty of Fine Arts). A total of 243 ISBN's were assigned. This number includes publications brought out by all BUT faculties.

Eleven issues of the BUT News journal were issued with a yearly number of copies of 17,600.

VUTIUM's most important event was the presentation at the World of Books exhibition in Prague of two new publications (Jaroslav Kadrnožka – Global Warming and John Mc Murry – Organic Chemistry). During the presentation of the Orga-

nic Chemistry textbook, the successful cooperation between VUTIUM and Institute of Chemical Technology Prague was publicly appreciated.

In 2008 the VUTIUM editorial board met twice, in January and in December. At the December session, a list of titles to be included in the 2009 publishing plan was submitted to the board to decide about the order of publishing the titles.

Centre Of Computer And Information Services (CCIS)

In 2008 there was an intensive development of the Apollo information system for staff and the Studis portal for students. Many of the tasks to be completed resulted from the BUT IS development priorities:

- Centralizing the processing of tuition fees
- Supervising and fine-tuning the BUT IS of the BUT Faculty of Electrical Engineering and Communication
- Establishing an ECTS web portal to present information on study and a catalogue of courses
- Enhancing the BUT IS to meet the needs of teaching at the Institute of Forensic Engineering
- Extending the TOP10 information system to include evaluation of R&D and creative activities
- Electronic submission of final projects

The database was transformed to a cluster of three 64-bit Oracle 10g RAC servers. The SAP business information system and the Central Database are now using a shared NAS depository connected by the FibreChannel technology. The servers are backed up at the Faculty of Information Technology.

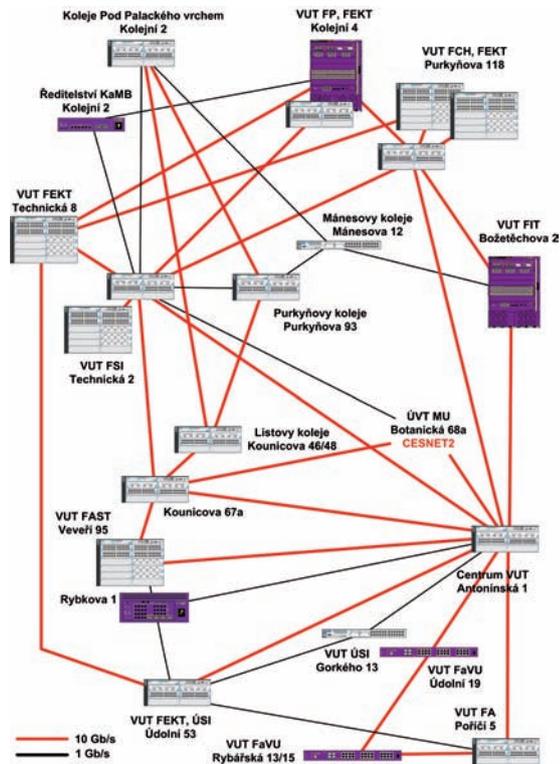
In the Moodle 1.5 e-learning system, a total of 586 brand new electronic courses were created, which is twice as many as last year. The number of Moodle users also rose considerably to 11,000 per month. An upgrade to Moodle 1.9 was carried late in 2008.

Having been part of CCIS since 2005, the KolejNet student computer network grew to 6674 connections serving 7376 student MAC addresses. KolejNet CVIS, Cesnet, lawyers of rector's office, Police Academy, and the Czech Anti-Pirate Union held a much attended lecture on the impacts of breaching the copyright law.

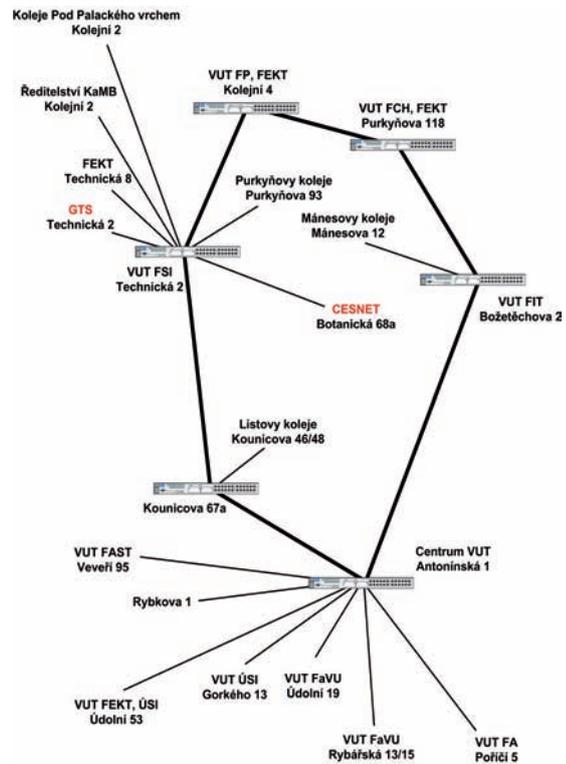
As the faculty backbone networks grow in number considerably, port numbers and the existing network connection point performance need to be increased on a continual basis. This mostly applies to large faculties and the student network at the BUT halls of residence. To meet the needs of an L2 connection between different BUT sites, a new backed-up L2 circle was established to accommodate the VLAN metropolitan connections for running the BUT WiFi network, experimental IPv6 networks, surveillance systems, connection of field departments and departments operating across BUT parts.

As part of the development of the BUT fibre optic network, the Kounicova-Technická route was reconstructed using micro tubes to achieve a tripled capacity.

Diagram of the BUT gigabit backbone network



BUT L3 Backbone Network Topology in 2008



L2 VLAN Network Topology





3

QUALITY AND CULTURE OF ACADEMIC LIFE

3. 1. Social affairs of students and employees **Student affairs**

Under the University Act, Brno University of Technology awards 600 social scholarships and 12,000 accommodation scholarships monthly. These scholarships are paid from the targeted resources of the Ministry of Education, Youth, and Sports. If justified, social scholarships can be paid by the deans of the faculties and the director of the university institute. Apart from this, a new

amendment to the rules is under preparation by which a student suffering from an abrupt fall in his/her standard of living may be paid a social scholarship from the rector's fund.

Social Benefits of Employees

The employer pays:

- a contribution to the pension and life insurance of employees
- a contribution to meals for employees

The employer also supports:

- sports activities of employees through BUT Centre of Sports Activities, also offering seminars and training courses
- further education of employees through the Institute of Lifelong Learning offering various educational courses
- recreation of employees at the BUT Ramzová and Vřís holiday resorts

3. 2. Disabled candidates/students at universities

In recent years, BUT has been involved in a number of development programmes of the Mi-

nistry of education, Youth, and Sports in support of disabled students. The funding has been used in compliance with the project contents as approved. Also, thanks to extensive reconstruction projects, almost all the buildings at the BUT campuses have barrier free access.

3. 3. Exceptionally talented students

Care of exceptionally talented students is mostly taken by the faculties. Over the last two years, BUT has participated in development programmes in support of talented students mostly in engineering and science fields.

3. 4. Accommodation and catering at BUT

Table 3.4. Student care – accommodation and meals

Total number of beds at BUT halls of residence	7018				
Number of beds in hired facilities	0				
Number of accommodation applications submitted until 31 st December 2008	10105				
Number of accommodation applications granted until 31 st December 2008	6951				
Percentage of approved accommodation requests	70.5				
Composition of the bed-per-month price	Ministry of Education subsidy on student accommodation and meals	other university funding	price for students	price for BUT staff	price for others
			2010-3840	2190-3840	

Composition of the main-meal price	Ministry of Education subsidy on student accommodation and meals	other university funding	price for students	price for BUT staff	price for others
	23	0	*	*	*
Number of main meals sold in 2008	Total				
	1758826				
	Including				
	students	BUT staff		others	
	1576144	95096		87586	

**No-limit catering system*





INTERNATIONALIZATION

4. 1. BUT Strategy in international cooperation, key priorities

Internationalization is BUT's long-term strategic objective incorporated in its Mission Statement. The university aims to become an internationally recognized place of research in the European education and research space. To achieve this objective, the domestic and, even more so, international position of the university must obviously be strengthened. The university is active within the organization of which it is a member such as the European Association of Universities, Conference

of European Schools for Advanced Engineering Education and Research (CESAER) and regional organizations such as the Danube Rectors Conference.

In 2008 the fulfilment of a cooperation agreement with the Technische Universität Wien was carried on. Activities were mostly focussed on new promising materials and a new Central European Institute of Technology (CEITEC) joint project of BUT, Masaryk University, and the Brno institutes of the Academy of Sciences of the Czech Republic.

Both in Vienna and Brno, specialised seminars were held on topical research issues related to this European project under preparation. However, this cooperation is just one example of many; individual faculties cooperate with their foreign partners, too. Such joint professional activities then form a platform for the much appreciated teacher mobility encouraging the steadily increasing numbers of outgoing domestic and incoming international students. Student mobility aims to prepare students, future graduates, for the European environment, globalized research, project management, overall approach to problem solving and provide them with as best as possible roadmap to the international environment.

The university and its faculties also focussed on attracting international students offering programmes of all degrees, but mostly, as BUT aims to become a strong research university, on winning good international doctoral students. Many services and a great deal of assistance were received from the South Moravian Center of International Mobility, an organisation established a few years ago by an initiative of Brno University of Technology, Masaryk University, and South Moravian Region. This organisation was then joined by Mendel University of Agriculture and Forestry in Brno. In 2008 (apart from other important activities) this centre gave thirty-one one-year starting scholarships to international students prioritizing doctoral students. Of the above thirty-one scholarships, BUT provided, thanks to its preparedness, with twenty-two scholarships students from Russian Federation, Bosnia and Herzegovina, Serbia, Monte Negro, Ukraine, Syria, Iraq, and Venezuela. The international students whose starting scholarship of the previous year had expired, were provided with similar scholarships from BUT's own resources to make it possible for them to finish their studies.

The studies offered by BUT to international students were presented during trips of BUT acade-

mic staff abroad (Syria, Estonia, Spain) as well as during events organized by the South Moravian Region or the City of Brno (Chanty-Mansiysk, Zadar, and others). Also the traditional cooperation with the State Technical University of Izhevsk, Russian Federation, was carried on, from which the greater number of Russian students recruit. (There were thirty-eight in 2008.) Two Czech courses were offered at the State Technical University of Izhevsk for those interested in study at BUT. Also five students from Chanty-Mansiysk attended the courses. The BUT lector in charge of the classes brought back suggestions for further cooperation in teaching as well as agreements for further international students to study at BUT. For better integration of international students, a project of the Ministry of Education, Youth, and Sports was implemented. This co-financing made it possible to offer Czech and technical Czech courses in each semester.

BUT activities at international educational fairs both at home and abroad were also of significant importance. At the traditional Brno Gaudeamus educational fair The university presented its new exhibition. In 2008, for the first time, BUT took part in some other important educational fairs. The international fair and conference of the Association of International Educators and the National Association of Foreign Student Advisors (NAFSA) held in Washington proved to be a very useful platform of cooperation. The participation of several Czech universities was very well coordinated by the Fulbright Commission and the Embassy of the Czech Republic in the USA. Owing to the geographic vicinity and the number of Slovak students studying at BUT, participation in the Academia Bratislava fair seems to be a necessity. The university used the well-prepared events co-organised by the Czechinvest and the Czech foreign mission in Taipei, Taiwan and, along with other six Czech universities, took part also in the 2008 CZ-TW Higher

Education Days held in Taipei. This activity initiated five new inter-university agreements and 2 visits from partner universities.

At present, BUT has a total of 74 teaching and research cooperation agreements with leading European and non-European universities. These agreements and their more consistent fulfilment can be seen by the university management as a permanent reserve that should be used to strengthen the teacher mobility in both directions.

4. 2. BUT involvement in international educational programmes

BUT offers a fully fledged Joint Master Degree in European Business and Finance taught in cooperation with Nottingham Trent University and Economic University of Karol Adamicki, Katowice, Poland. Other joint-degree and double-degree programmes are under preparation.

In view of research internationalization, BUT participation in international projects is of key importance. It should be stressed that the BUT involvement in international projects will bring not only funding, but also chances for BUT to better develop its scientific and educational activities in cooperation with other European institutions, which will enhance the professional standard of its teachers, students, and doctoral students and raise BUT's international renown. In 2008 BUT participated in international projects supported by grants including COST, EUREKA, INGO, CONTACT, 5th FP, and 6th FP. In international scientific and research cooperation, the number of projects is larger with funding increased to 59 million CZK in 2008 from 45 million CZK in 2007, see Table 2.17. A further six BUT projects were approved in 2008 for the 7th Framework Programme. The total funding for the entire grant period, averaging three years, reaches about 1,900,000 EUR.

4. 3. Student and teacher mobility

Table 4.3_1. BUT participation in international teaching cooperation programmes - EU programmes for teaching and vocational training

Programme	LLP							Erasmus Mundus
	Erasmus	Comenius	Grundtvig	Lingua	Minerva	Leonardo	Jean Monnet	
Number of projects	1							
Number of outgoing students	512					6		
Number of incoming students	271					3		
Number of outgoing academics	184							
Number of incoming academics	52							
Subsidy (thousand CZK)	13552					467		

Tab. 4.3_2 BUT participation in international teaching cooperation programmes - other programmes

Programme	Ceepus	Aktion	Others
Number of projects	2		4
Number of out-going students	13	1	
Number of in-coming students	10		7
Number of out-going academics	8		2
Number of in-coming academics	5		3
Subsidy (thousand CZK)	174		3678

Tab. 4.3_3 BUT participation in international teaching cooperation programmes - other study stays abroad

Programme	Government scholarships	Direct inter-university cooperation / including Development Programmes	
		Europe / including Development Programmes	outside Europe / including Development Programmes
Number of out-going students	1	88	7
Number of in-coming students	4	18	6
Number of out-going academics		23	6
Number of in-coming academics		7	5

4. 4. Student and teacher mobility by country

Tab. 4.4. Student and teacher mobility by country

country	Number of out-going students	Number of in-coming students	Number of out-going academics	Number of in-coming academics
Austria	38	2	15	2
Belgium	22	4	3	2
Bulgaria	1	5	3	1
Cyprus				
Germany	40	6	28	4

Denmark	43		3	4
Estonia	1			
Spain	40	39	17	2
Finland	47	12	9	2
France	61	29	16	4
Greece	18	37	8	1
Hungary	1	4		
Ireland	2			
Iceland				
Italy	34	9	6	1
Liechtenstein				
Lithuania	7	10	5	4
Luxembourg				
Latvia	3		5	1
Malta	3	1	1	1
the Netherlands	9		1	
Norway	5	1	4	
Poland	3	4	4	
Portugal	20	46	6	5
Rumania		1		
Sweden	25		5	1
Slovenia	11	6	6	1
Slovakia	2	17	23	2
Turkey	8	31	2	7
UK	55	7	13	4
Switzerland	13		1	





ENSURING THE QUALITY OF ACTIVITIES CARRIED OUT AT BUT

5. 1. Education quality assessment system at BUT Internal assessment

In compliance with University Act no. 111/1998 Coll. as amended, and the BUT Constitution, the quality of education is assessed on a regular basis at all BUT faculties. This includes institutional assessment by the study-field and subject boards and individual assessment through class inspections, targeted pedagogic discussions and experience sharing between teachers. The outcomes of such

activities are used immediately to innovate and modernize the content of the educational process as well as the teaching methods.

An indispensable part of internal quality assessment at BUT faculties is the student quality assessment carried out once or twice a year by electronic or paper questionnaires enquiring about the content of courses, the teachers and their methods. This assessment is organized by faculty managements in cooperation with the student

chambers of the faculty academic senates. The assessment results are considered in assigning teachers to courses and in their overall assessment.

External assessment

One of very important external education assessment factors are BUT graduates. A systematic institutional questionnaire enquiry is conducted once or twice a year to find out about the graduates' views on the education they have received and the jobs being offered to them. In addition to this, the faculties' institutes and teachers are often meeting their graduates providing them with consultations or directly cooperating with them on their specialised tasks and issues, which brings direct recognition of the teaching results and their suitability to real-life jobs.

Another opportunity to better assess the quality of teaching and its outcomes is regular contacts with several companies employing the graduates. Further official opportunities are days of companies held annually at faculties where cooperation is discussed, jobs offered to students about to graduate, with the companies' HR staff informing on the profiles and competences of their prospective employees and commenting on the improvement of the present BUT offer. A good opportunity for mutual informing and experience exchange is also direct practical and research cooperation between the BUT staff and students and experts from practice.

Necessary and thus obvious is cooperation between BUT and the Accreditation Committee on the re-accreditation of degree programmes, see Table 2.2.a_1.

In 2008 the Accreditation Committee conducted an overall external quality assessment at the BUT Faculty of Business and Management. The main focus was on analyzing and evaluating all the processes (education, research and development, cooperation with companies, manage-

ment and decision making, and human resource development). No major errors were found, the faculty was recommended that it should actively respond to suggestions leading to improvement, particularly in human resource development. It was agreed that a follow-up visit of the Accreditation Committee to the faculty would take place in a year.

No external quality assessment was conducted at BUT by an international committee in 2008. Critical comments from previous external assessments (European University Association, Centre for Higher education Studies, European Centre for Strategic Management of Universities) are gradually responded to in preparation of a follow-up meeting.

5. 2. Quality management and assessment in other spheres of BUT activities

Quality as part of the BUT strategy

Building up an efficient and well-functioning organisation requires a systematic and transparent way of management including that of quality and other disciplines. For BUT, quality assurance is, therefore, a matter of strategic priority. Regarding this area, the university conforms with the national and international documents, such as the current recommendation by OECD experts provided for the Czech higher education institutions (not only for quality management) and with the subsequent suggestions to reform tertiary education in the Czech Republic.

The aims and objectives of long-term quality-assurance have been incorporated in the BUT 2006-2010 Mission Statement with particular tasks specified by annual MS amendments and implemented within the Ministry-of-Education Development Programmes. Attention is directed to quality maintenance and improvement as well as to its assessment - both based on the concept of quality as fitness for a purpose with quality being

measured by the degree of fulfilment of the objectives set. The fulfilment of quality assurance tasks was mostly supervised by the BUT management, Academic Senate and a BUT quality assurance task force. Both internal and external resources were used to carry out the activities required as well as cooperation and exchange experience with other higher-education institutions including the Ministry of Education Centre for International Services – the Bologna Promoters / Bologna Experts programme; Czech Conference of Rectors; University Council; Centre for Higher-Education Studies; Masaryk University, Janacek Academy of Music, West-Bohemian University, Technical University of Ostrava, and others).

Efficient support from the university and faculty managements is BUT's strength in quality assurance. The yet insufficient communication with the academic community on the need of a comprehensive approach to assuring the quality of activities and environment, on the other hand, must be seen as its weakness. Conditions for starting the necessary training and cooperation have, however, already been created with a sufficient number of suggestions and materials being available and already used.

Internal quality assurance

In recent time, tasks of internal quality assessment have been included in a BUT project financed from the Ministry of Education budget. The aim was to provide support for university quality management as well as for assuring the quality of its main activities, that is, teaching, student-oriented services, research and development, and cooperation with industries. The following particular areas were the main focus:

- analysis and management of processes,
- analytic and quantitative methods,
- organisational structure for quality management.

• Analysis and management of processes

The process analysis was centred around the rector's office to improve its organisational and functional structure and management support. An enquiry was made by an internal implementation team lead by external experts. The aim was to identify areas suitable for / capable of a rapid change in the required direction with a chance of speedy improvement.

The solution was structured into the following stages: mobilizing, describing the current situation, analyzing and diagnosing the current situation, identifying opportunities and producing subsequent recommendations, setting up an implementation programme.

The process analysis conducted, which proved to be a suitable quality management and support tool, produced particular final recommendations that are being implemented at present.

• Analytic and quantitative methods

A mere verbal approach will no longer be sufficient for managing and assessing quality and needs to be complemented by suitable quantitative methods (using statistics, simulation, and operation research). The reason is not so much to provide the correct numbers, but to provide a deeper insight into a particular problem and thus support for decision and management. BUT can build on a long tradition of its own analytic methods; enjoying the benefit of previous experience in applications and of a large team of experts in science, engineering, economics, and computer science. The methods combine classical and heuristic approaches.

In recent years, an analytic and quantitative approach has been employed in solving a number of problems such as: statistical analysis of admissions to BUT, statistical analysis of graduate unemployment including graduates from BUT, analysis of the methodology of R&D assessment

as proposed by the University Council, processing the underlying documents for strategic management – particularly the budgetary measures, analysis of the formula for specific research.

The knowledge gained at BUT by those working on particular tasks was disseminated among other universities in lectures at specialised seminars. The success of teams working on the solution led to establishing an analytic group within BUT assigning it other problems and having their representatives involved in national activities.

The experience gained by BUT shows that analytic and quantitative methods find wide applications helping create sufficient conditions for improving the top management necessary to ensure the quality and excellence of academic activities.

- **Organisational structure for quality management**

In 2008 a Quality Department was incorporated in the BUT organisational structure, being assigned the task of selecting and implementing a system, approaches, and methods for managing and evaluating quality both within and outside BUT and its units. The department's focus is and will be on the main, secondary, management, and supporting processes taking place at BUT.

Internal and external quality assurance through benchmarking and ranking

BUT sees the above methods as very suitable for the internal and external assuring of quality and has already been employing them for quite a long time.

Benchmarking

Benchmarking is based on monitoring others in order to learn from them how to find better ways of doing your own job; using systematic methods to compare yourself with organisations of top per-

formance; comparing structures and processes, their efficiency, quality a competitiveness of products and services in order to improve your own institution.

Such characteristics indicate that benchmarking is not a one-off activity it should be used on a continual basis and should be incorporated in the organisation's inspection and management structure.

BUT used benchmarking both at a national (University of West Bohemia, Pilsen) and international (ESMU / EBI) level. It will continue to use it because in view of the key characteristics of the projects it is offered (they are non-normative, client-oriented, leadership and management, continual improvement, fact-based decision-making and management, long-term outlook of the main activities with more requirements and under financial instability, multiplicity of objectives) it believes that it is a sound approach to internal and external quality assurance and assessment. The activities undertaken in this area up to the present have provided BUT with positively applicable ideas.

Ranking

In this approach, organizations are ranked by preset criteria. The ranking results can be used to mark a university's prestige and recognition as compared with the others.

Since 2007 BUT has been systematically concerned with ranking, particularly in view of the THES – QS World University Rankings (The Times), which seems to be the most frequently used ranking of universities. BUT also keeps a close watch on the rival Academic Ranking of World Universities, set up by Shanghai Jiao Tong University's Institute of Higher Education (The Economist). Further BUT considers as noteworthy the CHE / DIE ZEIT University Ranking gradually gaining ground in the EU.

BUT uses the outcomes of the ranking studies to design the strategy of management and decision-making processes and, very strongly, to en-

courage and motivate the academic staff in order to achieve a prestigious ranking and improve competitiveness.

5. 3. Data on financial audit

Setting up and maintaining an efficient internal audit system.

Under Act no. 320/2001 Coll., concerning financial audits, a BUT internal auditing system was defined and configured by internal regulations in 2004. This created conditions for economical and purpose-fitted spending while fulfilling the BUT Mission Statement objectives.

The regulation to implement an internal auditing system, bursar's guideline no. 62/2004, had been amended in the course of the preceding years and 2008 to meet the real needs of BUT management.

Also the BUT Department of Inspection and Internal Audit (DIIA) was extended in 2008. This created conditions suitable for conducting more professional internal audits and providing an optimum auditing sample with respect to the cash flow to be audited. BUT also created conditions for improving the professional standard of internal auditors by implementing the CSM 43 development project to support continual professional improvement of internal auditors at public universities.

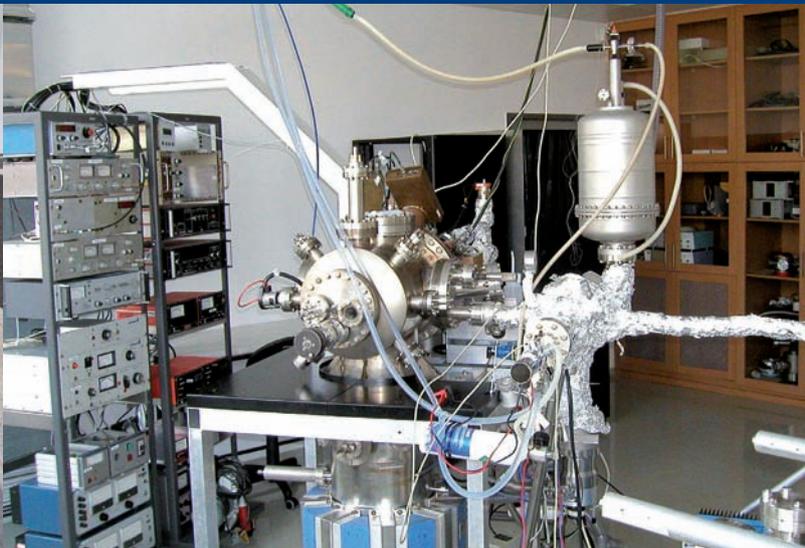
Since 2005, the internal audit system has also involved the identification and evaluation of risks resulting from carrying out the tasks set and achieving the objectives approved. A new IS was introduced at BUT in 2007 for setting up a risk map for each BUT faculty and department to be then used to evaluate a BUT overall risk map. Based on the results of an internal audit, a separate risk map was made for DIIA. Thus the risk map was processed both by the BUT management and a BUT internal audit.

Using the results of determining the most hazardous areas, risk maps were evaluated becoming the basis for setting up an annual plan of

internal BUT audit. Internal audits were focused on property purchase, registering and stock-taking, using the financial resources in selected subsidy chapters and for selected science and research projects. In 2008 the DIIA audit plan was related to the results of the internal audit and focussed on monitoring the fulfilment of the recommendation of the internal audit. In 2008 the efficiency of the internal audit system was monitored and evaluated in terms of individual internal audits.

Information on suspected and proved cases of corruption.

In connection with the audit methods, there were no cases of corruption proved at BUT.





BUT DEVELOPMENT

6. 1. Involvement in the University Development Fund projects

Also in 2008 BUT got considerably involved in work on the University Development Fund projects. Table 6.1. shows the subsidies in UDF project categories.

6. 1. Involvement in the University Development Fund – involvement in programmes financed from the EU Structural Funds

Table 6.1. BUT Involvement in the 2008 University Development Fund Programmes

Thematic group	Number of projects accepted	Capital subsidy (thousand CZK)	Ordinary subsidy (thousand CZK)	Total subsidy (thousand CZK)
A	25	39080	0	39080
B	1	0	160	160
C	1	0	250	250
F	78	0	16103	16103
G	60	0	5949	5949
Total	165	39080	22462	61542

In 2008, BUT continued cooperation with Masaryk University in Brno, other Brno universities and institutes of the Czech Academy of Sciences in order to prepare joint projects to be financed from the EU Structural Funds (this particularly applies to the „Research and Development for Innovation“ projects (R&Dfl)). In addition to this activity, some faculties (FME, FEEC, FCE, FIT, FC) prepare their own R&Dfl projects into priority axis 2 for small and medium R&Dfl projects, which they plan to submit in response to the first call for projects into this priority axis. At present there are seven projects prepared for the priority axis 2 R&Dfl Operative Programme with funding of about 3.5 million CZK. The R&Dfl projects being of key importance for the future of research and development at BUT, they receive due attention by BUT officials. An internal assessment of the R&Dfl projects was made

based on an internal criteria system and data available in the BUT information system, placing emphasis on an estimate of the sustainability of potential projects. In compliance with the R&Dfl Operative Programme requirements, BUT builds an internal system of commercializing the R&D results. The Institute of Technology Transfer prepared information for BUT faculties and units including a description of the present situation and outlooks to be used by the submitters of priority axes 1 and 2 R&Dfl operative programme projects. A project for creating a system of commercializing as a whole will be submitted for priority axis 3. It will include a formalization of each step, involvement in the information system, relevant methodologies, guides, decision-making processes, responsibilities, dates, etc.

6. 2. Involvement in Projects Financed from the EU Structural Funds

Tab. 6.2. BUT Involvement in Projects Financed from the EU Structural Funds

operative progr. (title)	measure (title)	project	project implementation time	amount received (thousands CZK)	amount received for 2008 (thousands CZK)
OP RLZ	Measure 3.1	CZ.04.2.03/3.1.15.2/0393 Further education of teachers at technical secondary schools to improve cooperation with industries	18 months	5294.590	3793.667
OP RLZ	Measure 3.2	CZ.04.1.03/3.2.15.1/0072 Development of teaching skills	24 months	4776.550	472.593
OP RLZ	Measure 3.2	CZ.04.1.03/3.2.15.1/0073 Education in Electronic System Design	24 months	1999.700	199.218
OP RLZ	Measure 3.2	CZ.04.1.03/3.2.15.2/0286 Modernization and innovation of architecture courses	24 months	2042.400	2041.577
OP RLZ	Measure 3.2	CZ.04.1.03/3.2.15.2/0285 Innovation of mechanical- engineering-oriented fields in the conditions of information society	24 months	7977.500	3479.840
OP RLZ	Measure 3.2	CZ.04.1.03/3.2.15.2/0374 Improving the preparedness of students to enter practical jobs	24 months	1348.860	252.895
OP RLZ	Measure 3.2	CZ.04.1.03/3.2.15.1/0003 Improving the competitiveness of IT graduates for the European labour market	24 months	7707.733	604.715
OP RLZ	Measure 3.2í	CZ.04.1.03/3.2.15.2/0284 Improving the education and competence of managers as part of the Economics and Management Master's programme offered by the BUT Faculty of Business and Management	24 months	2965.293	1088.849
OP RLZ	Measure 3.2	CZ.04.1.03/3.2.15.2/0292 Modernizing teaching methods at the BUT Faculty of Civil Education in Bachelor's and Master's degree programmes	24 months	9319.949	2336.454

OP RLZ	Measure 3.2	CZ.04.1.03/3.2.15.2/0257 Management in the conditions of Eastern-European countries and Russia	24 months	3260.000	510.000
OP RLZ	Measure 3.2	CZ.04.1.03/3.2.15.1/0106 A comprehensive set of lifelong courses in applied chemistry, environment protection, and crisis management	24 months	2421.000	155.341
total				49113.575	14935.149

6. 3. BUT involvement in the development programmes of the Ministry of education, Youth, and Sports

Involvement in programmes financed from the EU Structural Funds

Table 6. 3. BUT Involvement in the development programmes for public higher-education institutions

Development programmes for public higher-education institutions	Number of projects submitted	Number of projects accepted	Funding received (thousands of CZK)	
			capital	ordinary
Programme of support for internationalisation	3	3	0	15620
Programme for the preparation and development of human resources	2	2	0	8350
Programme of the development of equipment and state-of-the-art technologies	4	4	19650	7040
Programme of support for equal opportunities for admission to and study at universities including development of consulting services	3	1	0	1 200
Programme of support for the development and activities of the universities of the third age and other life-long learning courses for senior citizens	1	1	100	900
Programme of support for overcoming the university weaknesses	5	5	0	9740
Centralized development projects (university as the coordinator)	5	4	6950	10534
Total	23	20	26 700	53 384





7

CONCLUSION

For BUT, 2008 was another year of continuity and positive evolution at all levels and in all forms of education, significant in research and development, fruitful in cooperation, and remarkable in management methods and processes. Without deviations, the key figures of the BUT Mission Statement and its amendments had been achieved with all the activities being carried out in order to fulfil the BUT's mission and strategic visions with a view of its own development and in favour of its academic community and the entire society and in order to maintain and strengthen BUT's position in the domestic and international context. The year 2008 also saw preparations for taking advantage of outside opportunities, particularly those that could be crucial for the university's further development and for fulfilling its mission. It was a year of attention concentrated on the changes reforming the European and Czech tertiary education and on their impacts on BUT. In science and research, BUT mostly concentrated on the EU Operative Programmes, particularly on the Education for Competitiveness and Research and Development for Innovation operative programmes. BUT cooperation with the industrial and social sphere also grew significantly. In this respect, Brno University of Technology was among those universities that led the initiative even under the circumstances brought about by the outside political framework.



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