ANNUAL REPORT 2011

STU
MTF

SLOVAK UNIVERSITY OF TECHNOLOGY IN BRATISLAVA
FACULTY OF MATERIALS SCIENCE AND TECHNOLOGY IN TRNAVA

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FACULTY OF MATERIALS SCIENCE AND TECHNOLOGY

PREFACE

Oliver Moravčík, Professor, PhD.
Dean of the Faculty

Ladies and gentlemen,

we have altogether played our part in making our institution's assessment a success in 2011.

Here is an opportunity for a brief recap and also the possibility, at least in a wider sense, to indicate what the leadership of the faculty, all of you present here, and I want this faculty to become.

Briefly and concisely, the ARRA Agency has noted that we have taken a large step, when we, in the ranking of technical faculties, have progressed by 10 positions into the top third of the best among the technical faculties. Among STU's seven faculties we are in fourth place. I must emphasize that this is not because of a significant reduction in the number of students, but is especially due to the improvement of quality in our work's outcomes -- publishing activities and an increase in the financial capacity of our research work. If we consider the reduction in the number of students, this is mainly due to a demographic development in Slovakia. In any case, it has not been reflected in our payments. Here is some information for our honorable guests: three years ago we had, in all forms and levels, approximately 5400 students. By the 31st of October 2011 we had 3800 students, so we are still most likely the largest faculty in Slovakia.

During the past year, under the rules of the comprehensive accreditation in 2009, we have had reaccredited 17 study programs at all three levels, due to the qualifications of the supervisors or for accreditation granted for one run. For re-accreditation we had 14 proposals which were approved without any problems. Problems did arise for the remaining three study programs; after careful consideration we did not ask for accreditation in the study programs in the field of engineering pedagogy, although we were the only technical faculty to have been successful in the past in providing these programs. We do not want to make excuses, but the original guarantors of these pedagogical study programs, after consultations with the accreditation committee, refused to accept them. A short explanation: the original guarantees in 2008 were based on a professor from the technical field and an associate professor from the pedagogical field. Currently, the Accreditation Commission requires the opposite, such as a professor from the pedagogical field and a second supervisor, and an associate professor from a technical field. After several months of futile searching we could not meet these requirements. Consequently, this was very hard for the faculty. The original Institute of Engineering Pedagogy and Humanities had to be gradually transformed after September 2011 into a lecturer's cabinet. Engineering pedagogy at the faculty will finally end on the 31st of August 2012, after defense of the last diploma theses in the incriminated study programs. I am going to ask the question, which these days is probably of little interest to people: "Will the pedagogical faculties in Slovakia educate teachers of technical subjects for our secondary technical schools and vocational schools to the same level as we did?"

The answer must be given by competent officials; unfortunately it will probably be too late.

A very similar situation with us and also in the whole of Slovakia, is in the field of study programs relating to quality engineering. With the leave of two supervisors at the end of last year, the study programs of production quality will probably be forced to be reaccredited. As a result of this we will have to reaccredit this study program in another context, for example, as a part of materials engineering technology or materials engineering.

With special satisfaction I can say that our engagement in applying for funding from the EU structural funds has a long and continuous nature which is still extremely successful. By the way, within the last month we applied and are applying for projects, totaling 58 million Euros. This is the level of funding which currently represents the faculty budget for five years. It is almost unbelievable that this time also includes the officially authorized construction activities and other activities amounting to almost 23 million Euros; this means two fully equipped construction projects at our campus on Bottova Street.

We decided to start discussing the quality of the educational process

in all levels and bodies of the faculty. The ultimate goal is for a significant reduction of the number of students who leave the faculty prior to graduation; nearly 50 percent of matriculated students of the faculty leave before graduation. Firstly, it is understood as a waste of taxpayers' money. It is one of the important discussions relating to the reduced number of candidates for study, because of demographic trends, to stabilize state students at the faculty and thus to ensure long-term financial stability of our institution. The main question in this context is: What profile of graduates is called for today by the private and public sector, where most of our graduates find their careers? It is still comparable to 20-30 years ago, when the important part of our pedagogic judgment makers graduated at university. We realize that at that time the elite from secondary schools studied; this was 10-13 percent of the yearly population. It is surely a shock to many of you that today nearly 70 percent of young people in Slovakia study. If, based on the premise that each generation's samples are valid according to Gauss's law of distributed random variables, meaning that at that time and also today, the number of gifted and excellent students is comparable, we cannot apply the old procedures of 30 years ago in the present pedagogical process. If we say that it is not possible to reduce the level of education, we will at least, in the future, have to define it instead of talking about it as an imaginary variable. In this context, we do not want to repeat the known fact that the best students from Slovakia study abroad. The Czech Republic states that almost 25,000 students from Slovakia are studying there, and studying technical fields is not popular right now, due to their difficulty and complexity. Whilst mentioning Gauss, the application provides insight not only on students' success, but also on the quality and the pedagogical capability of individual teachers, as we do not want to demonize teachers, students or Gauss's law.

However, a further provision, which is not yet sufficiently exploited, is our doctoral students: we have 200 in full-time study and almost another hundred in external study. A doctorate week is scheduled at the end of this month, where our PhD students from six institutions will be mutually notified about their work and will look for links to specific cooperation between institutions. We have set clear and simple limits for the doctoral publications, which within one year or at the most two must be of a significantly much higher quality. For example, we will require a minimum of three registered outputs in the electronic databases; therefore students can defend their dissertations.

At this point I want to thank the management, staff and workers from all the economic administrative staff, and of course their teams. They are consistently implementing a challenge to the management of the faculty for the conduct of a high level of professionalism in their work and the introduction of internationally comparable standards in their daily work. The service offered to our students and employees by the faculty can now effectively withstand any criticism and I am personally extremely proud of the level of these offered services. We are talking about thousands of students, hundreds of employees and millions of euros. The management of the faculty will continue to support the mobility of the administrative staff in high level EU institutions as well as their involvement in projects from Structural Funds, which even they successfully initiate, administer and implement. Ladies and gentlemen, thank you.

Ladies and gentlemen, our success cannot be thought of without our partners from the government, public and private sectors. We assume that the partnership is beneficial for both parties. Allow me to designate crucial institutions from abroad and from Slovakia, although it is clear to me that it is not possible at this point to mention them all: the County and Town of Trnava, DELCAM with its gift of several million Euros, Beakert, JAVYS a.s., VUJE a.s., Orange Slovakia, Prva zváračská a.s., ŽOS Trnava, Helmholtzzentrum Dresden-Rossendorf, IFW Dresden, TU Dresden, TU Ilmenau, Univerzita Miskolc, Univerzita Zagreb-Varaždín, University Kecskemeth, University Koethen-Anhalt, State Technical Univesity Izhevsk, Universidad Martha Abreu Santa Clara, as well as many other partners from the Czech Republic, Austria, Germany, Poland, Serbia and Croatia.

Surely there is more which could be mentioned here; we will have more to boast about and to complain about here. Let me outline where the faculty's management identifies the key areas for the coming year:

The fulfillment of the ambitious plan of building a campus on Bottova Street.

Consistent preparation for comprehensive accreditation in 2014, in view of the now reactivated, interrupted process of the novel university law.

To ensure sufficient resources for 5 percent of the faculty's co-financing projects from structural funds, which may already in the near future become a KO criterion for the faculty; it may also paralyze the financial operation due to the late returns of projects.

Preparation of the FP8 project with foreign partners in institutions for the period starting in 2014 – more than 50 Billion Euros have been allocated to the joint European Research Area

Development of a quality system for the faculty with an emphasis on individual processes to improve the quality of the educational process and the rebuilding of the teacher-student relationship to a partnership including involved talented students into research that are already in the second stage.

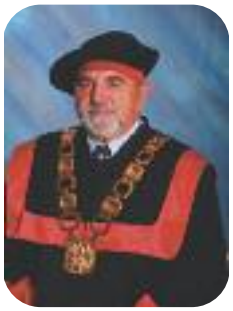
Ladies and gentlemen, let me finish by thanking you all for all the positive things you have given to the faculty in the past year that have lead me to believe that your enthusiasm, commitment and identification with the faculty in the coming year will not falter. Once again I wish you good health and luck.

Oliver Moravčík, Professor, PhD
Dean of the Faculty

MANAGEMENT OF THE FACULTY

Oliver Moravčík, Professor, PhD.

Dean of the Faculty



Jozef Peterka, Professor, PhD.

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- Development
- Information Technologies
- Know-how Transfer
- Prognostics

Mária Mišútová, Assoc. Professor, PhD.

Vice-deans

- Bachelor Degree
- Accreditation of Bachelor Degree
- Motivation Scholarship
- Study Promotion

Peter Schreiber, Assoc.Professor,PhD.

Vice-deans

- Engineering and PhD Degrees
- Accreditation of Engineering and PhD Degrees
- Student Social Affairs
- Education Quality, Educational Process Inspection

Peter Grgač, Professor, PhD.

Vice-deans

- Research
- International Relations
- Professional Development of Academic Staff

Helena Vidová, Assoc. Professor, PhD.

Vice-deans

- Internal Relations
- Public Relations
- Security System
- Publishing Activity
- Social Programmes for Staff
- ALUMNI

INSTITUTES OF THE FACULTY

Institute of Materials Science (UMAT)

Institute of Production Technologies (UVTE)

Institute of Production Systems and Applied Mechanics (UVSM)

Institute of Industrial Engineering, Management and Quality (UPMK)

Institute of Safety and Environmental Engineering (UBEI)

Institute of Applied Informatics, Automation and Mathematics (UIAM)

Institute of Engineering Pedagogy and Humanities (UIPH)

DETACHED WORKPLACES

Komárno Detached Workplace

Dubnica Detached Workplace

DIVISIONS OF THE FACULTY

Division of Academic Activities

Division of Knowledge Management

Division of Economical and Estate Activities

Division of Communication and Information Systems

Division of Personnel and Administration Activities

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DEVELOPMENT OF THE FACULTY OF MATERIALS SCIENCE AND TECHNOLOGY STU 2011

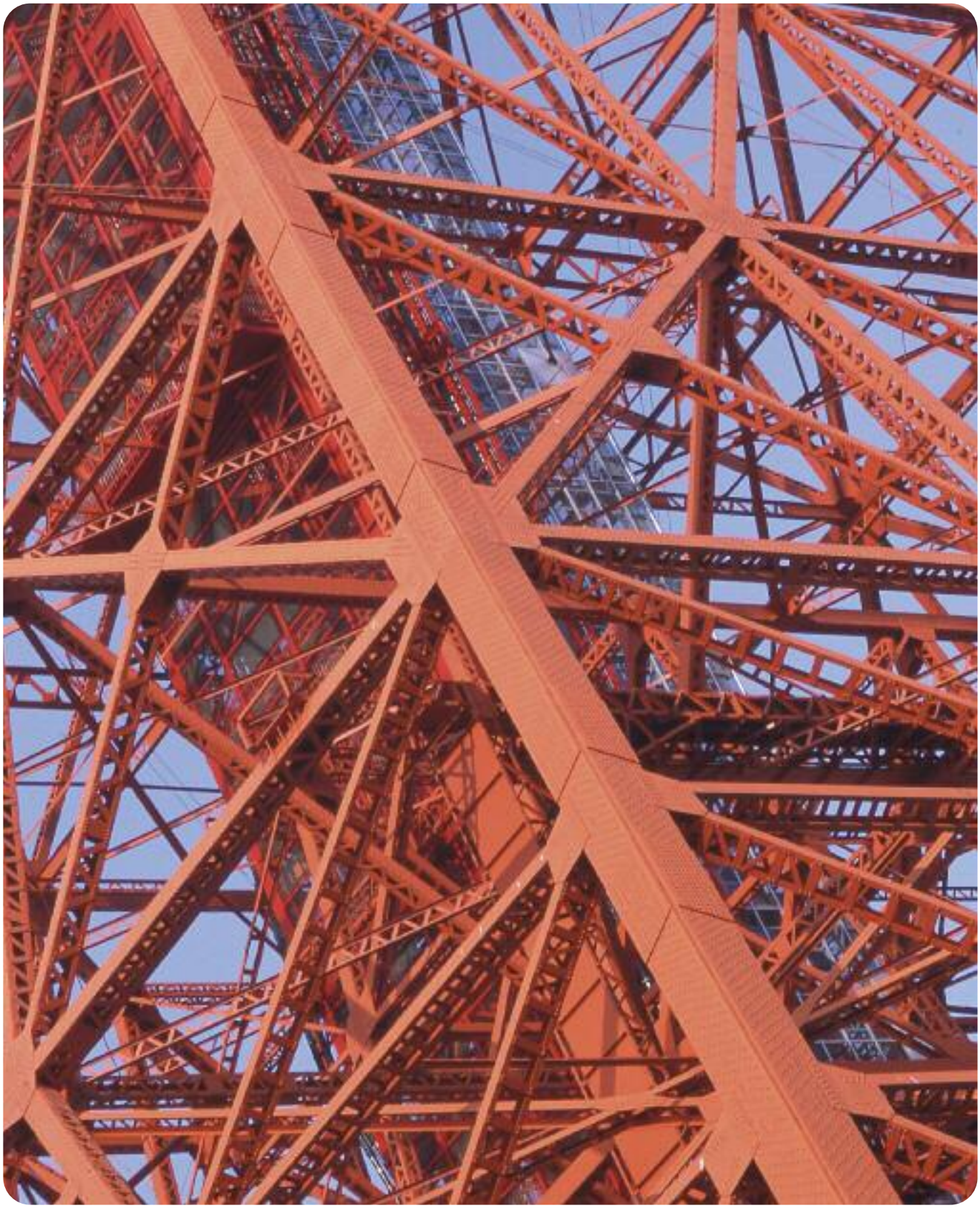


Photo by Milan Maróneк

DEVELOPMENT OF THE FACULTY OF MATERIALS SCIENCE AND TECHNOLOGY STU 2011

The main priorities of development

in the year 2011 were focused on:

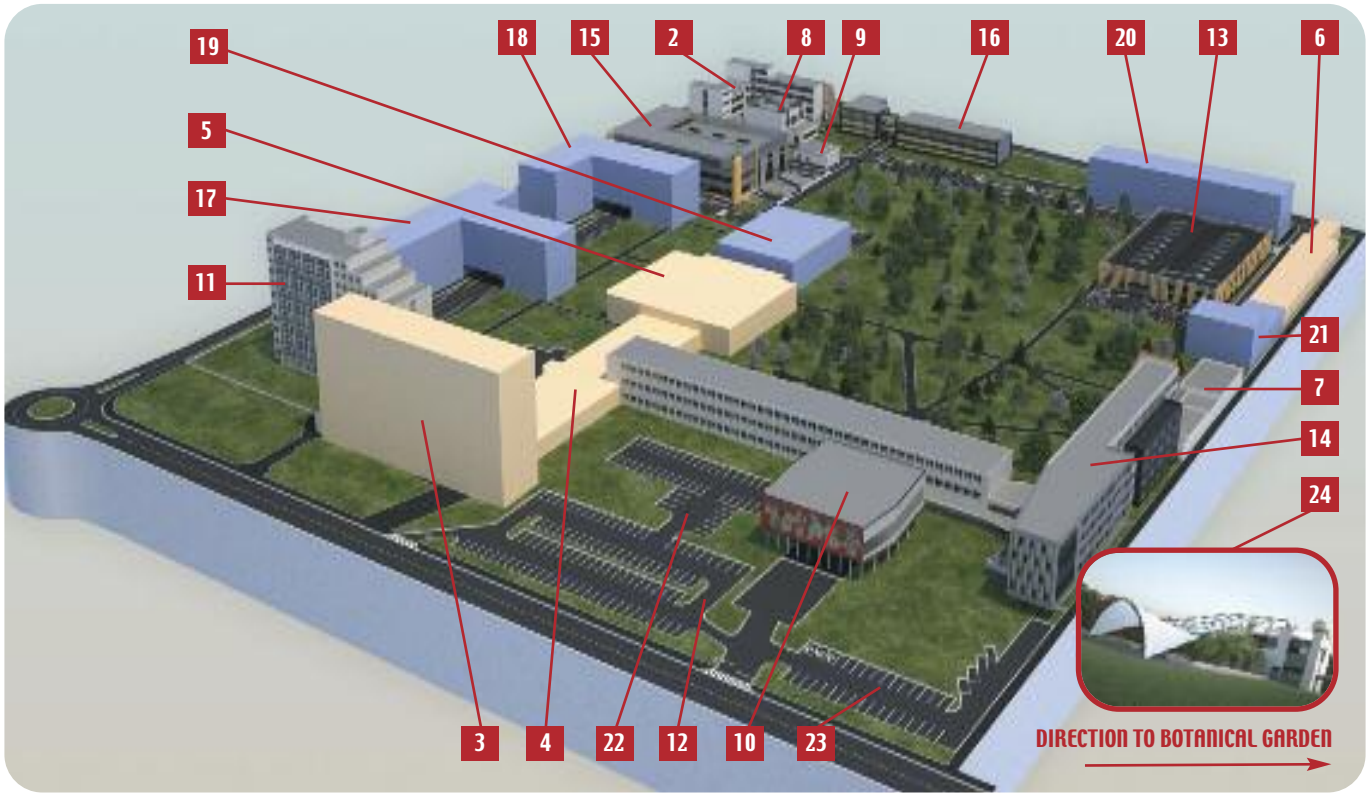
1. Projects of research infrastructure creation:

Institute/workplace	Operation programme	ITMS	Title of project in the Slovak language	Time Period of Project
Institute od Production Technologies	OPVaV	26220120013	Centre of Excellence for 5-axis Machining	
Institute of Materials Science	OPVaV	26220120013	Centre of Excellence for Development and Application of Diagnosis Methods by Metal and Non-metal Materials Processing	1.5.2009-30.4.2011
Institute od Production Technologies	OPVaV	26220120045	Centre of Excellence for 5-axis milling – Experimental Base for High-tech Research	1.1.2010-31.12.2011
Institute of Materials Science	OPVaV	26220120048	Centre of Excellence for Development and Application of Diagnosis Methods in Metal and Non-metal Materials Processing	1.1.2010-31.12.2011
Division of Knowledge Management	OP VaV	26220220054	Centre of Knowledge Institution of Intellectual Property	1.1.2010-30.6.2012
Institute of Production Systems and Applied Mechanics	OP VaV	26220220055	Laboratory of Flexible Production Systems with Robotized Regulation in Area of Production without Design	1.1.2010-30.6.2012
Institute of Safety and Environmental Engineering	OP VaV	26220220056	Hybrid Electrical Source for Technical-advisory Laboratory of Application and Propagation of Renewable Energy Sources	1.10.2009-31.3.2013
Institute of Engineering Pedagogy and Humanities	OPV	26110230023	Development of Pedagogical Competencies of PhD students at MTF STU	1.5.2010-30.4.2013
Division of Knowledge Management	OPV	26110230024	A Knowledge Regulated Tool System of Graduate Employment in the Integration Process in EU	1.4.2010-30.9.2012
Slovak University of Technology	OPVaV	26250120019	Improvement and Modernization of Education and Information Communication Technology	1.7.2009-30.9.2011
VUJE,a.s.	OPVaV	26220220077	Increasing the Energy Safety of the Slovak Republic	1.7.2010-31.12.2013
MIKON,s.r.o.	OPVaV	26220220137	Industrial Research on Silentblock for Overload by Extreme Temperatures in Area of Industrial Application	1.2.2011-31.01.2015
Town Trnava/UVTE	INTERREG III	22410420007	AUTOPLAST	1.1.2009-31.12.2011

2. Reconstruction of faculty buildings:

Object of reconstruction	Place of reconstruction
Reception	T- building (Bottova street)
Lecture hall number 201	T- building (Bottova street)
Jozef Adamka Lecture Hall	T- building (Bottova street)
Data container	Campus Bottova
Reconstruction of network	MTF STU

3. Design of the project and construction documentation for development of the Bottova Campus



LEGEND

1. BUILDING OF THE FACULTY – THE SEAT OF UMAT, UVTE, OPOM
2. BUILDING OF THE FACULTY – THE SEAT OF UBEI, LABORATORIES OF UVSM
3. OLD DORMITORY
4. CONNECTING CORRIDOR WITH CATERING HALL
5. GYMNASIUM AND SWIMMING POOL
6. LABORATORIES OF TECHNICAL WELDING AND FORMING
7. LABORATORIES OF TECHNICAL MATERIALS AND MACHINING
8. FOUNDRY
9. TRANSFORMERS/PHYSICAL PLANT
10. BIG LECTURE HALL – CAPACITY 600
11. NEW DORMITORY
12. NEW PARKING LOT
13. NEW BUILDING OF THE CENTER OF EXCELLENCE FOR 5-AXIS MACHINING
14. CONSTRUCTION PLAN FOR BUILDING OF AUTOMATION LABORATORY – valid Construction permission
15. CONSTRUCTION PLAN FOR BUILDING OF LABORATORY FOR MATERIAL RESEARCH – documentation in process
16. CONSTRUCTION PLAN OF DEAN'S OFFICE BUILDING– study, valid Territorial license
17. CONSTRUCTION PLAN OF DEAN'S OFFICE BUILDING– valid Territorial license
18. CONSTRUCTION PLAN OF BUILDING – LECTURE HALLS – valid Territorial license
19. CONSTRUCTION PLAN OF BUILDING – MULTI-FUNCTIONAL HALL for library, study hall, cultural events for students
20. CONSTRUCTION PLAN OF BUILDING – MULTI-FUNCTIONAL SPORT HALL - study, valid Territorial license
21. CONSTRUCTION PLAN FOR BUILDING OF LABORATORY FOR TECHNICAL FORMING– valid Construction permission
22. CONSTRUCTION PLAN OF PARKING LOT – valid Construction permission
23. CONSTRUCTION PLAN OF PARKING LOT – valid Construction permission
24. BOTANICAL GARDEN with rare plants – CONSTRUCTION PLAN OF MULTI-ENERGETIC GREENHOUSE

WORKPLACES:

UMAT - THE INSTITUTE OF MATERIALS
UVTE - THE INSTITUTE OF PRODUCTION TECHNOLOGIES
OPOM - THE DIVISION OF KNOWLEDGE MANAGEMENT
UBEI - THE INSTITUTE OF SAFETY AND ENVIRONMENTAL ENGINEERING
UVSM - THE INSTITUTE OF PRODUCTION SYSTEMS AND MECHANICS

ACCREDITATIONS

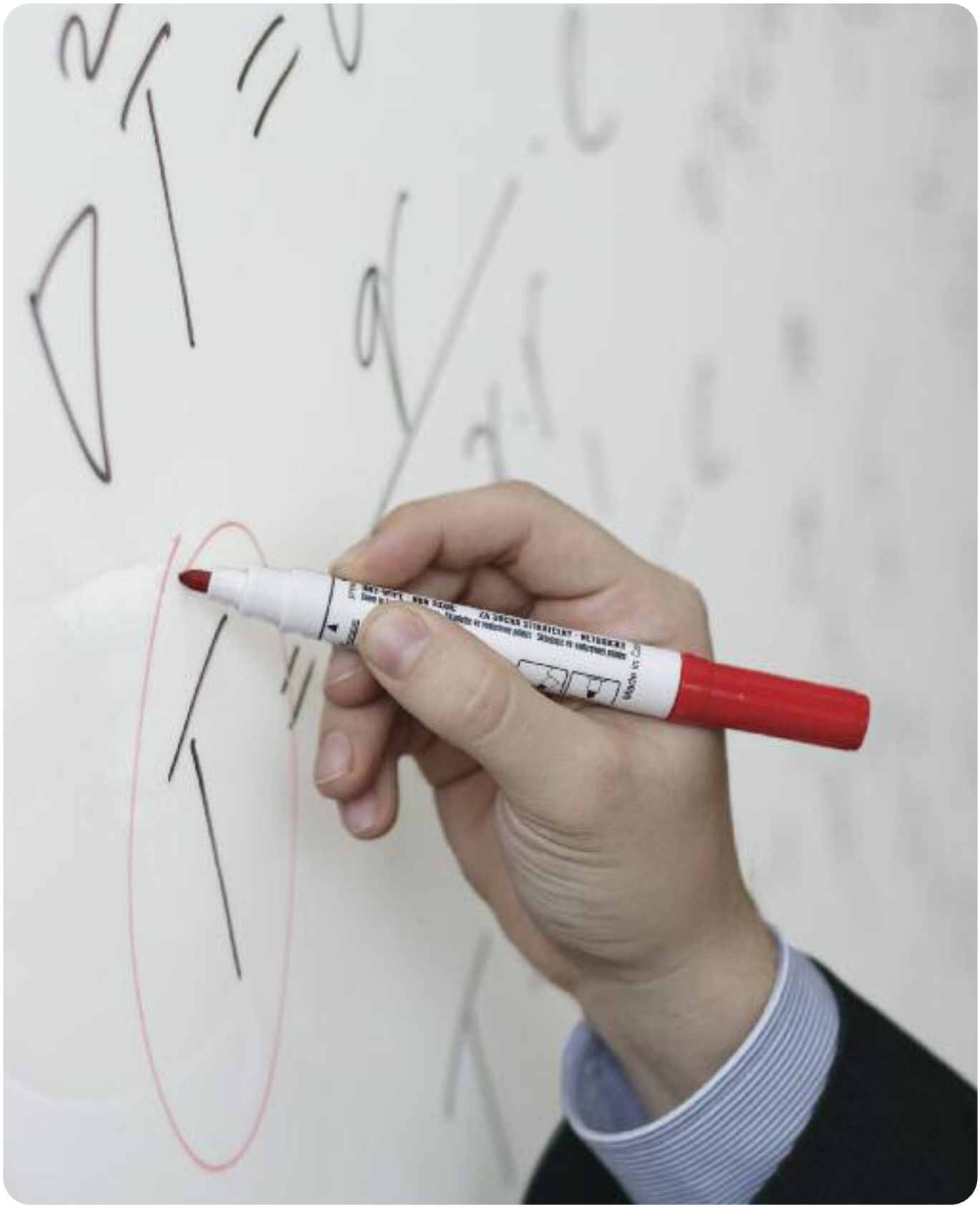


Photo by Milan Maršnek

ACCREDITATIONS

The Faculty of Materials Science and Technology (MTF) is accredited as a university type of institution. In 2011, through a complex accreditation process, the faculty gained the right to give the academic title "bachelor" to the graduates of 10 study programs, the academic title "engineer" (corresponding to the master degree) to the graduates of 12 study programs, and the academic title "philosophiae doctor" to the graduates of 9 study programs in full-time and part-time study formats.

Accredited study programs at the faculty

in the year 2011 were focused on:

Accredited study programs – Bc.

- Applied Informatics and Automation in Industry
- Material Engineering
- Production Devices and Systems
- Computer-Aided Production Technologies
- Production Technologies
- Industrial Management
- Personnel Work in Industrial Plant
- Quality of Production
- Occupational Health and Safety
- Teaching Practical Subjects in Engineering Majors

Accredited study programs – Ing.

- Applied Informatics and Automation in Industry
- Materials Engineering
- Processing and Application of Non-metals
- Production Devices and Systems
- Machining and Assembly
- Computer-Aided Design and Production Welding
- Industrial and Art Foundry
- Industrial Management
- Integrated Safety
- Teaching Specific Engineering Subjects
- Engineering of Production Quality

Accredited study programs – PhD.

- Process Automation and Informatization
- Materials Engineering
- Processing and Application of non-metals
- Production Devices and Systems
- Industrial Management
- Integrated Safety
- Machining Technologies and Materials
- Didactics of Technical Professional Subjects
- Engineering of Production Quality

Study system and organization

The credit system introduced at Slovak University of Technology (STU) has been implemented in all three degrees of university education at MTF STU, in compliance with the law and accreditation within the defined standard length of study for both full-time and part-time study formats.

Degree 1: bachelor studies, completed by granting the academic title "bachelor" - Bc. Having successfully passed the State exam and gaining the academic title of "bachelor" (Bc.), the graduates can either continue to study in degree 2, or leave the Faculty.

Degree 2: master studies, accomplished by gaining the academic title of engineer – Ing. (corresponding to MSc.)

Degree 3: doctorate studies– both full-time and part-time formats, while the defined standard length of study in full-time format is 3 years and in part-time format 5 years. The study is accomplished by gaining the academic title of "philosophiae doctor "– PhD.

All of the above mentioned programs can be studied either full-time or part-time, or externally in the case of PhD study.

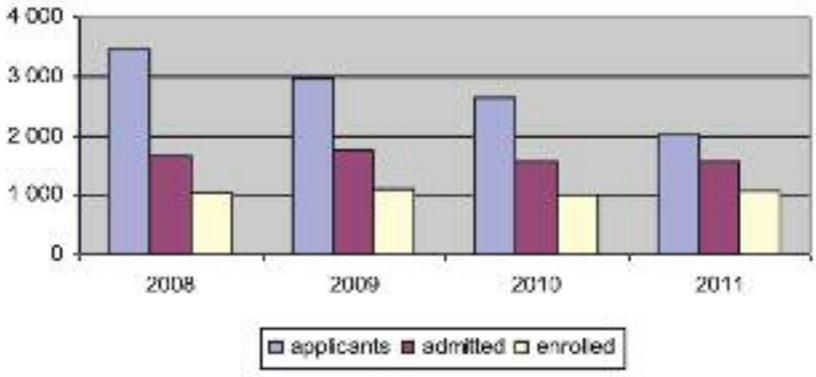
Interest in study

The Faculty has had quite stable interest in study within individual degrees. A decrease in the number of the students admitted and enrolled was due to a change in financing of universities by the Ministry of Education SR, and consequently the changed policy of the Faculty's management policy. The decreasing number of applicants is due to the decreasing demographic curve and the number of new universities and colleges in the Slovak Republic.

Graph No. 1.

Number of the bachelor degree candidates

(applicants, admitted, enrolled)
within the last four years



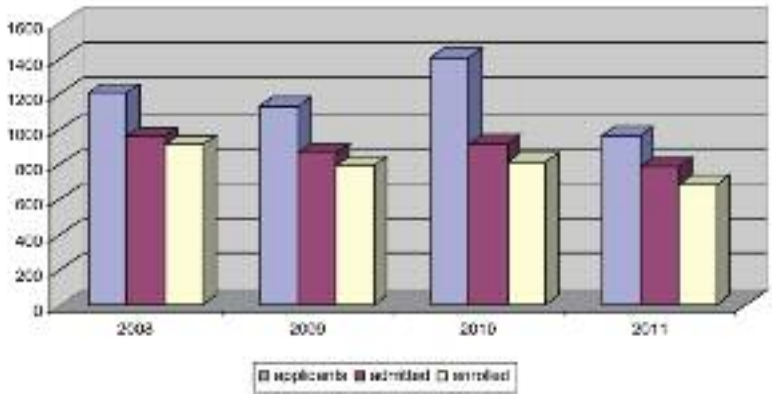
Admission procedure varies according to the degree.

The admission procedure for the bachelor degree is first of all based on the criteria of the applicant's secondary school results, i.e. without entrance examination. The interest in study, declared through participation in specialized competitions, is very important too.
Besides the results from the bachelor degree, the admission procedure for the master degree considers the results of the entrance examinations in 3 profile subjects within the program studied.

Graph No. 2.

Number of master degree candidates

(applicants, admitted, enrolled)
within the last four years



The faculty management is satisfied with the fact that besides the MTF STU Bc graduates interested in master studies, there is a high number of candidates from other universities. (Tab. No. 1). It is proof of the high quality of the master study programs of the faculty that the programmes are interesting not only for graduates of the faculty, but for graduates of other universities too.

Tab. No. 1

Master degree candidates: graduates of MTF STU and other universities in the year 2011

Applicants	**MTF graduates**	**678**
	From other universities	**283**
	Total	**961**
Enrolled	**MTF graduates**	**508**
	From other universities	**177**
	Total	**685**

The admission procedure for the doctorate degree is comprised of the entrance examination consisting of discourse regarding the chosen topic of the doctorate thesis and English language test. The aim of the faculty is to increase the number of internal students of PhD study. These students potentially represent quality university teachers and researchers.

Tab. No. 2

Number of PhD candidates in the last three years

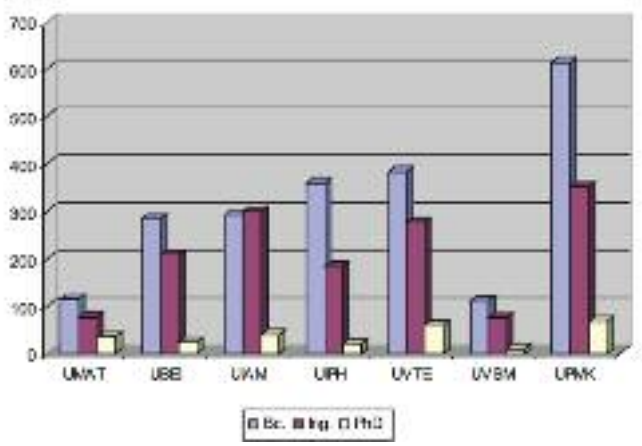
	2009		2010		2011	
	Full-time	**Part-time**	**Full-time**	**Part-time**	**Full-time**	**Part-time**
applicants	**138**	**38**	**119**	**33**	**85**	**15**
enrolled	**99**	**24**	**36**	**26**	**35**	**11**

The number of full-time PhD students (Tab. No. 2) is influenced by the financial policy of the Ministry of Education, Science, Research and Sport of the Slovak Republic, where the number of scholarships allotted to a university is based upon the criterion of the university's achievements in research (domestic grants, foreign grants, internal PhD candidates having passed the dissertation exam, number of PhD graduates and a share of publication activity).

Study and teaching are guaranteed by particular institutes of the faculty. Every institute provides all three degrees of education. The number of students at particular institutes is illustrated in Graph 4.

Graph No. 4.

Number of students in individual Faculty institutes by 31/10/2011



Abbreviations used:

UMAT - Institute of Materials
UBEI - Institute of Safety and Environmental Engineering
UIAM - Institute of Applied Informatics, Automation and Mathematics
UIPH - Institute of Engineering Pedagogy and Humanities
UVSM - Institute of Production Systems and Applied Mechanics
UPMK - Institute of Industrial Engineering, Management and Quality
UVTE - Institute of Production Technologies

Study conditions

Regarding the premises and administration, the study conditions in the Faculty are favorable.

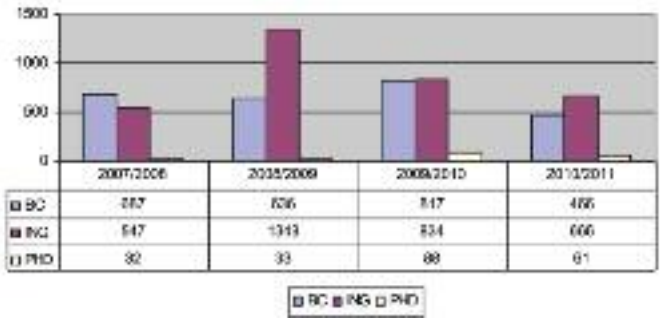
We managed to improve access to textbooks by implementing the model of electronic textbooks available for all the Faculty students free of charge. Trying to meet the students' requirements, we introduced Saturday office hours in the Registrar's Office and the Academic Library. Regarding social policy, the study at the detached workplaces in Komárno and Dubnica nad Váhom (the first year of bachelor studies) is quite significant.

Besides study, the students can be involved in institutional research activity either by participating in research projects and the Student Research Conference, or working as a research student-helper. The Student Research Conference provides the students of degrees 1 and 2 with a chance to get acquainted with research methods, to analyze a research task and articulate the attained research results in both oral and written forms, and to defend their opinion in a professional forum. PhD students can present partial results of their research projects in the International Doctoral Seminar, an annual event organized by the Faculty and attended also by PhD students of foreign universities and research institutes from abroad.

Besides the students of Slovak citizenship, there are also foreign students studying at MTF STU. Unfortunately, the Faculty is failing to attract a higher number of foreign students, so their percentage is quite low so far.

QUALITY OF EDUCATION

Education efficiency and quality can be assessed by various criteria and parameters, such as placement rate of graduates and the unemployment rate regularly announced by the Ministry of Labour, Social Affairs and Family, SR. The fact that STU is among the universities with the lowest unemployment rate is justified by the educational quality and interest of social practice in STU faculty graduates.



The aim of the educational process is the training of graduates for their future profession. Its efficiency is measured by various methods, the most important of which is the method of feedback mapping of the students' opinions regarding the study contents, activities of the educational process implementation, study environment and teaching strategies. Besides this tool of educational quality improvement, the Faculty carries out a survey regarding the students' satisfaction with the aim to identify weaknesses in the education process, teaching strategies, as well as administration and organization.
The students of MTF STU have a chance (in accordance with the law on Universities No. 131/2002 statute) to participate in a survey via a questionnaire which was available on the webpage of the faculty. These areas were in the questionnaire: process and organisation of the study, quality and professional behaviour of teachers, quality of the teaching process, accommodation, and other areas.
The questionnaire for evaluation of education activity level from the perspective of students was processed in electronic form in September 2011. Approximately 300 students took part on it till the end of year. We can expect that participation of students will reach minimally the level of the last questionnaire from year 2010 (324 participants). The students of all study degrees could participate and express their opinion on the aforementioned areas of educational processes at the faculty. The faculty management deals seriously with suggestions from questionnaires, and it also informs students and teachers on possible solutions or repair processes.

SOCIAL MATTERS

Accommodation and board are provided for students in the Student Hostel of M. Uher and the adjacent cafeteria and snack bars. Students mainly appreciate the quite high standard of comfort including free Internet wi-fi connection, as well as availability of sports facilities such as the fitness centre, gym, indoor swimming pool and tennis courts, directly in the campus.

Besides the above-mentioned facilities, students can take advantage of social scholarships and other bonuses such as the ones for study achievements and motivation, study loans and consultancy in the Career centre. All of this is considered when designing the time schedule, length of a training unit, arrangements of subjects, administrating the student agenda via AIS, PC connection, medical care and the possibility of arranging

one's matters in the Registrar's and Academic library on Saturdays, etc.
A psychologist was employed for the purpose of supporting spiritual and mental well-being of students. She helps students to manage critical situations and to orient themselves in a new academic area.
As amended by law, the social system includes both enforceable and non-enforceable scholarships provided within the framework defined by the Act on Universities or internal University and Faculty legislation.

Awards of students

30.11.2011 – Letter of gratitude to faculty students
The organisation of the Slovak Association of Nature and Land Protection in Považská Bystrica awarded a "letter of gratitude" to Bc. Jozef Kozák, a student of the second school year of master study at MTF STU. His active participation in the project "Improvement of environment in Pružina, where we live and work" was awarded. The student participated by removing illegal dumps and creating a relaxation zone for people in Pružina. The letter of gratitude was given by the dean of MTF prof. Moravčík , who expressed also thanks for student activities and positive presentation of the faculty.

MASTER AND BACHELOR STUDENTS COMPETITION ON INNOVATION IN THE AUTOMOTIVE SECTOR 2011 took place from the **21st October** to the **31st October 2011**. Bachelor and Master theses were evaluated. The competition was focused on the area of innovation development in the automobile industry.

Theses were evaluated by internal and external experts.

Winners:

Place	Name and SURNAME of author	TITLE OF ARTICLE
1. place	Roman VIDEN	Rapid Prototyping Technology as Used on the Innovation Process in Automotive Industry
2. place	Marta ŠPIRKOVÁ	The Cooperation of Universities and Automotive Industry in the Area of Education and Innovations
3. place	Veronika KONÍČKOVÁ	The Cooperation of Secondary Schools and Automotive Industry in the Area of Education

The Ph.D. COMPETITION ON INNOVATION IN THE AUTOMOTIVE SECTOR 2011 took place from the 1st October to the 10th October 2011. PhD theses specialised on the area of innovation development in automobile industry were evaluated.

Theses were evaluated by internal and external experts.

Winners:

Place	Name and SURNAME of author	TITLE OF ARTICLE
1. place	Martin BELUSKÝ Marián HODULÍK	Optimization of Material Flow Innovation in the Automotive Sector
2. place	Jana MAKRAIOVÁ	A Proposal to Improve the Adaptation Control System in Automotive Sector Enterprises
3. place	Katarína KRAJČOVIČOVÁ Veronika VIDENOVÁ Vanessa PRAJOVÁ	 Innovation in Automotive Industry People's Involvement and their Competence in Marketing Communication According to the Quality Management Systems

On the 10th October 2011 the dean of the faculty **Oliver Moravčík** welcomed our student and successful representative of the Slovak Republic in sport shooting **Bc. Monika Zemková**. She placed first at the XXVI. World University competition of 2011 in skeet shooting. At the same time she was one of the Slovak Olympic team members, with the possibility of participation in the Olympic Games of 2012.

The most significant successes:
The World Championship 2007 – 2nd place
The European Championship 2007 – 1st place
The World Championship 2010 - teams – 3rd place
The European Championship 2010 - teams – 1st place
The World Championship 2011 - teams – 3rd place
The European Championship 2011 - teams – 2nd place
The World Summer University competition 2011 (Shenzhen, China) – 1st place

18.07.2011 - Honourable mention for an excellent thesis and Prize of Dean - year 2010/2011

In the academic year 2010/2011 the faculty's dean awarded the prize of **"Honourable Mention of the Dean"** for excellent thesis:

BACHELOR STUDY FORM – Full-time study form, daily enrolment

No.	Surname and Name	The Title of Thesis	Institute of MTF
1	Bacigálová Katarína.	A Study of Fire-technical Properties of Polystyrene	UBEI
2	Bartek Ján, Bc.	An Idea for Design of a Clamping Head for Rotation Components	UVSM
3	Duchovičová Soňa, Bc.	Systems of Optical Identification of Persons	UIAM
4	Ďuriška Libor, Bc.	A Metalographical Analysis and Preparation of a Thermodynamic Database for Complex Metal Alloys of the Al-Pd-Co System	UMAT
5	Habala Daniel, Bc.	Design of Measurements to Increase Efficiency of Selected Activities of Logistics via the Tools Lean in Company HANIL E-HWA AUTOMOTIVE SLOVAKIA	UPMK
6	Hudáková Martina, Bc.	Intercultural Communication in the Company Samsung Electronics Slovakia, s.r.o., Galanta	UIPH
7	Chytil Martin, Bc.	Design of a Regulation Programme at Robotized Workplaces for Preparation of Pathological Preparations with colouring	UIAM
8	Kolenová Monika, Bc.	The Job Interview and Design of Record Interview Sheet in the Company PSA Slovakia	UIPH
9	Marek Peter, Bc.	Laser Welding of CrNi Austenite Steel with Construction Carbon Steel	UVTE
10	Nedorost Lukáš, Bc.	Quality Improvement of the Education System at the Company Semikron spol. s r. o. Vrbové	UIPH
11	Neslušan Ondrej.	Study of the Application Level of Complex Management of Quality in Organizations Participating in the National Prize of the Slovak Republic for Quality	UPMK
12	Pechová Lenka, Bc.	Design of Measurements for Personnel Preparation in the Company Continental Matador Rubber, s.r.o. Púchov in the Area of Enviro. Management in Connection with Strategy	
13	Rozkošová Beáta, Bc.	Evaluation of Finance Source Possibilities in the Company Slovenské lodenice Komárno, a.s., Bratislava	UPMK
14	Sýkorová Tamara.	Application of x-rays for the 3D Digitization (x-ray scanners and computer tomography)	UVTE
15	Vach Roman, Bc.	Laser Technologies in Machining	UVTE
16	Virág Daniel.	3D Scanning of Large Scale Objects	UVTE
17	Zelník Roman.	Design of a Programme for Disposition Solutions of Mechanical Productions	UVTE

BACHELOUR STUDY FORM – full-time study form, daily combination method

No.	Surname and Name	The Title of Thesis	Institute MTF
1	Habánek Peter.	Safety and Health Protection for Work at Sewage Treatment Plant	UBEI
2	Hlubík Matúš.	Safety by Transport of Radioactive Waste in Nuclear Power Plants	UBEI
3	Límová Alena, Bc.	Design of Measurements to Improve the Management System Claims in the Company Letecké opravovne Trenčín, a.s.	UPMK
4	Mandincová Henrieta, Bc.	The Class Climate and Attributes of its Formation	UIPH
5	Nyigri Norbert, Bc.	The Design and Processing of Management of Production Workplace with Simatic S7-300	UIAM
6	Pikusová Silvia.	The Design of Measurements to Improve the Management of Claims in the Company ZF SACHS Slovakia, a. s.	UPMK

MASTER STUDY FORM – full-time study, daily enrolment

No.	Surname and Name	The title of thesis	Institute MTF
1	Beluský Martin, Ing.	The design of a System for Application of Financial Analysis in Finance Management of the Company Púchovský mäsový priemysel, a.s.	UPMK
2	Bodzionyová Barbora, Ing.	Environmental and Safety Aspects of Biogas Production from Biomass	UBEI
3	Budinská Barbora, Ing.	Safety Requirements for Personal Protection Tools of Welder	UBEI
4	Ferenczi Csaba, Ing.	Influence of thermal treatment parameters on the mechanical properties and the microstructure evolution of AISI 440B martensitic stainless steel	UMAT
5	Hankeová Nadežda, Ing.	Storage systems and Product Identifications PVS in the Company Hanil	UVSM
6	Hencz Marián, Ing.	Methods of Surface Finishing after Machining	UVTE
7	Hlaváčová Ivana, Ing.	Growth of Intermetallic Phases on the Connection solder - substrate	UVTE
8	Hodulík Marián, Ing.	Design for Process Efficiency by Sampling of Input Material in the company Zentiva, a. s., Hlohovec	UPMK
9	Homolová Martina, Ing.	Application of the Document on Bullying in Preparation of Teachers	UIPH
10	Hrablayová Katarína, Ing.	Application of Video Recording for Teachers Self-diagnostics	UIPH
11	Hromada Michal, Ing.	Effects of precipitation on the pitting corrosion of high nitrogen austenitic stainless steel P560	UMAT
12	Hurajt Marek, Ing.	The Influence of Applied Filter Type for Filling of mould cavity and amount of inclusion in cast from aluminium alloy	UVTE
13	Kohútová Martina, Ing.	Planning of the Teaching Process	UIPH

14	Kováč Martin, Ing.	The Design of Incidental Time Shortening in the Production Process at the Company HS - Tec, spol. s r. o., Trenčín	UPMK
15	Marko Marián, Ing.	The Production Rationalisation of Forming Tools	UVTE
16	Mikuláš Matej, Ing.	The Design of Rationalisation of an Assembly Line for Production of Front Bumpers in the Company Faurecia Slovakia s.r.o. a Subsidiary of Front End Hlohovec	UPMK
17	Ondriga Ľuboš, Ing.	The Design and Regulation of LED for Orientation Lighting	UIAM
18	Pangrác Daniel, Ing.	An Intelligent Clamping System on the Base of a Pneumatic Vice	UVSM
19	Pastier Martin, Ing.	A Study of the Fire Process in Selected Polyolefins	UBEI
20	Pitek Ján, Ing.	The Design of Management System Functions of Intelligence House	UIAM
21	Pobiecky Jakub, Ing.	Evaluation of the Influence of Selected Priority Rules in Operation Planning to Reach Production Aims	UIAM
22	Sedilek Róbert, Ing.	Predictive Analysis of the Performance of a Virtual (planned) Robotic Casting Line	UIAM
23	Skokánková Radka, Ing.	Stereotypes and Prejudices in Middle School Students´ Perception	UIPH
24	Varmužová Ivana, Ing.	Managing the Study Load of Students of Middle Schools	UIPH
25	Videnová Veronika, Ing.	The design of a Concept of Integrated Management System	UPMK

MASTER STUDY FORM – Full-time study form, daily combination method

No.	Surname and Name	The title of Thesis	Institute MTF
1	Heteš Marek, Ing.	Visualization of Cutting Fluid Flow in Machining Process	UVTE
2	Hippová Monika, Ing.	Inspection of Measurement Indices and Controls as a Part of Increasing Process Performance	UPMK
3	Hôrka Milan, Ing.	Drag Welding of Thin Copper Pipes	UVTE
4	Libošvárová Adriána, Ing.	The Segmentation of Images	UIAM
5	Marušincová Andrea, Ing.	The Project Processing of Self-Evaluation Application in the Company GAMO s r.o. Banská Bystrica	UPMK
6	Šulan Marián, Ing.	The Repair of a Pressing Tool with Scanner ATOS and 5-axis Milling	UVTE

The Dean's Prize was awarded to the graduates of bachelor study form for excellent study results

No.	Surname and Name	Grade Point Average	Study Form and Method	Institute MTF
1	Balluch Richard, Bc.	1.43	daily enrolment	UBEI
2	Ďuriška Libor, Bc.	1.39	daily enrolment	UMAT
3	Chrvalová Veronika, Bc.	1.47	daily enrolment	UPMK
4	Jurík Lukáš, Bc.	1.32	daily enrolment	UPMK
5	Rozkošová Beáta, Bc.	1.48	daily enrolment	UPMK
6	Salaj Matej, Bc.	1.39	daily enrolment	UMAT
7	Sokolovská Barbora, Bc.	1.49	daily enrolment	UPMK
8	Sýkorová Tamara, Bc.	1,37	daily enrolment	UVTE
9	Štefáková Lucia, Bc.	1.47	daily enrolment	UBEI

19.05.2011 – The Faculty Students as the Winners of Soccer Tournament "The Rector's Cup UCM" in Trnava
The Students of MTF STU took part in university tournament "The Rector's Cup UCM" on 9.5. 2011 in Trnava. They won first place.

03.05.2011 – Employees and Students in Sport Competitions "The Rector's Cup STU"
The results of students:
The most successful team were swimmers of MTF STU, who reached 1st place and touring "The Rector's Cup STU":
Kamila Korčeková, Miriama Kořínková, Tomáš Vachan, Andrej Lukačovič.

Results of students "The Rector's Cup STU" 2011:

Soccer students	3rd – 5th place
Soccer students	5th place
Volleyball students women	2nd place
Volleyball students men	4th place
Basketball students	5th place
Table tennis students women	2nd and 3rd place
Table tennis students men	5th place

02.05.2011 – Students of MTF STU on Olympic Games in Russia

19- 21.4.2011 the faculty students:
Bc. Ladislav Rolník, Bc. Stanislav Novák and **Bc. Matej Baumgartner** (Study Programme: Production appliances and systems) took part in the **"First Students International Olympiad on Mechanics and Machine Science."** It was organized with the University IžGTU in Izhevsk (Russian Federation). The supervisors were **Assoc. Prof. Ing. Milan Nad', CSc.** and **Ing. Rastislav Ďuriš, PhD.**

13.04.2011 – The Student Research Conference at the Faculty of Materials Science and Technology STU 2011

The Results of Student Research Conference 2011

INSTITUTE OF MATERIALS
Section: Materials

Place	Title of Work	Supervisor
1. Bc. Emil Seliga	Rheological Analysis for Vulcanization of Rubber Mixes on a Base of Styrene-butadiene	Mgr. Ondrej Bošák, PhD.
2. Libor Ďuriška	Metalographical Analysis and Preparation of a Thermodynamic Database for Complex Metal Alloys of the Al-Pd-Co System	Ing. Ivona Černičková
3. Matej Salaj	Application Possibilities for Laser Scanning with a Confocal Microscope	Doc. Ing. Martin Kusý, PhD.

INSTITUTE OF PRODUCTION TECHNOLOGIES
Section: Production Technologies - Machining and Assembly 1

Place	Title of Work	Supervisor
1. Roman Zelník	3D Design of a System for Disposition Solution Creation by Production Space	Doc. Ing. Peter Pokorný, PhD.
2. Peter Rezbárik	Design of the RC Plane Model Spitfire	Ing. Martin Kováč
3. Jozef Steinhauser	Strength Analysis of Rims with MKP	Ing. Rastislav Ďuriš, PhD.

Section: Production Technologies - Machining and Assembly 2

Place	Title of Work	Supervisor
1. Bc. Michal Kožík	Construction of a 3D printer	Ing. Ladislav Morovič, PhD.
2. Tamara Sýkorová	Application of x-rays in 3D Digitalization (X-ray Scanner and Computer Tomography)	Ing. Ladislav Morovič, PhD.
3. Bc. Peter Laurov	Production Planning for Selected Parts	Prof. Ing. Ivan Baránek, CSc.

Section: Production Technologies - Welding

Place	Title of Work	Supervisor
1. Bc. Marián Palacka	Welding of Stabilized CrNi Austenite Steel with Construction Carbon Steel	Prof. Ing. Ján Lokaj, PhD.
2. Bc. Martin Desát	Study of the Inter-metallic Phase Forming and Amorphous States by Explosion Welding	Prof. Ing. Milan Turňa, PhD. IWE
3. Bc. Ivana Hlaváčová	Growth of Inter-metallic Phases (IMF) on connection Solder - Substrate	Prof. Ing. Milan Turňa, PhD. IWE

INSTITUTE OF INDUSTRIAL ENGINEERING, MANAGEMENT AND QUALITY
Section: Industrial engineering, management and quality 1

Place	Title of Work	Supervisor
1. Bc. Peter Levický	Risk Definition in Press Company PCA Slovakia, s.r.o. Trnava	Ing. Juraj Drahňovský, PhD.
2. Bc. Matej Mikuláš	Design Rationalization of an Assembly Line for Production of Front Bumbers in the company Faurecia Slovakia, s.r.o. subsidiary of Front End Hlohovec	Doc. Ing. Helena Vidová, PhD.
3. Bc. Kristína Hýsková	Design of Method Process for Optimization of Supply Regulation and Stock Industry in Small Industrial Enterprises in the Slovak Republic	Doc. Ing. Viliam Cibuľka, CSc.

Section: Industrial Engineering, Management and Quality 2

Place	Title of Work	Supervisor
1. Bc. Martin Beluský	Design of Computer Programme for Analysis of Finance Results of Small Enterprises	Doc. Ing. Jana Šnircová, PhD.
2. Bc. Ľubomír Šmida	Corporate Social Responsibility vs. sustainable production, vs. sustainable consumption vs. sustainable marketing vs. sustainable profit.	Prof. Ing. Peter Sakál, CSc. Ing. Gabriela Hrdinová
3. Bc. Dominik Juriš	Design of Creative Space Development in HKS Forge, s.r.o.	Ing. Zuzana Lenhardtová, PhD.

Section: Industrial Engineering, Management and Quality 3

Place	Title of Work	Supervisor
1. Lenka Pechová	Design of Measurements for Personnel Preparation in the Company Continental Matador Rubber, s.r.o. Púchov in Area of Environmental Management in Context with Strategy SZP (CSR)	Prof. Ing. Peter Sakál, CSc. Ing. Gabriela Hrdinová
2. Bc. Jana Turčanová Ondrej Neslušan	Monitoring of Customer Satisfaction in Catering Establishment at MTF STU Trnava	Ing. Jana Urdziková, PhD.
3. Monika Hetešová	Design of an Enterpreneurship Plan for Small Enterprise as a Condition of Competition Safety	Ing. Viera Bestvinová, PhD.

INSTITUTE OF SAFETY AND ENVIRONMENTAL ENGINEERING
Section: Chemical dangers and dangerous substances

Place	Title of Work	Supervisor
1. Katarína Bacigálová	Study of Fire-technical Properties of Polystyrene	Doc. Ing. Ivana Tureková, PhD.
2. Richard Balluch	Unexpected reactions by Operation with Dangerous Substances and Waste	Doc. Ing. Ivana Tureková, PhD.
3. Marcel Kuracina	Hydrogenous fuel elements	Ing. Anna Michalíková, CSc.

Section: Health and Safety

Place	Title of Work	Supervisor
1. Dana Čapkovičová	Personal dosimetry and radiation protection	Doc. Ing. Ivana Tureková, PhD.
2. Michal Masník	System of Machines and equipments safety during repair and maintenance	Doc. Ing. Ivana Tureková, PhD.
3. Tatiana Kamzíková	Voluntary Enterprise Reports in relation to Environment, Health, Safety and permanently sustainable development	RNDr. Miroslav Rusko, PhD.

INSTITUTE OF APPLIED INFORMATICS, AUTOMATION AND MATHEMATICS
Section: Applied Informatics and Automation in Industry

Place	Title of Work	Supervisor
1. Bc. Andrej Strašifták	Application of Inertial System for Robot Regulation	Doc. Ing. Pavol Božek, CSc.
2. Bc. Miloš Mancovič	Frames for Web Applications Development	Ing. Pavol Bezák, PhD.
3. Bc. Ľuboš Ondriga	Design and Regulation of the LED Orientation Lighting	Ing. Michal Kebísek, PhD.

INSTITUTE OF ENGINEERING PEDAGOGY AND HUMANITIES
Section: Social Sciences

Place	Title of Work	Supervisor
1. Martina Hudáková	Multicultural Communication	PhDr. Mgr. Libor Bernát, CSc.
2. Lenka Pompurová	Personalized Preparation of Job Applicants	PhDr. Andrea Hagovská JUDr. Jozef Kudla, PhD.
3. Daniela Mináriková	Design of Improvements in Area of Plant Employees Development	PhDr. Andrea Hagovská

Section: Foreign Languages – English Language

Place	Title of Work	Supervisor
1. Radka Šurinová Zuzana Tarišková	E - communication Means Used by STU MTF Students	Mgr. Gabriela Chmelíková, PhD.
2. Miroslava Stachová	E - books in the Educational System	PaedDr. Zuzana Hrdličková
3. Nikolas Remeš Ján Gondek	Aerogel	PaedDr. Dagmar Rusková, PhD.

RESEARCH

Photo by Milan Maršnek

RESEARCH

The research orientation of the Faculty of Materials Science and Technology corresponds with its pedagogic profile and the long-term orientation of STU. As amended by section 30, paragraph 1, sub-paragraph c of Act 131/2002 of the Coll. on Universities and as amended by other acts, the Faculty Scientific Board evaluates the Faculty's activity in the field of science and technology once a year.

Orientation of the research

The scientific and research activity of MTF STU's research and pedagogical staff is carried out in the following forms:
- projects of basic research
- projects solved within international programmes
- projects of international collaboration
- projects of applied research and development
- projects of contractual research

The research content is oriented to the following fields:
- materials research with a focus on the research, development and technological processing of the basic and new kinds of technical materials,
- research, development and optimization of new technologies of industrial production oriented particularly on the technological processing of modern technical materials and ecologically clean processes and products, numerical simulation of technological processes
- process identification, automation and control, as well as information support for technological, production and organization systems,
- research and verification of managerial control principles and their organization structures,
- quality control and certification of processes and products,
- safety and reliability of technological equipment and systems, while emphasising the analysis methods and systems synthesis,

The Faculty of Materials Science and Technology with the seat in Trnava, Slovak University of Technology in Bratislava was evaluated in four areas of research in the complex accreditation of activities. The research areas related to the faculty study programmes are:

Research area	Evaluation
Mechanical Engineering	A
Metallurgy and Materials	A
Information Sciences, Automation and Telecommunication	B
Engineering and Technology	B+

Research activities

In year 2011 research projects under the VEGA, KEGA, AVV and other programmes were engaged in and solved at the faculty. The number of projects in the year 2011 from the particular agencies, grant schemes and contractual research are as follows:

	Number
Projects VEGA (Basic research grant agency)	26
Projects KEGA (Cultural and education agency)	8
APVV (Agency for support of research and development)	8
6th framework programme	1
7th framework programme	2
Other foreign projects	2
Projects of contractual research	77

Research activities

MTF STU forms cooperation on the basis of good partnership relations which are typified by mutual cooperation, profit in the area of research activities, or experience in education.
The active cooperation of our organisation, reflected in agreements concluded with foreign partners, is proof of the necessity for searching of new partnerships and cooperation according to this base.

Institutes which signed contracts for cooperation with the faculty:
Agreements on Cooperation with Foreign Partners

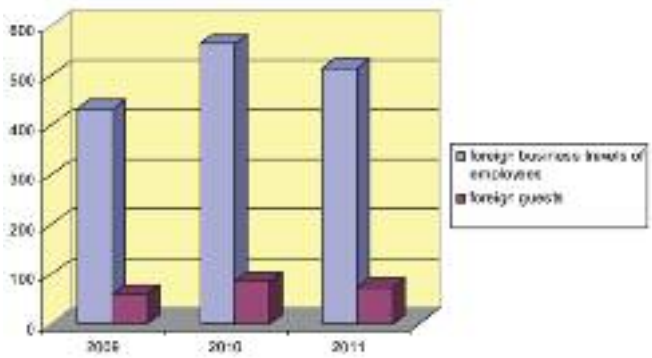
	Foreign Partner	Country	City/Town
1	Helmholtz-Zentrum Dresden Rossendorf	Germany	Rossendorf
2	Technical University of Brandenburg	Germany	Cottbus
3	Leibniz-Institute for Solid State and Materials Research Dresden	Germany	Dresden
4	Anhlat University of Applied Sciences	Germany	Koethen
5	Faculty of Machining, University in Ljubljana	Slovenia	Ljubljana
6	St. Petersburg State University of Engineering and Elektrotechnics	Russia	Saint-Petersburg
7	Institute of Energy in Moscow	Russia	Moscow
8	Buehler GmbH	Germany	Düsseldorf
9	Ukrainian Academy of Engineering and Pedagogy	Ukraine	Charkov
10	Faculty of Applied Informatics and Robotechnology UGATU	Russia	Ufa
11	Faculty of Economics, Management and Finances UGATU	Russia	Ufa
12	National Institute of R and D for Materials Physics	Romania	Bucharest
13	Faculty of Physics University of Bucharest	Romania	Bucharest
14	University of Science and Technology in Pohang	South Korea	Pohang
15	Faculty of Organization and Informatics, University of Zagreb	Croatia	Zagreb
16	Bekaert	Belgium	Zwevegem
17	Faculty of Machine Building Technical University of Cluj-Napoca	Romania	Cluj-Napoca
18	Instytut technologii eksploatacji (Institute of Technology)	Poland	Radoma
19	ČVUT Prague	Czech Republic	Praha
20	University of Miskolc	Hungary	Miskolc
21	Institute for Systematical Coaching and Organisation Advisory	Germany	Berlin
22	Delcam PLC, Birmingham	United Kingdom	Birmingham
23	Faculty of Economics and Management	Poland	Zielona Góra

Students mobilities

The students of MTF STU participate in exchange programs of short-term and also long-term scholarships. In 2011 the faculty had 32 agreements in the Erasmus programme. The dominant Erasmus partners are institutes in Poland (8 agreements), Czech Republic (5 agreements), Germany (5 agreements), and Hungary (3 agreements).

Business travels and foreign guests

Development of relations with international partners in the last three years is reflected in the number of foreign guests and business travel of our employees to foreign institutes.



Membership in Slovak and international organisations

The faculty cooperated on the international level in significant scientific and technical organisations in the last year. MTF STU is an institutional member in five professional international institutions. Employees of the faculty are active in different Slovak (139 individual memberships) and also international or world organisations (49 individual memberships) in different positions, from members to chairs, vice-chairs and members of councils.

Membership in international professional organisations

Association for Thermal Processing of Metals
International Society for Engineering Pedagogy - IGIP
European Platform of Women Scientists
European Network Education and Training in Occupational Safety and Health (ENETOSH)
Europalliance for Innovations

Memberships in the Slovak professional organisations

Slovak Natural Gas and Crude Oil Union
Slovak Chamber of Commerce and Industry
Slovak Society for Quality
Automobile Cluster
Slovak Society of Ergonomics
Slovak Society of Maintenance
Slovak Association of Libraries
Slovak Society for Cybernetics and Informatics, SAV
Association of Machining Industry SR

Approved rights to provide habilitations and academic titles

According to the Law N. 131/2002 (Collection of Laws), on universities and modification, and completion of some laws as amended, the Faculty of Materials Science and Technology, Slovak University of Technology in Bratislava is approved to process of habilitation and academic promotion of professors in the following study fields:

5.2.7. Mechanical Engineering and Materials
5.2.14. Automation
5.2.26. Materials
5.2.50. Production Techniques
5.2.52. Industrial Engineering
8.3.5. Occupational Health and Safety
5.2.57. Production Quality

New Professors and Associate Professors in year 2011

New Professors
prof. Ing. Milan Marônek, PhD. (24.1.2011)
prof. Ing. Peter Šugár, PhD. (24.1.2011)

Visting profesors
Ing. Augustín Gese, CSc. (2. 5. 2011)
Ing. Miroslav Božik, PhD. (7.12.2011)

Associate Professors
doc. Mgr. Dagmar Cagáňová, PhD. (2.5.2011)
doc. RNDr. František Lofaj, DrSc.

Milan Marônek

Peter Šugár

Augustín Gese

Miroslav Božik

Dagmar Cagáňová

František Lofaj

INTERNAL RELATIONS

Photo by Milan Maršnek

INTERNAL RELATIONS

The year 2011 was the year of the 25th anniversary of the Faculty of Materials Science and Technology, Slovak University of Technology (MTF STU).

The following activities were associated with this occasion:
- creation of a logo for the 25th anniversary of MTF STU
- documentation of events during the last 25 years in a five-part banner of MTF STU on the faculty web page
- information on the anniversary, information panels in the pavilions Z and T
- articles in regional newspapers
- exhibition of publication activity for 25 years
- new exposition of posters on the development of MTF STU

Events which were organized for the occasion of the 25th anniversary of the faculty establishment:
- Sports day MTF STU (12.9.2011)
- Meeting with former employees of MTF STU (10.11.2011)
- St. Nicholas day at MTF STU for children of employees (3.12.2011)
- Ceremonial evening at MTF STU (6.12.2011)
- Colloquium for I. Hrivňáka (14.12.2011)
- New-Year's session (19.1.2012)

The year 2011 was the year of the creation of new dean commissions, when new rules for commission formation, as well as the process activity map of the dean commission, were adopted:

Officially named commissions of the dean at MTF STU

1. Commission for social issues of students	Chairman: Peter Schreiber, Assoc.Prof., PhD.
2. Evaluation commission	Chairman: Peter Grgač, Professor, PhD.
3. Editorial commission	Chairman: Helena Vidová, Assoc.Prof., PhD.
4. Ethics commission	Chairman: Milan Nad', Assoc.Prof., PhD.
5. Social commission	Chairman: Helena Vidová, Assoc.Prof., PhD.
6. Commission for Education Quality	Chairman: Peter Schreiber, Assoc.Prof., PhD.

Ad hoc commissions of dean

1. Selection commission for pedagogical employees	Chairman: Helena Vidová, Assoc.Prof., PhD.
2. Enrollment commission of dean for enrolling of students on the I.,II. and III. study grade	Chairman: Oliver Moravčík, Professor, PhD.
3. Selection commission for management	Chairman: Oliver Moravčík, Professor, PhD.

Social Programmes for Staff of the Faculty of Materials Science and Technology
MTF STU creates the following conditions of social policy for employees according to their rights defined in legislation. The management of MTF STU is interested in employee opinions. Every year a survey is prepared to obtain feedback as a tool to decide about future changes. The faculty management discusses the results of the survey (which are available for the public) and new measurements are created on the basis of the survey of satisfaction.

In the year 2011 the Dean's regulation No. 3
The method for application of social fund instruments of MTF STU with the seat in Trnava
- was adopted. It is connected with the use of grants for:
- catering
- transportation to and from work for employees who are up to conditions mentioned in the § 7 par. 5 of law on Social fund
- social help to young employees
- recreation for children
- state of social poverty as a result of natural catastrophe
- state of social poverty as a result of some extraordinary serious events
- social help in case of death
- social help by long-term incapacity to work
- regeneration of unpaid blood donors
- health care
- spa and rehabilitation care
- admission fee for cultural or sport events organised as a part of social programme for employees of MTF STU

Employee board of MTF STU

The employee board of MTF STU was established at the faculty after elections in June 2009 for period of four years. It represents the interests of all employees in accordance with valid labour codes and the collective labour agreement.
The representants on the employee board of MTF STU took part in all meetings of the faculty management, the collegium of the dean, in meetings of UOO STU in Bratislava and in job interviews for pedagogical positions during the year. The board participated in the schedule creation for use of the gymnasium and swimming pool with employees of MTF STU and the preparation of the menu; it took part as well in a petition organized with the Union of employees of school system and research in connection with creation of new labour codes.
The employee board of MTF STU:
- discussed all materials dealing with holiday planning, collective holidays, a directive of the dean regarding application for social fund resources and others.
- discussed all applications for prolonging employment, termination of working relationships because of redundance after implementation of the automatic calling centre
- approved grants from the social fund in agreement with the Union Contract from year 2011
- participated in evaluation of following of Collective labor agreement as well as preparation of new Collective labor agreement for year 2012 in the form of comments to a draft and completion of the draft
- submitted ideas of faculty employees for solving problems on particular panels.

Security system

Status in the area of work accident risks, illnesses caused by work, dangerous events and dangerous industrial accidents:

Status of working conditions (following the rules):
- creation of a new directive by the dean No. 8/2008 on "Work and workplaces which are forbidden to pregnant women and mothers to the end of the ninth month after giving birth, and breastfeading women,"
- the categories of work from the perspective of health risks.

Personnel and protection of working appliances:
- the list of working activities,
- the report on the state of technical equipment and control, revision and repair

Areas for the training of Work Safety and Health Protection employees and creation of rules:
- admission training – 33 employees
- periodical training of employees - 181 employees
- training of management - 20 employees
- the first instructions for students
- training of employees to provide first aid – 21 employees.

Public Relations

The aim of editorial activity at MTF STU is to secure the fast transfer of results of research knowledge development and education into syllabi via publications, and to enable access of students to new knowledge and improve the teaching process.

Editorial activity has an important role, especially from the perspective of publication activities of faculty authors, and it has strong presentation importance for the faculty.

In 2011 a new portal for publishing was initialised at the faculty.

Number of published publications at MTF STU in year 2011		
Monographs	**Textbooks**	**Scripts**
14	6	9

Periodical publications of MTF STU in year 2011		
Title of journal	**Number of volumes**	**Number of contributions**
Journal research papers	2	23
Journal, Materials Science and Technology	4	34
Books of contributions	7	158

In 2011 a contract with the company Versita was signed, where the basis is that the journals of MTF STU can be published by the service MetaPress.

List of the most important events at the faculty in year 2011

JANUARY 2011	
03.01.2011	MTF STU with the seat in Trnava moved to a modern digital system of switchboards in the last days of year 2010
14.01.2011	The STU Ball
20.01.2011	New-year session at MTF STU
20.01.2011	Certification UNIcert® - twelve students of MTF STU.
27. 01. 2011	Open House for students interested in study at the Faculty of Materials Science and Technology STU with the seat in Trnava.

FEBRUARY 2011	
03.02. 2011	Exhibition of audiovisual compositions and photographs of the cycle Magic Plasm and Rapsody of Light of prof. Milan Marônek from UVTE MTF STU Trnava, in Dresden.
07.02.2011	Meeting of representatives of the town of Trnava and the Faculty of Materials Science and Technology with seat in Trnava, STU Bratislava
10.02.2011	Thursday afternoon: MUDr. Georgi Krastev, PhD.- "Vascular brain events."
15.02.2011	Cancellation of Detached workplace MTF in Brezno
18. 02. 2011	"Day of open door" for middle schol students from region of Komárno.



MARCH 2011

03.03.2011	Visit of prof. Dr. Sc. Antun Stoič, the dean of partner faculty in Slavonský Brod (Veleučilište by Slavonsky Brod, Croatia).
08. 03. 2011	Award of Prize of St. Gorazd for emeritus professor MTF STU Dr.h.c. prof. Ing. Ivan Hrivňák, DrSc.
09.03.2011	Visit of dean of the Faculty of International Relations of Aztec University in Mexico City, professor Dr. Gerhard Berchtold with Dr. Alfred Wagner from University of Mining Leoben/Austria.
10.03.2011	Thursday afternoon: František Kele – Around the World with František Kele.
12. - 13. 03. 2011	The 37.th year of International swimming competition "Grand Prize of Trnava"
23.03.2011	Monitoring of customer satisfaction in school canteens and refreshment centres of MTF STU
29. 03. 2011	Conferral of discretionary decree to lead the function of vice-dean for study of the II. and III. grades, social issues of all students, accreditation of study on the II. and III grade, quality of education and control activity in education process to Assoc.Prof.Ing. Peter Schreiber, PhD.
29.03.2011	Conferral of discretionary decree to lead the function of director of the Institute of Applied Informatics, Automation and Mathematics to Assoc.Prof. Pavol Tanuška, PhD.
30.03.2011	Meeting of faculty employees on the "Day of teachers"



APRIL 2011

04.04.2011	Reconfiguration of web network at the faculty
07.04. 2011	Starting of eleven new access points to wireless Internet.
07.04.2011	Student Research Conference 2011
12.04.2011	2.4. Lectures and seminars of guests from Poland Ing. Krzysztof Witkowsky, PhD. and Ing. Sebastian Saniuk, PhD. from University in Zelena Gora.
12.-13.04.2011	International Research Seminar: New Trends in Quality Management 2011
12.-15.04. 2011	Sport competitions "Cup of STU Rector"
14.04.2011	Thursday afternoon: JUDr. Zuzana Adamová, PhD. - Copyright and related rights
15.04.2011	The 15.th Professional Seminar ESAB
16.04.2011	New Version of Electronic System of Attendance Evidence (ESED)
19.- 21.4.2011	The faculty students of study programe Production Appliances and Systems on the "First Students International Olympiad on Mechanism and Machine Science" at IžGTU in Izhevsk (Russian Federation)
28.04.2011	Lecture of BMW Group employee Dr. Ing. Nagy with topic : Software Enginnering in Car Industry



MAY 2011

02.05.2011	The rector Robert Redhammer named new associate professors at STU (Assoc.Prof.Cagáňová)
05.05.2011	Psychological advisory for students of MTF STU
05.05.2011	Meeting of vice-deans of STU for development

06.05.2011	Research Conference dedicated to Professor Pavel Gleskov
09.05.2011	Presentation of laser devices for practice in cooperation with companies PGS Automation s.r.o. and TRUMPF Slovakia s.r.o. at MTF STU.
09.05.2011	Students of MTF STU –winners of inter-university tournament "Cup of UCM Rector"
10.-11.05.2011	Elections into Academic Senate of STU
12.05.2011	The III. Conference of Pedagogical Staff at MTF STU
12.05.2011	Technical lecture of YMS company with topic: "How to get the most modern information technologies into real project?"
15. - 17.05.2011	International doctoral seminar
170.5.2011	Lecture of prof. Dr. Dr. h. c. Peter Joehnk - Administrative Director Helmholtz-Zentrum Dresden-Rossendorf with topic Knowledge Strategy
19.05.2011	Day of health
26.05.2011	Academic meeting of MTF STU
26.05.2011	Thursday afternoon: RNDr. Jozef Brestovský: "Don´t be afraid of ticks and mosquitos"
31.05.2011	Decision to pay a 13th income to MTF STU employees



JUNE 2011

01.06.2011	Festival of experiments at UBEI MTF STU
01.06.2011	Legal advisory for students and graduates of MTF STU
03.06.2011	Events at MTF STU in new banner on the faculty web page
08.06.2011	Admitted rights to MTF STU after complex accreditation
09.06.2011	Evaluation ARRA - web pages of universities SR: successful MTF STU.
10.06.2011	Presentation of machine for thermal clamping of tools, Power Clamp Confort.
17.06.2011	Meeting of enrolling commision for applicants in bachelor study.
20.06.2011	Visit of Professor Nigel Holden from Great Britain, world-known specialist in area of intercultural and knowledge management
23.06.2011	Opening of the reconstructed teaching class on the T-pavillion
24.06.2011	The 11th year of the tennis tournament Teachers' Cup
28. - 29. 06. 2011	Enrollment of new students of bachelor study into the first year of study in accademic year 2011/2012
28.06.2011	Audience for a delegation of university representatives on Commerce and Industrial Chambers, from Turkey, France and Bulgaria



JULY 2011

01.07.2011	New Professor at MTF STU: prof. Ing. Peter Jurči, PhD.
01.07.2011	Reconstruction of the T-pavillion
14.07.2011	Results of entrance exams for master study at MTF STU 2011/2012
15.07. 2011	Portal of publishing at MTF STU
20.07.2011	Awarding of Honourable mentions for the best thesis and Prize of Dean - year 2010/2011



AUGUST 2011

1.8. - 19.9. 2011	Enrollment of students into higher study in academic year 2011/2012
11.08.2011	Portal of graduates of MTF STU Bank of Quality - ALUMNI MTF STU

SEPTEMBER 2011

01.- 12.09.2011	The Faculty of Materials Science and Technology as the host of participants of International Summer School
02.09.2011	History of the faculty in five blocks on banner of the faculty web page
05. - 07. 09 2011	The third year of Summer University of Middle School Students
07.-09.09.2011	Graduation of bachelor students in the academic year 2010/2011
12.09.2011	Sport day MTF STU
14.09.2011	Visit by head technologist and executive vice-president for the area of industrial covers of the company Bekaert, Dr. Dominique Neerinck.
14.09.2011	The fourth conference of pedagogues of the MTF STU
21.09.2011	Speech of the faculty dean for the opening ceremony of new academic year 2011-2012
21.09.2011	Starting of subject evaluation
22.09.2011	Appointment of Prof. Ing. Jozef Janovec, DrSc. for membership in the Slovak Commision for Scientific Titles of the Ministry of Education, Science, Research and Sport SR
23. 09. 2011	Visit of special guest from Sydney, Ing. Dušan Ševčík at MTF STU.
25.09.2011	MTF STU as a member of World Day of Tourist Traffic
26.09.2011	Opening of printing rooms for the faculty students
28.09.2011	Installation of the new data mobile centre in the campus Bottova

OCTOBER 2011

03.10.2011	Meerting of management of the Slovak University of Technology and dean collegium MTF STU
04. - 06.10.2011	MTF STU at the trade fair of Education AKADÉMIA© and VAPAC© in Bratislava
06.10.2011	Welcoming of delegation of National Research University of Information Technologies, Mechanics and Optics from St. Petersburg/Russia. The delegation was led with the dean of the Faculty of Computer Technology and Regulation Systems, professor Alexej A. Bobtsov and vice-dean professor Artem S. Kremlev
06.10.2011	Beginning of the Student questionnaire 2011/12
10.10.2011	Welcoming of successful representatives of the Slovak Republic in sport shooting, Bc. Monika Zemkova, with the dean of faculty.
12.10.2011	University of Technology Cluj Napoca in Rumania presented the title honoris causa to professor Karol Velíšek
15.10.2011	Championship of the Slovak Republic in powerlifting, 2011 at the MTF STU
16.10.2011	Marathon of Small Carpathians
19. - 21.10.2011	The 3rd International Conference TEAM 2011
21. - 31.10 2011	Evaluation of student theses of the bachelor and master study in the competition MASTER AND BACHELOR STUDENT COMPETITION ON INNOVATION IN THE AUTOMOTIVE SECTOR 2011, which were orientated on the area of innovation development in the car industry.
27.10.2011	Visit of dean of the Faculty of Civil Engineering of the University in Astan Professor T.M. Baitassov.
27.10.2011	Thursday afternoon: Mgr. Zdenko Ďuriška- Geneology of Slovak Origins
28.10.2011 and 2.11.2011	Matriculation of the faculty students
28.10.2011	Ceremonial matriculation of the students in the 1. study year - 2011/2012
31.10.2011	New commissions of the dean



NOVEMBER 2011

01. - 4.11.2011	MTF as a participant of the XVIII. Year of European fair trade of life-long education GAUDEAMUS 2011 in Brno
04.11.2011	Signing of an agreement on cooperation between MTF STU and ZF Sachs Slovakia, a.s. Trnava and ZF Boge Elastmetal Slovakia, a.s. Trnava
08.11.2011	Elsevier Author Workshop for PhD students and young scientists on publishing techniques from the publisher Elsevier, with the topic: "How to prepare contributions for publishing in an international journal."
7.11. - 9.12.2011	Questionnaire on satisfaction of employees MTF STU.
10.11.2011	Meeting of the dean collegium MTF with former faculty employees.
10.11.2011	Visit of representatives of the company DELCAM Birmingham (UK) Mr. Anthony Hall and representatives of DELCAM Brno, s.r.o. the director Pavel Šimonek and Mr. Michal Jelínek, at MTF.
23.11.2011	Yearly meeting of students with faculty management.
24.11.2011	Thursday afternoon: MUDr. Ľubomír Okruhlica, CSc.- "What is addiction, actual information."
29.11.2011	Visit of the rector of Izhevsk State Technical University-ISTU prof. DSc. Boris Yakimovich
29.11.2011	New Video on MTF STU at the faculty web page
30.11.2011	Technical workshop in cooperation with Automobile cluster – western Slovakia: Top Technologies and their application in pro duction industry.



DECEMBER 2011

01.12.2011	Evaluation of Slovak universities with the rating and ranking agency ARRA – an important shift of MTF STU ten positions higher.
03.12.2011	St. Nicholas day at MTF for the children of faculty employees.
06.12.2011	Ceremonial evening for the 25th Anniversairy of the establishment MTF STU, connected with the awarding of employees for 25-years of activity at the MTF STU.
06. - 08. 12. 2011	Lecture of prof. David Arencón Osun from Spain (Centre Catalanya del Plastic Terrassa) with the topic: "Injection Moulding of Polymer Materials"
08.12.2011	Thursday afternoon: PhDr. Karol Pieta, DrSc.-"Slovak archeologists change history."
09.12.2011	Awarding of Profesor of the year to Prof. Dr. Ing. Jozef Peterka
13.12. 2011	Presentation of the company STATS GROUP at MTF STU.
14.12.2011	Colloqium on the 80th birthday of Prof. Ing. Ivan Hrivňák, DrSc.



AWARDS IN YEAR 2011

29.03.2011 - Dr. h. c., prof. Ing. Ivan Hrivňák, DrSc., emeritus professor, awarded with Grand Prize of St. Gorazda
Tens of successful pedagogues, as well as other personalities of social life, were awarded by the Minister of Education, Science, Research and Sport SR Eugen Jurzyc on the 28th of March 2011. The event took place during the Day of Teachers. Altogether 58 personalities received one of the three awards called St. Gorazd- Grand Prize, Small Prize, or Letter of Thanks. Emeritus professor of MTF STU Dr.h.c. Prof. Ing. Ivan Hrivňák, DrSc. was awarded with the highest level – Grand Prize of St. Gorazd.

03.05.2011 – Employees and students on the sport competitions "Cup of the STU Rector"
The sport competitions "Cup of the STU Rector" were organized at particular faculties of STU in Bratislava from 12 to 15. 4. 2011. Eighty-four athletes – students and employees – represented MTF STU. The basketball team of our university was led by Jaroslav Otčenáš and the basketball players won 1st place and the "Cup of the STU Rector".
The following employees represented us in the table tennis: Michal Bohunický – 3rd place, Jozef Olvecký – 4th place, Ivan Baránek – 5th place, Róbert Sobota – 7th place, Lucia Krištofiaková – 2nd place and Soňa Novotná- 6th place.

14.11.2011 - Award "3x the best"
During the 39th year of the International Conference "WELDING 2011" in Tatranská Lomnica the Slovak Welding Society awarded Prof. Ing. Milan Turňa, PhD, EWE with the Award Prof. Ing. Milanovi Turňovi, PhD, "EWE 3x THE BEST" – The best lecturer for year 2010.

06.12.2011 - Awards for 25 years of activity at the faculty
During the celebration of the 25th anniversary of establishment of MTF STU the dean awarded employees for their long-time activity at MTF STU on the evening of the celebration. The following employees were awarded:

Janáč Alexander prof.Ing. CSc.
Grgač Peter Ing. CSc.
Morvay Alfréd PaedDr.
Adamcová Anna PaedDr.
Turňa Milan prof.Ing. PhD.
Sablik Jozef prof.Ing. CSc.
Frišlovič Jozef
Sakál Peter prof.Ing. CSc.
Čaplovič Ľubomír Assoc.Prof.Ing. PhD.
Kvetan Karol RNDr. CSc.
Kalužný Ján prof.RNDr. PhD.
Kašák Peter
Lipa Zdenko prof.Ing. CSc.
Rešetová Kvetoslava PhDr. PhD.
Schwarzová Helena
Petovská Edita
Toráčová Eva
Krajčovič Pavol
Uváčková Vlasta
Prochásková Oľga
Dubovská Daniela
Burská Oľga
Dobšovič Jozef
Lisická Daniela
Knážiková Anna
Jančovič Stanislav
Sučáková Alena
Taraba Bohumil Assoc.Prof.Ing. CSc.
Kulošťák Ján
Naď Milan Assoc.Prof.Ing. CSc.
Mironovová Emília PhDr.
Božek Pavol Assoc.Prof.Ing. CSc.
Vaský Jozef Assoc.Prof.Ing. CSc.
Mikulková Eva
Važan Pavel Assoc.Prof.Ing. PhD.
Tibenská Zuzana Mgr.
Štibraná Katarína Ing.
Šalgovičová Jarmila Assoc.Prof.Ing. CSc.
Tóthová Mária RNDr. PhD.
Bílik Jozef Assoc.Prof.Ing. PhD.
Behúlová Mária Assoc.Prof.RNDr. CSc.
Vaculíková Ľudmila RNDr.
Merica Marián Assoc.Prof.PaedDr. PhD.
Vaňová Jaromíra Ing. PhD.

9.12.2011 – Professor of year at STU – Prof. Dr. Ing. Jozef Peterka

14.12.2011 – The memorial coin of Aurel Stodfola- Dr.h.c. Prof. Ing. Ivan Hrivňák, DrSc.

On 19. 1. 2012 during the New-year meeting, the dean Prof. Dr. Ing. Oliver Moravčík awarded the following categories (year 2011):

The best dissertation thesis

Dr. Rastislav Beňo: Proposal for procedure of ergonomics application in company logistics

Dr. Jozef Fiala: Optimalization and utilization of small hydroenergetic power source Setur combined with a solar techniqu

Dr. Michal Kopček: Optimization of the power system processes for primary and secondary voltage control

The best habilitation thesis

Dagmar Cagáňová, Assoc. Prof., PhD.: Selected aspects of multicultural issues in industrial enterprises in the Slovak republic.

The best project team

The best project team belongs to the Institute of Safety and Environmental Engineering and was selected for the continuous work on revitalisation of former botanic garden into arboretum, for their enthusiasm and workload.
Members of the best project team are:

1. Ing. Gerulová Kristína, PhD.
2. RNDr. Maroš Sirotiak, PhD.
3. Ing. Blinová Lenka PhD.
4. Ing. Harangozó Jozef, PhD.
5. prof. Ing. Balog Karol, PhD.
6. Pavel Macejka

The best publication

On the basis of publication activity and employee evaluation in the previous year the dean awards the team of authors
Hodúlová, Erika - Palcut, Marián - Lechovič, Emil - Šimeková, Beáta - Ulrich, Koloman:
Kinetics of intermetallic phase formation at the interface of Sn-Ag-Cu-X (X = Bi, In) solders with Cu substrate. In: Journal of Alloys and Compounds. - ISSN 0925-8388. - Vol. 509, Iss. 25 (2011), s. 7052-7059.

The best contract research

The first time the dean of the faculty also awards contract research by means of the award for cooperation with industry. At the same time active colleagues are rewarded for their contribution to fullfilment of one of the faculty aims, multisource financing of MTF STU activities from grants, state support as well as from cooperation with industry.
Awarded colleagues are: doc. Ľubomír Čaplovič, doc. Marián Hazlinger

Alumni

On 19.3.2011 the civil association Bank of Quality – Alumni MTF STU was established. This association creates space and conditions for faculty communication with former graduates.

Successful faculty graduates

This page proves that our graduates are successful in all spheres of life.
These are also our graduates:

Ing. Ivan Golian, CSc., director of ITN department (Department of Information Systems and Nets) of the company Orange Slovensko, deputy of chief executive officer and member of board of directors

Ing. Ivan Golian, CSc. Graduated at the Slovak University of Technology in Bratislava. In the years 1993 - 1995 he worked at the Department of Electronics and Automation KIHO in Belgian Gente. Till the year 1995 he worked at the Department of Informatics and Automation of MTF STU, where he defended the title CSc. in the year 1993. In 1995 he started to work in the Czech-Slovak Business IT Company Digital Equipment Corporation as a project manager. In the year 1997 he started to work for Globtel (later rebranded as Orange), where he was the boss for Information Technologies and in the year 2005 he became the deputy of chief executive officer. In the years 2006 - 2008 he was a member of the board of directors and director for IT and operation of VÚB bank. In January 2009 he came back to Orange where he is still director of IT and net department, deputy of chief executive officer and a member of the board of directors.

Ing. Ľuboš Lopatka,PhD., chief executive officer of the Social Insurance Company

Ing. Ľuboš Lopatka PhD., studied at the Slovak University of Technology in Bratislava. At MTF STU he later defended the PhD title. After studying he started to work for Pozemné stavby in Trnava. In the year 1991 he became the secretary of the Minister for managing and privatization of property and later the director of Slovak cartography. In the years 1993-1998 he worked as a director of the company Kone Lifts in Bratislava. The next years he worked in paper concerns in Slovakia, Poland and the Czech Republic, firstly as a chief executive officer of paper company Kappa from 1998 to2006, then in the company Myllykoski, and from the year 2007 as a regional director for the Middle and Eastern Europe Metsä Tissue. In the years 1993 to 2001 he had the position of chairman of supervisory board in Váhostav Žilina. He worked as a vice-president of the Association of cellulose-paper industry. In the year 1999 to 2006 it was the function of president of the Association of Industrial Ecology in Slovakia. Ľuboš Lopatka has worked as a chief executive officer of the Slovak insurance company.

Doc. Ing. František Horňák, PhD., vice-rector of the Slovak University of Technology in Bratislava

Doc. Ing. František Horňák, PhD. – he finished the master degree at the Faculty of Machining and Technology SVŠT (later renamed as MTF STU) in the study field Economics and Regulation of Machining Production and he accomplished the PhD study at MTF STU. He has worked as a university pedagogue at STU in Bratislava since 1994. From the year 2000 he worked at the Department of Management and Quality at MTF STU as the department secretary and in the years 2006 – 2011 he was a vice-dean of the Faculty of Materials Science and Technology for the II. and III. degrees of education. Innovative management and management creativity are the main focus of research and education activity. Since 1995 he has been working as a lector and supervisor in many advisory-education institutes in Slovakia and abroad. He is a member of the supervisors' group for the area of innovative management and creativity- Academy of Creativity Vienna. He participated on more projects orientated on the area of management of people, management communication, couching, enterprise culture, forming and team managing, evaluation of employees, innovative management and creativity, project management, assesment centres and others. He is a member of Regional Council for Specific Education and preparation of the Trnava regional government.

Dr. Ing. Daniel Križan

Daniel Križan - a graduate of master's study at MTF STU in year 2000. He received the PhD title in the study field of Material Engineering with specialization in development of high-strength steels for the automobile industry at the university in Gent (Belgium) in 2005.
He owns the award of the Canadian Metallurgical Company (2003, Vancouver). During study he became the first non-Belgian supervisor at the university in Gent, where he was the head of the department of Vacuum Metallurgy and Casting.
In December 2009 he developed a new type of TRIP steel (he own two European patents). He is the author of 20 scientific publications presented at international research conferences, especially in the USA and Canada and is published in foreigner scientific journals.
Today he works in the Austrian Steelwork Voestalpine Stahl in Linz as a main coordinator of research and development of high-strength steels for the car industry. The steels contain residual austenite. .

Ing Vladislav Polák, CSc., Director for Sales and Purchasing Calmit Slovakia, s.r.o.

Ing. Vladislav Polák, CSc. Is a graduate of the Faculty of Machining, Slovak University of Technology. At MTF STU he obtained the title CSc. in the study field of Magnetic Materials on the base of SmCo5 and NdBFe. He worked as: a manager for a subsidiary of Volksbank, a.s., a director of Retail Banking ING Bank, a.s., a director of marketing Chemolak, a.s. Today he is a director for sales and purchasing for Calmit Slovakia, s.r.o. He also gained the following certificates:
Professional Certificate in the area of managament at Open Business School, Milton Keynes, Great Britain
Professional Certificate in the area of Strategic Management Sunderland University, Sunderland, Great Britain
Certificate in Marketing and Banking, AOTS, Tokyo,Japan
Certificate in Managing of Finances EXIM Bank, Washington, USA
He is also a chairman of the academic senate CUB Bratislava (Open University Milton Keynes) and supervisor and lecturer in the study field of marketing and management. He speaks English, Russian, German and Spanish.

Ing. Patrik Lukáč, MEng., Head of Quality Management ZF Sachs Slovakia a.s.

Ing. Patrik Lukáč, MEng., is a graduate of the Slovak University of Technology in Bratislava, MTF in Trnava, with the study field: Non-conventional machining metalurgy. After graduation he worked at the Faculty of Machining in Bratislava as a development and research professional. He accomplished the study of Industrial Engineering and Logistics at Hochschule Ulm, Technology, Informatics and Media in the years 2006 – 2007, he gained the title Master of Engineering – MEng. –. Today he works as a manager of quality in the company ZF Sachs Slovakia a.s., which belongs to the concern ZF Friedrichshafen AG, Germany.

Ing.Peter Stanko,
co-owner of the most successful wine production company in Slovakia - VÍNO MRVA & STANKO, a.s.

Ing. Roman Nagy, PhD., Development specialist for software architecture and software development, BMW, Munich, Germany

Ing. Roman Nagy, PhD. After study at MTF in Trnava, The Department of Applied Informatics and Automation in Industry, he worked as a software developer and architect at more positions in Slovakia. In the year2001 he started to work for the company microTOOL GmbH (Berlin, Germany), where he managed the team developing a tool for modeling and model-oriented development of software. The area of model-oriented testing of software was his dissertation topic (2004). Since 2008 he has worked in the division Research and Development of Car Concern BMW AG (Munich, Germany). He participates in the development of software for new models of cars and he is responsible for testing and creation of concepts of software testing for electronic regulation units. Roman Nagy is the author of more publications with the topic of model-orientated development and software testing. Besides publication activity he also works as a special lecturer at universities in Germany as well as in Slovakia.

Ing. Ján Kolišťanik, design engineer of the company STATS GROUP, Aberdeen, Scotland

Ing. Ján Kolišťanik is a graduate of the Slovak Univresity of Technology in Bratislava, MTF in Trnava, with the study field: Technology of Machining Production with specialization in computer aided production and design, accomplished successfully in 2006. After graduation he left to Scotland looking for a job related to his specialization, but he left to work for British Telecom. After the nine months he was successful and found the job where he works till today.

Note.: *Data and pictures were published with approval of those shown.*

INSTITUTE
OF MATERIALS SCIENCE

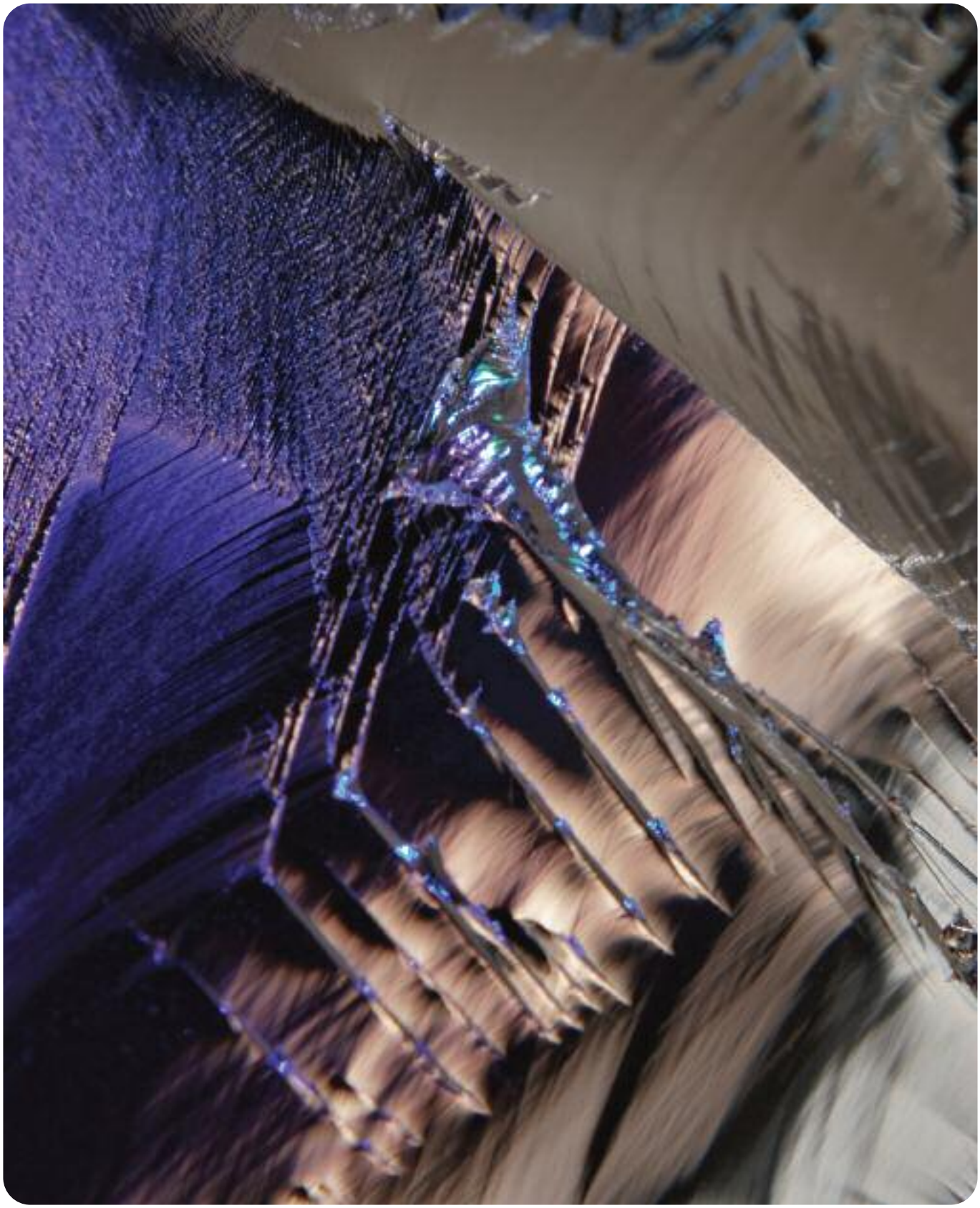


Photo by Milan Maroněk

INSTITUTE OF MATERIALS SCIENCE

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Institute Departments

- Department of Materials Engineering
- Department of Physics

Staff

- Professors: 6
- Assoc. Professors: 11
- Senior Lecturers: 15
- Research Fellows: 8
- PhD Students: 36

Activities at the Institute

Date	Title of event, activity characterising the life at the Institute in 2011
27.1.2011	"The rise of grapheme" RNDr. Andrej Antušek, PhD.
17.2.2011	"Relativistic effects in atomic and molecular properties throughout the Periodic Table of elements", Prof. RNDr. Miroslav Urban, CSc.
24.3.2011	"Quantum-chemical calculations of NMR and EPR parameters: From first principles to material research" RNDr. Vladimír Malkin, DrSc.
19.5.2011	"Modelling of diffusion-based phase and structure formation mechanisms during synthesis of advanced materials: SHS, Mechanical Alloying, VLSI technology" Boris B. Khina (Physical-Technical Institute National Academy of Sciences of Belarus Minsk, Belarus)
16.6.2011	"Non-chargeable plastics" Doc. Ing, Antonin Náplava, CSc.

22.9.2011 "Correlations between structure and magnetic properties of nanocrystalline and amorphous alloys based on Fe and Co" RNDr. Vladimir Kolesar, PhD.
20.10.2011 "Molecular dynamics in amorphous systems", RNDr. Peter Perichta, CSc.
1.12.2011 "Self-lubricating Thin Films for Tool Steels" Prof. Ing. Peter Jurči, PhD.
14.12.2011 Colloquium of Professor Hrivňák

EDUCATION AT THE INSTITUTE

STUDY PROGRAMMES

- Materials Engineering
- Processing and Application of Non-Metals

Number of the students (till 30.10. 2011) on the study programmes guaranteed by the institute: 229
Number of the graduates (2010/2011) on the study programmes guaranteed by the institute: 59

GRADUATE PROFILE

BACHELOR PROGRAMMES (Bc.)

Materials Engineering
The graduate
- will gain complete bachelor's degree education in the field of Materials focused on main kinds of technical materials,
- will understand production, testing, technological processing, selection, exploitation and degradation of properties of main kinds of technical materials,
- will have knowledge of notions, principles and theory regarding technical materials, production technology, processing technology, application and recycling of materials, as well as fundamentals of electrical engineering, construction, informatics and management of industrial company,
- will be able to specify mechanical properties of materials and work with equipment used in mechanical and defectoscopic tests of materials, evaluate the structure of materials by standard procedures with the use of corresponding equipment machinery,
- will be conscious of social, moral, legal and economic impact of his profession,
- will be prepared either for the master´s degree study in the field of Materials and related study fields and after graduating also in doctoral degree study, or for entering the job market immediately,
- will successfully operate in industrial companies in the field of technical materials, their technological processing to semi-products and products, as well as in the field of control of their quality, purchasing and selling materials, service and maintenance.

MASTER PROGRAMMES (MSc./ ENG.)

Materials Engineering
The graduate
- will gain complete master´s degree education in the field of Materials focused on technical materials,
- will understand development and production of technical materials, their technological processing to semi-products and products, as well as control of their quality and operating diagnostics, connections within chemical composition, structure and technically important properties of materials,
- will have knowledge of production, processing, quality control, application and recycling of materials, methods, techniques and means of property analysis, selection and implementation of materials,
- will be able to specify and propose extensive material solutions in different technical fields, apply a wide spectrum of experimental methods of structure study and properties of materials in solving tasks in engineering practice, analyse and understand technological and other processes in terms of their impact on structure and properties of materials, gauge the influence of production and processing technologies on the working environment and in the case of a need to recommend alternative solutions,
- will be conscious of social, moral, legal and economic impacts of his profession,
- will be prepared either to continue his study in post-graduate degree, gain scientific perspective in a whole scale of fields of materials engineering, or to enter the job market immediately,

will successfully perform as a team leader or team member in the field of materials engineering (research, development, production or implementation), individually as a project leader, an entrepreneur or a manager in industrial production.

Processing and application of non-metals
The graduate gains university education in the study field of Materials with specialisation in non-metallic materials. He understands the production, technical treatment, testing, exploitation and degradation of non-metallic materials such as plastic, ceramics, glass, rubber and some special kinds of materials, the correlations between structure and properties of the mentioned materials, as well as control of their quality and processes of diagnosis. The graduate has knowledge from production, treatment, quality control, application, recycling and secondary treatment of the mentioned materials, methods, technologies and appliances of properties analysis, selection and application of non-metallic materials. The

graduates can work as a manager or team member (research, development, production or application of non-metallic materials), independently as a project manager, a manager of own company or a manager in industrial production with this specialisation.

POSTGRADUATE PROGRAMMES (PhD)

Materials Engineering

The graduate

- will master the rules of scientific work in the field of Materials,
- will be prepared to discover and bring his own new solutions of problems,
- will learn to formulate problems scientifically and present his own results,
- will be able to gauge legal and environmental aspects, ethical and social aspects of scientific work,
- will gain doctoral degree education in the field of Materials,
- is familiar with scientific methods of research and development as well as processes leading to his own solving problems in the field of technical materials,
- will master the rules of individual and team scientific work, scientific formulation of problems, ethical and social aspects of scientific work, the rules of presentation of research results,
- will understand the relations of research – development – production – implementation – recycling, aspects of research and development of new materials, legal and environmental aspects of new products,
- will be conscious of social, moral, legal and economic impacts of his profession,
- will be prepared to gain scientific perspective in a large scale of material research fields, for a creative development and widening knowledge in the field, or to enter the job market immediately,

will successfully perform as a researcher in research institutes, at universities or a highly-qualified specialist in big industrial companies focused on production of materials or technological processing of materials to semi-products and products.

Processing and application of non-metals

The graduate knows the principles of scientific individual and team work as well as the procedures leading to individual problem solving in the field of non-metallic materials. The graduate is ready to discover and bring new independent solutions of problems, scientifically formulate the problem and present his/her own results and will be able to assess the legal and environmental aspects, and ethical and social aspects of scientific work. The graduate understands the connections between research – development – production – use – recycling, aspects of research and development of new materials (especially based on glass, plastics and ceramics). He may work as a scientific/research worker in research institutes, at universities or in large industrial enterprises aimed to the production of materials or technological processing of materials into semi-finished products and products.

LIST OF SUBJECTS GUARANTEED WITH THE INSTITUTE

Advanced materials and technologies
Advanced non-metallic materials
Bachelor project
Bachelor thesis
Degradation processes and prediction of lifetime
Diploma project
Diploma thesis
Dissertation project
Economics of non-metallic materials production
Electrotechnics and electronics
Experimental methods of materials investigation
Heat treatment of materials
Chemical heat treatment
Materials science
Materials for energy industry
Mechanical testing and defectoscopy of materials
Methods for analysis of structure and properties of materials
Methods of materials investigation
Metrology and testing of plastics
Modelling of phase equilibria
Nanomaterials and nanotechnologies
Non-metallic materials
Optimization methods in materials science
Pedagogical activity
Physico-chemical fundamentals of processing of non-metallic materials
Physics
Physics of materials
Practise
Processing technologies of non-metallic materials
Research work
Semester project
Structure and properties of non-metallic materials
Technology of materials production

Theory of materials processing
Theory of materials production
Theory and technology of plastics processing
Theory of phase transformations
Thermal and spectral methods of materials characterization
Utility properties and materials design
Vacuum engineering and technology

GRADUATE THESES

BACHELOR THESES

Adamech, Marek:	Comparability of micro-hardness determined for different loading force and material hardness
Dendis, Miroslav:	Metallographic analysis of steel for condensate steam traps in heat exchanger
Ďuriška, Libor:	Metallographic analysis and preparation of thermodynamic database for complex metallic alloys of Al-Pd-Co system
Farkaš, Ladislav:	Influence of diffuse boronizing on steel K110
Gajar, Jozef:	Microstructure analysis of advanced wear resistant steels
Haršáni, Marián:	Analysis of tool steels of ledeburitic type
Jančeková, Pavlína:	Microscopic analysis of laser surface remelted K390 Microclean steel
Karas, Richard:	Study of inter-diffusion in systems Fe-Ni and Fe-Co
Kašička, Stanislav:	Modelling phase equilibria and metallographic analysis of steel Böhler K110,
Kocian, Miroslav:	The material aspects of the hot cracking of welded joints of austenitic steels
Koyš, Ján:	Designation of transit temperatures for steel 50CrMo4-reformed state
Krajčovičová, Katarína:	Study of topography using confocal laser scanning microscope
Kuruc, Ladislav:	Non-destructive testing of materials by means of ultrasound
Lovaš, Martin:	Examination of electrical parameter frequency dependence in selected types of special glasses
Macháč, Denis:	Application of plastics in personal cars
Malá, Tímea:	Metallographic preparation of master alloy for preparation of nanostructural composites on the base of Al
Michalcová, Eva:	Crack reason analysis of cover plate of clutch disk
Mrva, Marek:	Microscopic analysis of the rapidly solidified powder based on nickel
Pánik, Miroslav:	Microscopic analysis of the rapidly solidified powder based on iron
Ptačinová, Jana:	The analysis of selected types of structural carbon steel treated by nitrocarburising process
Salaj, Matej:	Application abilities of laser scanning confocal microscope Zeiss LSM 700
Slatkovský, Ivan:	A kinetic study of Mo Si interfacial reactions

MASTERS THESES

Balciar, Lukáš:	Quantitative analysis of the structure and properties of volume-forming material
Bľanda, Marek:	Instrumented indentation of structural ceramics
Bohus, Otto:	Diagnosis of coatings systems for steel construction
Cebro, Tomáš:	Analysis of vulcanization of selected rubber mixtures by the linear heating, with the measurement of direct current conductivity
Čehlárik, Martin:	Structure and properties of boride layers on the tool steels K 190 and 390
Čechvalová, Soňa:	The analysis of the influence of degradation processes on the lifetime of aqueous biological protection
Ferenczi, Csaba:	Influence of the thermal treatment parameters on the mechanical properties and the microstructure evolution of AISI 440B martensitic stainless steel
Filipeje, Jozef:	Electric and dielectric properties of ethylenevinylacetate copolymer
Gábor, András:	Effect of heat treatment and testing temperature on impact energy of steel type S235 JR
Gajdoš, Filip:	Welding of plastics by combination of vibration and infra-red method
Hlohovský, Matej:	Type of material identification and functional groups selected non-metallic materials
Holub, Marian:	Microstructure and fractographic analysis of the various kind of graphite cast-iron
Hrašnová, Adriana:	Rotational moulding filled polyethylene
Hromada, Michal:	Effect of precipitation on the pitting corrosion of high nitrogen austenitic stainless steel P560
Jadrný, Róbert:	Cause analysis of the damage of pump hub
Janík, Michal:	Isothermal annealing influence on microstructure of steel AISI 316
Juhász, Zoltán:	Thermodynamic database formation for phase equilibrium calculation in Ag-Ce-Sn system
Jurov, Peter:	Comparison of traditional and CAE approach of injection mould design for thermoplastic materials
Kocsisová, Edina:	Study of precipitation in austenitic stainless steels in selected temperature exposures
Kollárová, Monika:	Metallographic analysis of carbonitridated samples of steels
Krajčík, František:	Analysis and comparison of methods for determining the density of
Kubík, Michal:	Chrome and Vanadium affection to boridated layers of instruments steel
Machovič, Peter:	Application ultrasonic methods for inspection of base material and welds steam generator collector
Maráková, Danka:	Formation of intermetallic phases at the interface of the copper substrate - lead-free solder
Maška, Martin:	Dielectric properties of selected chalcogenide glasses
Mrvová, Alžbeta:	Boronizing of ledeburitic type tool steels
Mrvová, Katarína:	Morphology of fillers and properties of thermoplastic composites
Rumanský, Matej:	Rheological analysis of selected types of polymeric materials
Seliga, Emil:	Rheological analysis of selected technological operations processing rubber compounds
Siman, Radoslav:	Effect of diffusion on the property boriding of steel Ch3F12
Šalgó, Kristián:	Pitting corrosion behaviour of high nitrogen austenitic stainless steel
Šimalčík, Ľubomír:	Analysis of damaged brass tubes from the main condensers of nuclear power plants
Šimonovič, Andrej:	Analysis of laser remelted surface of K390 Microclean tool steel

Švec, Erik: Alternative material of coupling conductor in construction of the high pressure sodium lamp
Tóth, Miroslav: Structure analysis of complex materials on aluminosilica basis
Židek, Radovan: Thermal properties of lead-free soft solders

PHD THESES

Adamčíková, Andrea: Aluminium foam prepared by direct foaming from melt
Bakajová, Jana: Precipitation behavior of Cr-Mn-N austenitic stainless steel
Čavojský, Miroslav: High-strength aluminium alloys prepared by rapid solidification of the melt
Szmolka, Tibor: Study of fracture processes in selected type of materials

HABILITATION THESES

Lofaj, František: Creep mechanisms in the high-performance silicon nitride ceramics

RESEARCH AT THE INSTITUTE

Area of research

- advanced complex metallic alloys and other structurally complex materials
- alloy steels for energy industries
- lead-free solders
- materials with non-crystalline structures
- computational chemistry in materials science
- thermodynamic modelling of phase equilibria and materials processes
- coatings and surface treatment

Research characteristics

The research activities of the Institute of Materials Science are aimed at crystallization and heat treatment of metals and alloys, tool materials, powder metallurgy, stainless steels, steels for power plants, weldability of steels, lead-free solders, wear-resistant coatings, complex metallic alloys, processing of polymers and properties of special glasses. At present the Institute possesses three internal laboratories (Laboratory of Structural Analysis, Laboratory of Heat Treatment and Mechanical Testing, Laboratory of Physical-Chemical Measurements and Processes) and three laboratories with external partners (Laboratory of Thermophysical Measurements and Calculations, Laboratory of Soldering, Laboratory for Development and Research of Advanced Metallic Materials and Composites). During last years, many modern devices were obtained in frame of the Center for development and application of advanced diagnostic methods in processing of metallic and non-metallic materials, e.g. high-resolution scanning electron microscope JEOL 7600F equipped by EDS, WDS and EBSD detectors, confocal laser scanning microscope ZEISS LSM 700, universal testing machine for evaluation of mechanical properties of materials LabTest 4.250SP1-WM, Charpy impact tester CHK300J-I, simultaneous thermal analyzer NETZSCH 409 CD, high-temperature dilatometer NETZSCH 402 C, laser flash analyzer NETZSCH LFA 427, temperature stimulated depolarization current equipment CONCEPT 90 with Quatro Cryosystem, spectral analyzer Solartron 1260, rotation viscosimeter Gemini II and vulcanization measurement equipment D-MDR 3000. Also new software related to modeling of properties of materials subjected to thermal and mechanical treatment greatly enhanced the computational facilities of optimizing the processing parameters (Sysweld, DEFORM, JmatPro).
In areas of research and education the Institute has established intensive cooperation with local and foreign institutes, as Leibniz Institute of Solid State and Materials Research in Dresden (Germany), Institute Jožef Stefan, Ljubljana (Slovenia), Vienna University of Technology (Austria), Research Center Dresden-Rossendorf (Germany), Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Brno (Czech Republic), Faculty of Mechanical Engineering, University of Ljubljana (Slovenia) and other Slovak universities and institutes of the Slovak Academy of Sciences. From the list of industrial partners the most recognized are Bekaert SA (Belgium), Böhler – Edelstahl, Branson div. Emerson, and Benteler (Germany).
The Institute has a long term tradition of cooperation with regional industrial partners as INA Skalica, Ltd., Skalica, VUJE corp., Jaslovské Bohunice, ZF Sachs Slovakia, corp., Trnava, Zlievareň, corp., Trnava, HKS Forge Ltd. Trnava; MANZ, corp. Nové Mesto nad Váhom; SONY Slovakia, Nitra; Samsung Electronics Slovakia, Galanta, Voderady; Faurecia Trnava; PSA Peugeot Citroen, Trnava; Noble International, Ltd. Senica; TRW Steering System Slovakia Ltd., Nové Mesto nad Váhom; Hella Lighting Slovakia, Kočovce; Kinex-KLF, corp., Kysucké Nové Mesto; PSL, corp. Považská Bystrica; EMO, corp. Mochovce; Johns Manville, corp. Trnava; Sauer Danfoss, corp., Považská Bystrica; ŽOS corp., Trnava; PFS, corp., Brezová pod Bradlom; Kompozitum Topoľčany; Fremach, Trnava; Slovalco, corp. Žiar nad Hronom; IMS Kupa, corp. Nováky.

Areas of expertises:

- Material Degradation, Accidents
- Laboratory Technology for Material Diagnostics
- Space Phenomena
- Progressive Materials
- Topic of fusion and fusion reactors
- Unleaded solders
- Materials for Energetics

PROJECTS OF THE INSTITUTE

PROJECT OF TECHNOLOGY TRANSFER

Title of the project	CENTRE OF EXCELLENCE Center for Development and Application of Advanced Diagnostic Methods in Processing of Metallic and Non-metallic Materials
Type of the project	OPVaV
Number of the project	ITMS 26220120013, ITMS 26220120048
Main investigator	Jozef Janovec, Professor, DrSc., Ľubomír Čaplovič, Assoc. Professor, PhD.
Time period of the project	2009-2011, 2010-2011

Annotation of the project The main focus of the project is the establishment of a centre of excellence with emphasis on the development and application of advanced diagnostic methods in processing the metal and non-metal material. This is within the framework of item number 2.1 of the operation program oriented on research and development entitled "Increasing the quality of the workplace and support of excellent research, with a focus on the strategic areas important for next developments of economy and society". Therefore the main aim of the project, which has been approved, is to build a research infrastructure in accordance with the Innovation policy of the second generation, meaning at the regional level and in accordance with priority No1 of the Innovation strategy of the Slovak Republic: "Infrastructure with a high quality and an effective system for innovation development". In this way the proposed centre of excellence will support realization of the strategy of competitiveness in the Slovak Republic into 2010, which is an important transfer into innovation policy of the third generation, with the task of integrating innovations into all policies.

We plan to create a modern dynamic centre of excellence. The centre will focus on analytical methods for applying the most contemporary knowledge on the interaction of electron and laser energies with masses of various types. It will also focus on advanced detection systems with high sensitivity, modern mechanical processes, and observation of electrical and non-electrical variables oriented to the evaluation of specific properties, especially progressive metal and non-metal materials prepared by the most modern technological processes. We expect that the project will help to improve the research infrastructure in the Trnava region, and provide a direct connection to the rest of Slovakia (the Faculty of Materials Science and Technology cooperates with dozens of production companies throughout all of Slovakia and with other education and research institutes). The project will also connect the Faculty to other European and Asian research bodies (we cooperate with POSTECH - Pohang University of Science and Technology, South Korea, IFW and FZD in Dresden, Germany, Bekaert in Zwevegem, Belgium). Finally, the project will improve the quality of education and popularise science and technology among unspecialized people.

The content of the project has the aim of supporting a concentration of the best faculty employees in a monothematic centre based on the application of the most modern experimental processes associated with specific material properties, consistent with the objectives of the Materials study program and the study field of Physical Metallurgy. Activities are focused on the attraction of secondary school students who will potentially study fields of technical materials. The project will also provide access for all interested specialists to modern technical equipment in the centre, as well as the organisation of seminars and summer schools and expansion of materials research and its successful representation in the media.

INTERNATIONAL PROJECTS

Title of the project	Chemical sputtering: Computational modelling of interactions in the carbon containing films exposed to molecular ions and hydrogen
Type of the project	7th Framework Programme of the European Atomic Energy Community
Number of the project	EFDA, No.FU07-CT-2006-00441
Main investigator	Štefan Matejčík, Professor, DrSc., Faculty of matematics, physics and informatics, Comenius University in Bratislava,
Investigator at MTF STU	Miroslav Urban, Professor, DrSc.
Time period of the project	2010-2011

Annotation of the project The project aim is to know processes via methods of computer modelling which can be by interaction of products of low-temperature plasma with walls of a reactor by nuclear fusion (plasma – wall interactions). There is the most frequent expectation in construction of fusion reactor walls (particularly in a divertor) that a construction material will be wolfram covered with layer of amorphous hydrocarbon films (a–C:H). One of the project aims is to study the stability and the reactivity of various ions which can occur during interaction of plasma particles with divertor walls, also their capture and release into an area of the reactor. Layers of poisonous BeO are alternative materials which are considered in processes of plasma products interaction. We take into account in our project also other alternatives, e.g. based on compositions of BxCyNz, - the content determines if they can create firm layers with properties which are necessary in the material to provide an interaction of the plasma components with reactor walls.

The research team at MTF STU focuses on modelling of the hydrogen interactions with selected BxCyNz thin films. Data are compared with results on the H-interactions with graphene. Methodological development was focused to the treatment of the core correlation and relativistic effects in molecules containing d-shell atoms. Results are being applied to calculations of benchmark data relevant in plasma – wall interactions, namely BexWy species. We were also involved in the development of ab initio techniques for accurate calculations of ionization potentials and electron affinities which are needed in modelling the survival probabilities and recombination energies of the ion in question.

Title of the project Investigation of fine structures in metallic materials using TEM
Type of the project bilateral
Number of the project 1/IFW-MTF/2009
Main Investigator Jozef Janovec, Professor, DrSc.
Time period of the project 2008-2011
Annotation of the project The scientific cooperation concerns mostly structurally complex materials and thermodynamic calculations. Experts of both partners are encouraged to attend each other. The dominant technique used in the common investigation is TEM. With the intention to improve the investigation of fine metallic structures at the Faculty of Materials Science and Technology of STU, the IFW provided financial resources for purchase of ancillary units for TEM.

Title of the project Preparation and characterisation of lead-free solders
Type of the project COST
Number of the project COST MP0602
Main investigator Jozef Janovec, Professor, DrSc.
Time period of the project 2008-2011
Annotation of the project The project is focused on processing and investigation of properties of novel lead-free solders for high-temperature applications. New solders developed in the frame of the project will consist of various combinations of tin, zinc, cobalt, silver, copper and rare earth elements. Thermodynamic and kinetic aspects of soldering will be studied. Phase equilibria and formation of intermetallic phases at the solder/substrate interface will also be investigated.

NATIONAL PROJECTS

Title of the project Properties of lead-free solders and their liquid-state and solid-state interfacial reactions with substrates
Type of the project VEGA
Number of the project 1/1000/09
Main investigator Milan Ožvold, Professor, PhD.
Time period of the project 2009-2011
Annotation of the project Rare earths are added to improve properties of lead-free solders on base of Sn/Cu/Ag. We added cerium in small amounts (0.1, 0.2 and 0.5 wt%) into eutectic compounds of solders and we compared their properties. Observations showed differences in solders microstructure in dependence on content of Ce. We have studied morphology intermetallics which are formed on the range of fluid solid and copper plate in dependence on time of soldering. The most significant changes were observed for solders SnAg3,5 and SnAg3,5 + 0,5% Ce, by time of soldering 256 seconds. Layer of intermetallics was destroyed in solder with Ce and particular units of the phase Cu6Sn5 did not grow to big shapes and dimensions. Mechanical properties of solders were also measured. Shear strength of solder with eutectic solder SAC357 is significantly higher than one with hypoeutectic solder with low content of silver SACX0307. However relative decline of shear strength of SACX0307 is minimal after ageing 200 hours at temperature of 150°C, while it is significant by eutectic solders.

Title of the project Accurate ab-initio calculation of the potential energy hypersurface of ozone for the theoretical molecular spectroscopy
Type of the project VEGA
Number of the project 1/0648/10
Main investigator Filip Holka, PhD.
Time period of project 2010-2011
Annotation of project The project is focused on ab-initio calculation of global potential energetic hypersurface of basic electronic state of ozone with a sufficient accuracy for next application in theoretical rotation-vibration spectroscopy. To gain this aim we will study into details the convergence of the hypersurface to a limit of complete base, relativistic effects and contribution of internal electrons correlation. One important part of project is the calculation of adiabatic correction and analysis of its influence on a shape of hypersurface. According to this analysis we will design an optimal methodological access which is appropriate for a construction of global energetic hypersurface and we will make a calculation.

Title of the project Characterization of structurally complex materials to improve their application possibilities
Type of the project VEGA
Number of the project 1/0011/10
Main investigator Jozef Janovec, Professor, DrSc.
Time period of the project 2010-2011
Annotation of the project The project is focused on research of complex metal alloys and nanostructure of materials. Alloys of type Al-Mn-TM and Al-Pd-TM in annealed state (TM = transition metal) and Al-CMA composities (CMA = complex metal alloy) are characterised with x-ray diffraction, TEM (HRTEM), DTA, HR SEM, EDX, WDX and EBSD, as well as thermodynamic modelling. Experiments results and theoretical knowledge will help to calculate basic thermodynamic parameters of studied systems and identified phases. Application of progressive experimental methods creates prepositions for innovations in methodology area. Solving of the project will enlarge basic research knowledge with possible transfer into praxis.

Title of the project Analysis of irreversible changes in condensed non-crystalline structures.
Type of the project VEGA
Number of the project 1/0645/10
Main investigator Stanislav Minárik, Assoc. Professor, PhD.
Time period of the project 2010-2011
Annotation of the project The project is focused on a study of causes of permanent (irreversible) changes in selected condensed non-crystallic structures. The main attention will be on processes of polymerisation and photodegradation of plastics, vulcanization of rubber compound as well as irreversible changes in glass structure. Structure modifications are usually typical by creation of free spaces, new parts and phases which can be observed by different way. In case of the mentioned non-crystallic substances the structure modifications cannot be reflected in a visible destroying of structure symmetry. Methods of their identification and evaluation are therefore more complicated than crystallic substances. We will study the examination possibilities of process character via different experimental methods based on IR and UV-VIS spectroscopy, dielectric spectroscopy and thermal analysis. The project aim is a search of correlation possibilities between results of mentioned methods and design of models for description of irreversible processes in non-crystallic structures.

Title of the project Accurate calculations and predictions of properties of increasingly complex molecules.
Type of the project VEGA
Number of the project 1/0520/10
Main investigator Miroslav Urban, Professor, DrSc.
Time period of the project 2010-2011
Annotation of the project The essence of the project is extending the predictive power of Coupled Cluster CCSD(T) calculations of closed-shell and open-shell molecules, applications of CC methods to gradually larger molecules and to provide benchmark data for less demanding but less accurate DFT methods. Enhanced effectiveness of the CCSD(T) method is achieved by new implementation of the idea of reduced virtual orbital space by the OVOS method (Optimized Virtual Orbital Space). We will analyze relativistic effects in the metal – lone-pair ligands for the series of molecules and trends in these interactions. Our model will serve for understanding the processes involved in formation of Self-Assembled Monolayers, suggestions of new materials, as well as in some biologically relevant processes. We also work on calculations of magnetic properties of atoms and molecules including relativistic effects. We work on calculations of dipole moments and polarity of molecules in the ground and excited states having in mind new optoelectronic materials. Accurate calculations of electron affinities of nuclear acid bases are linked with understanding the damage of DNA by low energy electrons.

Title of the project Effects of inhomogeneities on functional properties of high-temperature superconducting wires
Type of the project VEGA
Number of the project 1/0162/11
Main investigator M. Skarba, PhD.
Time period of the project 2011-2014
Annotation of the project Non-metallic superconductors based on mixture of Y, Ba and Cu oxides (YBCO) are well known materials showing superconductive properties at relatively high temperatures. Structural analysis of micrometer superconductive layers on metallic substrate enables to understand the
relationship between the parameters of preparation of layer and its properties. During deposition of layer on metallic substrate and during further processing, defects in structure of thin layers of YBCO develop. These defects significantly affect electromagnetic properties of superconductors, especially critical current and ac losses. Information about defects in layers of YBCO, inferred from structural analysis, are useful for decrease imperfections of production of superconductive layers. It is also necessary for development of superconductive devices, because they can have significant
influence on their working characteristics. Evaluation of structure of thin superconductive layers will be performed mainly with (high-resolution) TEM.

Title of the project Study of phase equilibria in advanced materials using aimed experiments and computational thermodynamics.
Type of the project VEGA
Number of the project 1/0339/11
Main investigator Roman Čička, PhD.
Time period of the project 2011-2013
Annotation of the project The aim of the project is to contribute to thermodynamic description, creation and assessment of thermodynamic databases of selected materials systems for Pb-free solders, advanced steels and complex metallic alloys. In experimental part, the chemical and phase compositions of samples in investigated systems will be determined, their thermodynamic properties will be measured and phase transitions will be characterized. These data will be analysed and compared to results of computations of phase equilibria, using CALPHAD method and software Thermocalc. Based on this procedure, the thermodynamic description of phases in investigated systems will be optimized, and values of interaction parameters of components will be refined. These results should be useful for planning further research of new alloys in these systems, aimed to improve the properties of existing materials.

Title of the project Promotion of new responsibilities for IT application in materials research and education.
Type of the project KEGA
Number of the project 327-010STU-4/2010
Main Investigator Marián Kubliha, Assoc. Professor, PhD.
Time period of the project 2010-2011
Annotation of the project The project is focused on an improvement of intellectual skills of graduates of the second and third grades of the university study in area of preparation and management of technical experiment supported with IT technology, especially correct selection, application of communication systems of measurement appliances, technological equipment, sensors, etc. The aim of project is to prepare and implement a subject processed in a specialised laboratory into syllabus. Students can gain new competencies which will increase their ability to be successful at labour market and workplaces which are using a top technology. We expect an increase of research potential and the growth of flexibility of graduates.

Title of the project Investigation of special glass technology by physical methods
Type of the project bilateral, APVV
Number of the project SK-CZ-0143-09
Main investigator Vladimír Labaš, Assoc. Professor, PhD.
Time period of the project 2010-2011
Annotation of the project The project is focused on a support of cooperation between Slovak and Czech partners in the area of preparation and testing of physical properties of special glasses. The study is focused on the explanation of permanent (irreversible) changes in structure of glasses. Structure modifications are usually typical by creation of free spaces, new particles and phases which can be observed by different ways. In non-crystalline substances the structure modifications cannot be identified by the change of structure symmetry. The process will be characterized by different experimental methods based on IR, UV-VIS, and dielectric spectroscopy and thermal analysis. The aim of the project resides in looking for possible correlations between above methods and proposing of models for description of irreversible processes in non-crystalline structures. Besides the project proposers, also the third partner of France is involved in the project.

Title of the project Solidification and properties of novel peritectic TiAl-based alloys
Type of the project APVV
Number of the project APVV-0434-10
Main investigator Juraj Lapin, DrSc., Institute of Materials and Machine Mechanics, Slovak Academy of Sciences in Bratislava
Investigator at MTF STU Svetozár Demian, PhD.
Time period of the project 2011-2014
Annotation of the project Peritectic alloys based on TiAl are excellent candidates for near net shape casting of light-weight structural components for aircraft automotive engines. Industrial gas turbines end new generation of nuclear reactors. To advance the knowledge in emerging casting technology sector of TiAl based alloys, the SOPERIT project aims to investigate microstructure formation and segregation during solidification and solid phase transformation of novel peritectic TiAl based alloys. The attention is directed to understand the effect of solidification parameters and alloying on primary solidification phase, solidification path, phase equilibria, the columnar-to-equiaxed transition (CET), texture formation and nucleation activity of peritectic phase which will open up new opportunities for alloys and process design. The novel peritectic alloys with fine grain structure will be designed and their microstructure and properties (chemical, physical and mechanical) will be characterized. Fine grain structure will be achieved through appropriate alloying affecting nucleation of peritectic phase and solid phase transformations. Unique CET experiments will provide knowledge about mechanisms of nucleation of equiaxed grains, associated segregation and necessary input data for CET modeling. Parallel to these research activities, laboratory near net shape casting technique based on plasma melting in water cooled crystallizer and gravity casting into ceramic moulds will be developed.

Title of the project Interactions in bio and nanosystems
Type of the project APVV
Number of the project APVV-0059-10
Main investigator Vladimír Kellö, Professor, DrSc., Faculty of Natural Sciences, Comenius University in Bratislava
Investigator at MTF STU Miroslav Urban, Professor, DrSc.
Time period of the project 2011-2014
Annotation of the project From quantum chemistry of intermolecular interactions to nanoparticles. Obtaining interaction energies for models needed for the "docking and scoring" analysis in drug design, analysis of active sites of the drug and the biomolecule. The model metal – surface interactions, molecular processes at surfaces and cavities. Accuracy assessment of approximate methods of quantum chemistry for larger molecules and molecular clusters employing the relativistic CC data for smaller model molecules.

VISITS OF STAFF MEMBERS TO FOREIGN INSTITUTIONS

Employee	State
Antušek Andrej, RNDr. , PhD.	Poland,Switzerland, France
Bošák Ondrej, Mgr. , PhD.	Czech Republic
Čaplovič Ľubomír, Assoc.Prof.Ing. , PhD.	Czech Republic
Černičková Ivona, Ing.	Austria
Čička Roman, Ing. , PhD.	Austria, France, Czech Republic
Demianová Kristína, Ing.	Czech Republic
Drienovský Marián, Ing.	Austria, Czech Republic
Frkáňová Katarína, Ing.	Austria
Grgač Peter, Assoc.Prof.Ing. , CSc.	Germany, Brazil
Holka Filip, Mgr. , PhD.	Czech Republic, Poland, France
Hudáková Mária, Assoc.Prof.Ing. , PhD.	Czech Republic
Janovec Jozef, prof.Ing. , DrSc.	Austria,United Kingdom
Jurči Peter, prof.Ing. , PhD.	Czech Republic
Kolesár Vladimír, Ing.RNDr.	Germany
Kubliha Marian, Assoc.Prof.Ing. , PhD.	Czech Republic, Poland, France
Kusý Martin, Assoc.Prof.Ing. , PhD.	Germany, Czech Republic, Austria
Labaš Vladimír, Assoc.Prof.RNDr. , PhD.	Czech Republic
Malkin Elena, Mgr. , PhD.	Austria
Ožvold Milan, prof.RNDr. , CSc.	Austria, Czech Republic
Péteryová Magda, Mgr.	Czech Republic
Priputen Pavol, RNDr. , PhD.	France
Psota Jozef, Ing.	Rumunsko, Poland
Psota Jozef, Ing.	Poland
Riedlmajer Róbert, Assoc.Prof.Ing. , PhD.	Germany, Czech Republic, Austria
Sahul Martin, Ing.	Czech Republic
Sedlická Viktória, Ing. , PhD.	Czech Republic
Skarba Michal, Mgr. , PhD.	Germany
Šutiaková Ingrid, Ing.	Czech Republic
Tóth Martin, Ing.	Czech Republic, Poland, France
Urban Miroslav, prof.RNDr. , DrSc.	Czech Republic, France, Japonsko, Poland

MEMBERSHIP IN SLOVAK PROFESSIONAL ORGANISATIONS

Union of Slovak Mathematicians and Physicists
Ondrej Bošák, PhD.

Slovak Physical Society
Marián Kubliha, Assoc. Prof. PhD.
Ondrej Bošák, PhD.
Viera Kaššáková, PhD.
Andrej Dobrotka, MSc.
Milan Ožvold, Professor, PhD.
Róbert Riedlmajer, PhD.
Roman Čička, PhD.
Igor Jančuška, PhD.
Jozef Krajčovič, PhD.
Vladimír Labaš, Assoc. Prof. PhD.
Ján Kalužný, Professor, PhD.
Stanislav Minárik, Assoc. Prof. PhD.
Pavol Priputen, PhD.

Slovak Academy of Science / Metal Science Society
Jozef Janovec, Professor,DrSc.
Ľubomír Čaplovič, Assoc. Prof. PhD.
Lýdia Trnková, PhD.
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Martin Kusý, Assoc. Prof. PhD.
Roman Moravčík, Assoc. Prof. PhD.

Information Society of Education
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Slovak Association of Physicists
Viera Kaššáková, PhD.

Special Interest Group of Chemistry and Physics of Solid
Ľubomír Čaplovič, Assoc. Prof. PhD.

Slovak Astronomical Society
Andrej Dobrotka, PhD.

Slovak Academy Society
Miroslav Urban, Professor, DrSc.
Jozef Janovec, Professor, DrSc.

Learned Society at Slovak Academy of Sciences
Miroslav Urban, Professor, DrSc.

Slovak Commission for Scientific Degrees
Jozef Janovec, Professor, DrSc.

MEMBERSHIP IN INTERNATIONAL PROFESSIONAL ORGANISATIONS

Minerals, Metals and Materials Society
Jozef Janovec, Professor, DrSc.

IUCr International Union of Crystallography
Ľubomír Čaplovič, Assoc. Prof. PhD.
Jozef Janovec, Professor, DrSc.

European Physical Society
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Association for the Heat Treatment of Metals
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Union of Czech Mathematicians and Physicists
Jozef Krajčovič, PhD.

International Society for Theoretical Chemical Physics
Miroslav Urban, Professor, DrSc.

World Association of Theoretical and Computational Chemists
Miroslav Urban, Professor, DrSc.

International Academy of Quantum Molecular Science
Miroslav Urban, Professor, DrSc.

PUBLICATIONS

Journals

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- PhD Students: 58

Activities at the Institute

Date	Title of event, activity characterising the life at the Institute in 2011
1/2011	New professors – prof. Ing. Milan Marônek, CSc., prof. Ing. Peter Šugár, CSc.
4/2011	Professor of year – prof. Ing. Alexander Čaus, DrSc.
4/ 2011	Research technical seminar ESAB
9/2011	18th International Scientific Conference FORMING 2011, Trojanovice, Beskydy, Czech Republic
10/2011	International Research Conference TEAM 2011
11/2011	Workshop: Progressive technologies and their application in manufacturing industry
11/2011	Ocenenie SZS „3x The best": The best lecturer of the year 2010 - prof. Ing. Milan Turňa, PhD. IWE.

EDUCATION AT THE INSTITUTE

STUDY PROGRAMMES

Bachelor degree:
- Computer-Aided Production Technologies
- Production Technologies

Master degree:
- Machining and Assembly
- Computer-Aided Design and Production
- Welding
- Industrial and Art Casting

Post graduate degree:
- Machine Technologies and Materials

Number of the students (till 30.10. 2011)
on the study programmes guaranteed by the institute: 719
Number of the graduates (2010/2011)
on the study programmes guaranteed by the institute: 195

GRADUATE PROFILE

BACHELOR PROGRAMMES (Bc.)

Production Technologies
The graduate understands theoretical and practical issues in production technologies and systems. He is able to solve creatively the tasks in the field of production, seek new progressive technology procedures in the production of parts and technology units, using modern technology devices and information systems. He is prepared either to continue his study within Master degree study programme, or to enter the job market as a technologist or a team member in various areas of industry in both private and public sectors.

Computer-Aided Production Technologies
The graduate is able to perform the job of a production technologist able to operate computational technology CAx systems and Cax technologies used in the production preparation and control. The graduate is able to prepare technical documentation and construct and design programs for CNC production machine tools, model complex 3D products and simulate preparation of their production. The graduate is also able to implement and operate production and technological systems in a position of a CAD/CAM technologist, constructor of production tools and a programmer of NC technology using appropriate computer systems and software.

MASTER PROGRAMMES (MSc./ ENG.)

Machining and Assembly
The graduate has gained complete bachelor degree education in production of machinery products and implementation of the latest technologies in the field of chip and chipless machining and products assembly in particular. He understands the subject, from the material origin up to the change of its properties after machining up to the phase of its assembly into larger units. He has deep theoretical knowledge in the field of production technologies (machining, welding, forming, foundry and assembly), materials and tools, the application of production machines and equipment supported by the knowledge of CAx technologies. He can perform as a production technologist, tool technologist, CNC technologist and assembly technologist, as well as a leader in the sectors of technological preparation of production.

Computer-Aided Design and Production
The graduates master the complex field of CA systems and CA technologies used in production preparation and control. He is able to meet special requirements and design specialised applications, form and lead the teams implementing engineering computer analyses, simulations of production processes, design computer-aided production units, lead the teams using computer technology in the field of technical preparation of production, or work as managers and entrepreneurs in the field of computational technology and CA system implementation in production support.

Industrial and Art Foundry
The graduate has gained complex knowledge of technological processes of liquid metal preparation, production of moulds for industrial and art castings with high-precision and high-quality surface. He has theoretical knowledge of metallurgy of casting materials, processes, design of castings' mould, moulds manufacturing, and apertures of castings. He is able to work with computational technology, software for simulation of casting processes, computer-aided design of the casting shape, and prediction of casting properties in the phase of production preparation. He can autonomously design technological procedures and control production in a foundry. He can successfully perform in public and private sectors, research, as well as in construction and project workplaces.

Forming
The graduate has gained complete university education in the major of Production Technologies, primarily in Technology of Forming and its implementation in practice. He understands fundamentals of production technologies, processes of metallic material deformation, functions of forming machines and tools, as well as application of mechanisation and automation.
He is be able to design technological procedures and forming tools, solve work safety, provide calculations of force and energetic strain parameters and control calculations for the construction of individual parts of tools, implement the knowledge of properties of forming machines and solve automation in forming.
He can successfully perform as a production manager in the fields of technology development and manufacturing practice in various sectors of industry, mainly of automotive industry, as well as in the private sector.

Welding
The graduate is able to evaluate the selection of materials, technology feasibility and modern progressive concepts of products that will be manufactured by welding, other joining technologies and cutting. S/he has simultaneously gained the knowledge of the computational technology utilisation and computer simulations in the field of thermal processes in order to minimise degradations of the chosen materials. S/he is able to justify safety risks and provide solid outcome for the economic assessment of a product. The graduate can successfully perform in the top industrial production, university research, both domestic and abroad, as well as in the managerial positions requiring the knowledge in the field of materials and their further progressive technological processing.

POSTGRADUATE PROGRAMMES (PhD.)

Machine Technologies and Materials
The graduate gains wide theoretical knowledge in the field of metallurgy, progressive technologies of chipless and chip processing of materials, computer support and applications of CA technological systems, simulations and automation of technological processes.
The graduate masters scientific methods of research and development in production processes, particularly in technologies of machining, welding, forming, foundry, machine metrology, assembly, powder metallurgy and CA technologies. The graduate can find jobs in research and development institutes in managerial positions in the field of sophisticated production technologies, and in engineering universities. He is able to autonomously articulate and solve research tasks, and to lead a research team.

LIST OF SUBJECTS GUARANTEED WITH THE INSTITUTE

Assembly Technology
Assembly Technology and CAA systems
Assembly Theory
Atelier of Computer-Aided Design and Manufacturing
Automation of Foundry Production
Bachelor Project
Bachelor Thesis
Bulk Forming Processes
CA systems and Computer Simulation Processes
CAD/CAM Systems
CAPP – Computer Aided Process Planning
CAx technologies
Computer Aided Forming Technology
Computer Aided Productions Technologies
Computer Aided Welding Technology
Design and Manufacturing of Welding Constructions
Design for Manufacturing
Dissertation Project
Equipment for Foundry and Metal Casting
Experimental Methods in Forming
Experimental Methods in Machining
Final Project
Finishing Methods of Machining
Flexible Production Lines for Forming Process
Forming Machines
Forming Machines and Tools
Forming Technology
Forming Tools
Foundry Technology
Fundamentals of Assembly
Geometrical Product Specification
Graduate Project
Graduate Thesis
Inspection in Welding
Introduction to Computer Aided Production Technologies
Machine Tools and Fixtures
Machining Technology and Assembly
Maintenance and Renovation
Measuring and Control Parameters of Products
Mechanization and Automation in Machining
Metrology
Metrology and CAQ systems
Optimization of Forming Processes
Paedeutical Activity
Planning of Welding Manufacture
Practice
Programming of NC machines
Progressive Machining Methods
Progressive Methods of Assembly
Progressive Methods of Moulds and Cores Production
Projecting of Production Processes and Systems Design
Quality and Safety of Forming
Quality Control and Casting defects
Quality Control of Weld Joints
Research Work
Selected Parts from Theory and Technologies of casting
Selected Parts from Theory and Technologies of forming
Selected Parts from Theory and Technologies of machining, metrology and assembly
Selected Parts from Theory and Technology of welding
Semester Project
Sheet Metal Forming
Soldering and Brazing
Special Casting Technologies
Special Technologies of Artistic Castings Production
Special Welding Methods
Technical Preparation of Production in Forming
Technical Preparation of Production in Machining and Forming
Technical Preparation of Production in Welding and Casting
Technological Process Modelling and Simulation
Technologies of Special Cast Irons Production
Technology of Powder Metallurgy
Theory of Casting
Theory of Forming
Theory of Machining
Theory of Welding
Tribology
Welding Machines and Equipment
Welding Technology

GRADUATE THESES

BACHELOR THESES

Babis, Peter:	Cutting conditions and tools for precise hole drilling in composite materials
Bališ, Daniel:	Influence of cutting conditions on a quality of tooled surface at milling operations
Bašnár, Miroslav:	Use the programe PowerShape at design of refriderator wagon
Bednárová, Katarína:	Impact of technological parametres on the guality of die forgings for die forging
Beňová, Martina:	Potential uses of computer technology in the technological process of extrusion
Beták, Tomáš:	Quality control of welds prepared by resistance welding
Bol, Branislav:	3D picturing in artistic activities
Brimus, Marcel:	Industrial applications of laser
Brychta, Marcel:	Cutting forces in copy milling
Calpaš, Ľubomír:	Design of assembly gearbox
Dičér, Viktor:	Multifuntional robotic chassis extension design
Dobrovodský, Peter:	3D imaging in the technical-practical
Drlička, Ján:	Use of induction heating for soldering of metallic materials
Ertel, Jozef:	Current state in the field of development of lead-free solder in microelectronics
Filka, Ján:	Contactless measurement systems in production of car chassis
Fojtlín, Matúš:	The design of the gating system for smal-scale figural sculpture without a core
Fonodová, Zuzana:	Errors (defects) of welded joints, the diagnosis and impact on the life of welded structures
Fűri, Viktor:	Delamination vs. tool wear at drilling composite materials
Fúsek, Peter:	Design manufacture cutting tools in molding production
Gajdošík, Marek:	Individual microcutting
Gemzický, Ivan:	Welding high alloy steels at production hoppers for Vibration Screens
Guldan, Juraj:	Influence of cutting conditions on quality of machined surface at turning operation
Gyárfás, Marek:	Possibilities of measuring the accuracy of milled shaped surfaces
Hanečka, Michal:	Ecologically injurious matters in foundry
Hladík, Lukáš:	Foundries impact on the environment
Chovanec, Rastislav:	Kinematic structures 5-axis milling
Jančoková, Ľudmila:	Computer aided for high speed machining
Jurka, Boris:	New ways of 3D modeling
Karvaš, Matej:	Possibilities to increase durability and lifetime of cutting tools
Kayser, Ján:	Computer aided for ultrasonic machining
Košík, Miroslav:	Design of injection mold with conformal cooling
Križan, Boris:	Design of assembly differential
Kucko, Michal:	Design the torque converter assembly in the company ZF SACHS Slovakia
Kuka, Martin:	Use of 5-axis machining in practice
Kútny, Michal:	Simulation of machine Ultrasonic 20 linear in CAM software PowerMill
Ležovič, Milan:	Use 3D scanners in forming
Likavčan, Lukáš:	Possibilities of scanning cylindrical components by 3D optical scanner
Lovciová, Lucia:	Research workability of metallic materials
Majerník, Tomáš:	Automatized creation of CNC programs with PowerMILL system
Marek, Peter:	Laser welding CrNi austenitic stainless steel to carbon steel
Martinka, Erik:	Design and installation of long air gun
Masár, Stanislav:	Application of operation process and technical documentation for production of power cord
Mazánik, Radoslav:	Projection and production of teaching aid - turning tool
Mészároš, Daniel:	Electron beam welding of high-alloyed steel to copper
Mihálik, Martin:	Computer modeling of manufacturing machines and devices
Miklušáková, Jana:	Advanced measurement methods in engineering metrology
Milde, Ján:	Machining and Medicine
Minárik, Vladislav:	The Application of Cutting with Abrasive Water Jet in Practice
Mosnár, Vladimír:	Cutting tools and sharpening of them
Ondruška, Martin:	Measurement options on machine DMG Ultrasonic 20 liner
Pálenkár, Michal:	Modeling of industrial laser devices
Pánik, Pavol:	Tools construction for a computer
Píš, Tomáš:	Creating a database of tools for FeatureCAM software
Pleva, Tomáš:	Roundness deviation turned steel pipes
Polakovič, Marek:	Simulation of machine DMU 50V in the software PowerMill
Rezbárik, Peter:	Design of RC airplane model Spitfire
Sand, Jakub:	Use of a modified and inoculation to improve the microstructure and mechanical properties of high speed steel STN 41 9830
Schvarc, Adam:	The structural design of ethanol fireplace

Siman, Marek:	The Overview of molding compounds and technologies for the production of box castings
Sitár, Timotej:	Influence the finishing machining on surface quality
Sítek, Branislav:	The choice of abrasive material and water nozzle for abrasive water jet cutting
Slamka, Martin:	Visualization of assembly and disassembly device with the support of visualization software
Smolík, Richard:	Automated quality control in production
Sobotová, Terézia:	Technological aspects of closed profiles
Spišiak, Martin:	Spatial shapes in machining
Sýkorová, Tamara:	Utilization of X-rays for 3D digitization (X-ray scanners and computed tomography
Šarmír, Martin:	Creating 3D models of the devices for Rapid Prototyping
Šimo, Ľuboš:	Progressive machining technologies in the aerospace industry
Šmida, Erik:	Production of complex parts using a spindle
Špalek, Roman:	Machine tool HSC 105 linear simulation in PowerMILL
Šútovec, Matej:	Laser welding of dual phase steels
Švorec, Jozef:	Simulation of the machine Eagle 1000 in software PowerMILL
Tankovič, Viktor:	The structures of 5 - axis milling machines
Tibenský, Tomáš:	Condition of surface and surface layers after machining
Tichý, Lukáš:	The production design of a complex parts on the CNC lathe with subspindle
Tóth, Ľudovít:	Design and production of models turning blades as teaching aids
Trokan, Tomáš:	Inclusions in castings and elimination
Urban, Peter:	Balancing of Toolholders
Urminský, Ján:	Inspection of welded joints and construction by using ultrasound and radiography
Vach, Roman:	Laser technologies in machining
Velič, Marek:	Fixtures and fixturing of workpieces for 5-axis milling
Viola, Ladislav:	The creating a database of tools for ultrasonic machining in software PowerMill
Virág, Daniel:	3D scanning of large size objects
Záhončík, Dan:	Probes for CMM and measurement systems for machine tools
Zajac, Ján:	A comparison of strategies for measuring flatness of a coordinate measuring machine
Závodný, Marek:	The Alternative of an Optimal CAM Solution
Zelník, Roman:	The draft program for layouts of engineering production
Zemko, Marek:	Design of the audio amplifier assembly
Zifčák, Milan:	Analysis of coincident effects during machining
Zvonár, David:	Assembly systems
Žovinec, Marek:	Methods of measuring temperature in the machining process

MASTERS THESES

Auxt, Ľubomír:	Influence of selected parameters Tekcast casting method for surface roughness and defect of casting from zine alloy
Barcík, Vladimír:	Utilization possibilities of mobile hand 3D scanners
Beťko, Ján:	Impact of diagnostics defects in welded joints of structures by NDT methods to determine their lifetime
Beťková, Katarína:	Effect of parameters of laser beam welding on corrosion resistance of welded joints of borated austenitic stainless steel
Blaško, Miroslav:	Models of surface roughness Ra and Rz as dependencies on the feed and depth of cut during the reaming
Blšťák, Richard:	Project of information system used to selection and application of cutting fluids
Bludovič, Martin:	3D scanning of small parts
Bohunický, Andrej:	The model of surface roughness parameters Ra and Rz as depending on the feed and depth of cut for milling
Bošeľa, Marek:	Study of solidification structure transformation high speed steel during heat treatment
Bubanec, Branislav:	Creation of multimedia educational tools in the field of laser welding
Daňo, Jaroslav:	Welding of heat exchanger by laser beam
Daxner, Michal:	Mechanical properties of solder joint soldered by hot plate
Desát, Martin:	Study the creation of intermetallic phases and amorphous states in welding explosion
Drobný, Andrej:	The project of Assembling workstations
Držík, Michal:	Proposal for production components and assembly of water meters and gas meters
Držka, Michal:	Studies of solidification structures in high speed steel cutting tools for cast
Farkas, Robert:	Design manufacture and installation of the storage container in the company SK-Cont, s.r.o.q.
Filan, Martin:	Microstructure of solder joints made using an ultrasonic soldering
Frimel, Vladimír:	Analysis of the weld deposited cladding properties, created by a powerful solid-state laser with filler material in the form of wire
Gábor, Tomáš:	The role of fluxes in low-temperature soldering with lead free solders
Gálik, Slavomír:	Models of surface roughness parameters Ra and Rz as depending on the feed and drill diameter when drilling
Gorný, Róbert:	Study of influence caused by level of recasting to the structure and character of the damage of cast iron globular graphite
Grúbel, Marek:	Color optical 3D digitizing
Gubien, Milan:	Rationalization of assembling switch board in company SLK Elektro, s.r.o. Komárno
Guniš, Zdenko:	The impact of the strategy of lathe-turning on the accuracy of the thinwalled products
Hanicová, Erika:	Forming of laser welded semi – products
Hencz, Marián:	Methods of finishing surfaces after machining
Herceg, Peter:	3D animations of selected Rapid Prototyping machines

Heteš, Marek:	Visualization of cutting fluids flow in the process of machining
Hlaváčová, Ivana:	Growth of intermetallic phases on interface solder – substrate
Hornák, Marek:	High - frequency surfacing of metals
Hôrka, Milan:	Resistance soldering thin copper pipes
Hrašna, Štefan:	Proposal production pool gutters
Hurajt, Marek:	Influence of used type of filter on filling of mold cavity and the amount of inclusions in the casting from aluminum alloy
Chovanec, Lukáš:	Replacing aluminium parts to plastic parts
Ivic, Jozef:	Developing software for cutting liquid quality evaluating
Jambrich, Vladimír:	Laser welding of combined steels
Janeček, Miroslav:	Effect of CNC equipment to process continuous improvement in the company Hammerbacher SK
Jankech, Daniel:	Explosion cladding of austenitic CrNi steel on malleable cast iron
Jurkas, Miroslav:	Increasing the productivity of drilling for the specified component in terms of ŽOS Trnava, a.s.
Kišša, Erik:	The suggestion for rational production of a hydraulic cube
Kollár, Michal:	Computer aided evaluation of strain processes in material
Kollár, Vladimír:	Chatter in the process of 5 - axis milling
Kopča, Karol:	Effect of turning strategy on precision products
Köplingerová, Lenka:	Mechanical properties of solder joints made using power ultrasound
Kosinszký, Adam:	Laser welding of 42CrMo4 steel
Kosnáčová, Lucia:	Draft assembly of the ceiling cooling in the company Thermotech Ltd.
Kozlík, Pavol:	The fatigue characteristic of weld joint nitrooxidatively treated steel plates
Kožík, Michal:	Construction of own 3D printer
Kramár, Tomáš:	Welding technology influence on weld joints porosity of steel sheets treated by nitrooxidation
Krampoťák, Peter:	Mechanical fracture characteristics of nitrooxidation prepared thin steel plates on weld joints
Kresťanko, Ján:	Proposal assembly of lifting mechanism
Kubovič, Peter:	Influence of choice of CNC working cycles milling and drilling to delamination at machinig composite materials with ultrasound aiding
Laburdová, Petra:	Manufacturing of gear wheels with 5-axis milling
Laurov, Peter:	Production of proposal part of filter
Lisinovič, Dominik:	Application of 3D optical scanner to machine tool
Lüttmerding, Matúš:	Cutting fluids in machining with aid of ultrasonic
Maňko, Jozef:	Design, manufacture and assembly of safety valve
Márk, Alexander:	Proposal for production of components and assembly of plastic windows and doors
Marko, Marián:	Production rationalization of forming tools
Masarovičová, Henrieta:	Design optimization of assembly lines in terms of Hansol LCD Slovakia s.r.o.
Matulová, Daniela:	Computer aided design and production of a memory coin
Mazán, Ľuboš:	The proposal of measuring plan for measuring component on coordinate measuring machine
Mičic, Peter:	Creation of NC programm by CAD/CAM system CATIA V5
Michalčaková, Adinka:	Plasma arc welding of steel sheets treated by nitrooxidation
Mikulová, Bohuslava:	Impact of milling strategies for selected characteristics of the cutting process
Minárik, Miroslav:	Effect of moisture content and molding a mixture of single life with the addition of various mixtures of nuclear technology and its mechanical properties
Mujgoš, Martin:	The proposition of organizing Assembly workstations
Nádaský, Pavol:	Quality control of welded joints prepared by resistance spot welding of nitrooxidatively treated sheets
Novák, Marcel:	Effect of tool holders, balancing the cutting process
Otočková, Petra:	Wearing out of tools in the process of 5-axis milling
Pajdlhauser, Andrej:	Software application for viewing STL models
Pajtina, Peter:	Project the tool for aircraft maintenance
Palacka, Marián:	Welding of stabilized austenitic CrNi steel with structural carbon steel
Pallósová, Alexandra:	Suggestion assembly of disassembly of the pump in company SLOVNAFT, a.s.
Pastorek, Tomáš:	Technology design of producing arched beam
Pós, Patrik:	Computer aided manufacturing of part using abrasive water jet
Pragáč, Roman:	Research of influence welding mode to form and dimensions weld durign TIG welding
Praženka, Radoslav:	Studying the properties of electron beam welded joints pistil hydraulic motors
Prenosilová, Dana:	Aluminium of brazing
Rehák, Peter:	Production of constructions for health services
Rosenberger, Martin:	Comparison of roundness deviation evaluating methods on coordinate measuring machine
Rybár, Roman:	Welding of 08CH18N12T steel with deposit of melted ring in root section of weld joint
Samardžiová, Michaela:	Energy consumption of maching process
Serdel, Pavol:	Explosion cladding of Al on ductile iron
Schwarz, Michal:	Models of surface parameters Ra and Rz as depending on the feed and depth of cut in turning
Sobotová, Magdaléna:	Investigation of lead-free solder for higher application temperatures
Spustová, Petronela:	Development engineering of assembling Workstation
Synaková, Beata:	Steel welding with concentreted copper source of energy
Šelmeci, Ondrej:	Analysis of mechanisms of material removal in the process of laser micromachining
Štefanec, Juraj:	The metods of material removal while processing thin-walled components
Šuhajda, Peter:	Temperature regime in laser welding of TRIP steel
Šulan, Marián:	Correction of stamping die by of 3D scan to ATOS and 5 - axises CNC milling

Tomášková, Zuzana:	Effect of cutting environment on the surface milling parts
Tóth, Juraj:	The application of CAD/CAM systems in art foundry for the design and manufacture of the both sided relief
Trebichalský, Peter:	Explosion cladding of Sn bronze to malleable cast iron
Trulík, Tomáš:	The production in INPO, s.r.o.
Uhrinová, Judita:	Evaluation of welding simulator efficiency
Vanák, Peter:	Temperature measurement for dry machining
Vizváry, Tomáš:	Cutting temperature at the machining of composite materials
Zázrivec, Michal:	Selection and comparation mechanical measurement method of solder joints
Zbyvatel', Adrián:	The production proposal for the chosen components in HSS Engineering s.r.o. company
Žák, Daniel:	System for Monitoring of the cutting fluids

PhD THESES

Demianová, Kristína:	A progressive matellurgical joining of solar collectors
Gatial, Martin:	Solid state welding of large area combined metals
Kováč, Peter:	Research of the variable blank holder force influence on the stress size in deep-drawing of complex parts
Lechovič, Emil:	Research and development of lead-free solder for microelectronics in consideration of the environmental requirements
Boháčik Michal:	Study of heat treatment influence to the structure and properties of high speed steel type STN 41 9830 for cast cutting tools
Nesvadba, Petr:	Research of explosive welding of low-temperature meltable metals
Omámik, Michal:	Metrological control of selected surface types of a mechanical part by using On - machine measurement system
Ondruška, Mário:	Welding of piston for hydroengine from 42CrMo4 steel by disk laser
Pocisková Dimová, Katarína:	The formation of intermetallic phases in lead-free solder interface – substrate
Revesová, Silvia:	Breach of surface layers in the abrasive wear surfacings
Schwarz, Ladislav:	Study of properties duplex steels electron beam welds joints
Úradník, Peter:	The use of interstitial phases of tungsten (WC powder) and titanium (TiB2 powder) to improve the structure and performance of STN 41 9830 HSS for cast cutting tools
Vrtochová, Tatiana:	Study of properties duplex steels CO2 laser beam welds joints

RESEARCH AT THE INSTITUTE

Area of research

- Production and control of components with complex forms and strict surface
- Numerical simulation and optimization of sheet metal and bulk forming processes
- Modification of surfaces of stainless steel with plasma discharge in electrolytes
- Art casting
- Classical and special methods of joining and cutting metallic and non-metallic materials
- Tribology and surface engineering
- All important and original results are presented at our institute, at seminars and conferences at home and abroad, and are published in reviewed or non-reviewed scientific journals and in professional journals.
- The results from the research activities are transferred to the educational process within specific subjects and also for the solution of bachelor, diploma and PhD works

Research characteristics

The research of the Institute of production technologies is oriented to the industrial technologies with respect to research and development in the sphere of high-tech technologies. The main fields of the industrial technologies at the Institute of production technologies are: machining, forming, foundry and welding.
Key directions of scientific research activity at the Institute of production technologies are focused on the support of the development of individual science and educational branches. It is safeguarded to the responsibilities for the special growth of workers. The attention is devoted first to the actual and prospective questions related to industrial technologies in conditions of SR, at which are made provisions for international trends as well as the integration processes to EU. The mark of scientific research work and activity is determined by originality of the scientific orientation of the teachers and scientific research workers, the material supply of the main workstations and the solution of scientific and socially best-known questions of social work. The Institute of production technologies is oriented to the trans-regional pedagogic and scientific activity in many aspects, cooperates with and is enlarging the co-operation with the more renowned scientific research institutes abroad. International co-operation in research is implemented mainly with the exchange of information, results, knowledge for education of PhD students (fellowships, educational visits, workshops).
The scientific directions of our main workstations are determined for the long term and cover the production and technological aspects of exploitation of all resources and solutions of actual questions in given branches. The layout of projects is oriented mostly to the production technologies in co-operation with industrial practices on the basis of actual global problems.

Areas of expertises:

- 5-axis Machining
- Adhesive Joining of Materials
- Application of Progressive Cutting Tools
- Application of Cutting Fluids
- Safety and Machinability of Materials
- CAD/CAM Systems
- Construction of Engineering Products in terms of Assembly
- Laser welding
- Metrology
- Tool Steels
- Surfacing
- Machining
- Centrifugal Casting
- Optical 3D Scanning
- Plastic Deformation
- Computer Simulation
- Surface Treatment (Cast Moulds)
- Powder Metallurgy
- DELPHI Programming
- Programming of NC Machines
- Quality Control in Welding
- Simulation processes in Forming
- Testing of Materials
- Soldering and Brazing
- Strengthening of Surface Layers
- Stereology
- Engineering Metrology
- Engineering Technology
- Special Methods of Welding
- Special Methods of Welding
- Technology of Forming
- Theory of Production Processes
- Theory of Welding
- Heat and Chemical Heat Treatment
- Tribology
- Forming Tools
- Forming Machines and Tools
- Formability of Materials
- Maintenance, Monitoring of Cutting Fluids
- Production of Steel Wires
- Die Forging
- Foundry Production
- Foundry
- Welded Structures
- Welding

PROJECTS OF THE INSTITUTE

PROJECT OF TECHNOLOGY TRANSFER

Title of the project	**Centre of Excellence for Five-Axis Machining** CE 5-axis machining – experimental base for high-tech research
Type of the project	OPVaV
Number of the project	ITMS 26220120013 ITMS 26220120045
Main investigator	Jozef Peterka, Professor, PhD.
Time period of project	2010-2012

Annotation of the project Five-axis machining is one of the main trends in cutting technology used for mould production. The term five-axis machining means cutting machine tools through which the movement carried out moves in five different axes simultaneously. The benefit of five-axis machining is the machine's ability to machine complex shapes in a single set-up and achieve a uniform surface with roughness being cultivated. The Centre will have the opportunity to realize the basic research on 5-axis machining of complex shape parts, including control and measurement and will also be able to monitor the quality of cutting fluids and cutting processes. It will be able to provide for all levels of learning in education together with establishing an experimental base for doctoral researchers from Slovak and foreign universities, and also practitioners. The ambition of the project is to help mould and die manufacturers (developers, designers, technologists, quality control persons, supervisors, young starting engineers and also skilled senior engineers) to mostly find theoretical and practical orientation (guidance) in this difficult cutting process of five-axis machining.

INTERNATIONAL PROJECTS

Title of the project	Towards common research project in area CA technologies in machining
Type of the project	Cooperation agreement
Number of the project	2/DELCAM-MTF/2008
Main investigator	Jozef Peterka, Professor, PhD.
Time period of the project	2008-2011

Annotation of the project The main purpose of the project is to expand the theoretical concept of CAD-CAM-CNC on concept CAD-CAM-CNC-CAQ-CAD and experimentally verify this new concept in the field of manufacturing of free form surfaces and in the field of assembly parts with free form surfaces in the conditions of university.

Title of the project Multivariate optimization of the metal spinning processes-research and development (Met-Spin)
Type of the project 6th Framework Programme
Number of the project MANUNET-2008-SK-001, program ERA-NET
Main investigator Peter Šugár, Professor, PhD.
Time period of the project 2009-2011
Annotation of the project The project of international applied research, solved in cooperation with the research organisation Inpromat, S. Coop., Sondika (Spain) and production company Sandrik 1895, Limited Hodruša-Hámre (Slovakia), is focused on the experimental study of the effect of workpiece geometry, workpiece material and technological parameters of the multi-pass conventional metal spinning process on the stress-strain distribution throughout the part and the influence of these parameters on the part's surface integrity. The results of experimental reasearch, realized on different shapes of spun parts, will be utilize for optimization of metal spinning processes used for production of medical, gastronomy and automotive components from low carbon steel, stainless steel, and aluminium alloys.

NATIONAL PROJECTS

Title of the project Special methods for metallurgical bonding of hard-to-weld materials and their application in manufacture of new materials with high technical parameters.
Type of the project VEGA
Number of the project 1/0842/09
Main investigator Milan Turňa, Professor, PhD. EWE
Time period of the project 2009-2011
Annotation of the project Design, experimental approval, and scientific reasoning of progressive matallurgical bonding of special and combined materials. A selection of special technologies of welding, soldering, etc. or hard-to-weld materials and materials sensitive to degradation in the process of technological processing. An application of new technologies of metallurgical bonding for manufacture of special materials with high technical parameters. Here can be mentioned for example the technologies of solid state welding (explosion, diffusion, MPW:FSW), welding and soldering with concentrated power sources (LB, EB, IB), RS and WS soldering. Engineering of special surfaces. Simulation of technological processes. Diagnosing the structural stability of fabricated joints by thermodynamical calculations with utilisation of CALPHAD program and databases for elucidation of mechanisms of joint formation. Design of workplace for explosion welding and building the laboratory for diffusion bonding and soldering with induction heating.

Title of the project Research of creation and growth of the reaction products in the area of interface solder joints produce by the environmentally suitable alloys in consideration of lifetime and reliability.
Type of the project VEGA
Number of the project 1/0111/10
Main investigator Erika Hodúlová, PhD.
Time period of the project 2010-2011
Annotation of the project The study of the interface of solder joints made by lead-free solders and the identifying of reaction products which are created in soldering process for low and high temperatures.
Acquistion of knowledge on creation and growth of the reaction products in formed lead-free solder joints. Calculation of diffusion coefficient and activation energy in soldering process and activation energy in the diffusion process which brings a complex picture on the mechanism in the process of soldering. It is important to describe the mechanism of solder joint formation with a possibility of influence on joint quality to understand better reactions by soldering. Designed steps of calculation of reaction products rate defines the lifetime and reliability of solder joints.

Title of the project The determination of suitable parameters for precision castings production by centrifugal spin casting into silicon moulds.
Type of the project VEGA
Number of the project 1/0383/10
Main investigator Matej Beznák, Assoc. Professor, PhD.
Time period of the project 2010-2011
Annotation of the project The project subject is a method of centrifugal spin casting of low-melting alloys into silicon moulds with Tekcast method. The priority aim is to determine a technological process and appropriate parameters by production of moulds and to provide the highest possible productivity, exactness and quality of castings.

Title of the project The structure and properties enhancement upon production of near-net-shape semi-products using technology of a direct hydrodynamic extrusion of castings
Type of the project VEGA
Number of the project 1/0099/10
Main investigator Alexander Čaus, Professor, DrSc.
Time period of the project 2010-2011
Annotation of the project The goal of the project is fundamental research on hetero-phases materials - nodular cast iron (NCI) and high-speed steel (HSS) hot mechanically worked by a direct hydrodynamic extrusion (DHE). The structure and properties of NCI and HSS after casting and DHE will be investigated with establishment of relationships between the technological parameters, structural changes and final properties of the materials. Primarily attention will be paid on the study of the effect of deformation on the rate of a structure heterogeneity and anisotropy as well as on physical-mechanical properties of the materials.

Title of the project Technological heritability of laser micromachining process and its influence on technological and exploitation properties of material.
Type of the project VEGA
Number of the project 1/0254/11
Main investigator Peter Šugár, Professor, PhD.
Time period of the project 2011-2014
Annotation of the project The project is aimed at the research of laser micromachining process (laser micromilling and so called laser microstructuring) during machining of metals by solid-state Nd: YAG laser. Two fields of interest are solved in this project. The first is the assignment of laser micromachining influence on the modification of corrosion resistance of corrosion-resistant steels and Ti-alloys. The second area of interest is to define optimal technological conditions of laser microstructuring of sheetmetal forming tools (spinning rollers) with the aim to reach maximal positive influence on the tribological conditions in the forming process.

Title of the project Research of weldability of duplex and superduplex stainless steels by concentrated energy sources
Type of the project VEGA
Number of the project 1/0222/11
Main investigator Koloman Ulrich, Professor, PhD.
Time period of the project 2011-2014
Annotation of the project The project deals with weldability of duplex steels by laser and electron beam welding. Welding of duplex steels by arc welding processes has been previously solved and is currently used in practice. The laser and electron beam welding of duplex steels exhibits problems with regard to proportion of structural components (austenite/ferrite) around 50/50%, resulting to poor corrosion resistance. The right balance of ferrite – austenite phases is important primarily from corrosion aspect, prefering the duplex steels before other stainless steels.

Title of the project Joining of surface treated thin steel sheets by modern joining methods
Type of the project VEGA
Number of the project 1/0203/11
Main investigator Milan Marônek, Professor, PhD.
Time period of the project 2011-2013
Annotation of the project The scientific project deals with joining (welding and adhesive joining) of steel sheets with a different kind of surface treatment. The surface layer significantly influences arc stability of technological process and consequently quality of weld and adhesive joints. As the new joining technologies (laser beam welding, arc welding methods with controlled metal transfer, hybrid welding methods, MIG brazing and adhesive bonding) are gradually being applied in praxis, there is necessary to know fitness of these joining methods to defined surface treatment or to specify range of process parameters leading to quality joint formation.

Title of the project Development of lead-free solder for higher application temperatures and research of material solderability of metallic and ceramic materials.
Type of the project VEGA
Number of the project 1/0211/11
Main investigator Roman Koleňák, Assoc. Professor, PhD.
Time period of the project 2011-2013
Annotation of the project The project is aimed at development of lead-free solder for higher application temperatures. The developed solder is destined for environmentally friendly soldering of metallic and ceramic materials. The developed solder will be used for solderability tests of ceramic and metallic materials with application of flux and without flux by use of power ultrasound. The structural character of solder at diverse soldering conditions will be studied, including the interactions on the soldered metal - solder boundary. The qualitative solderability criteria as wettability, spreadability, capillarity, diffusion and erosion at normal and extreme soldering conditions for the research of application conditions will be determined. Shear strength of joints fabricated with the developed solder in metallic and ceramic materials will be determined. The aging tests and thermal cycling tests of soldered joints will be also performed.

Title of the project Investigation of dynamic characteristics of the cutting process in 5 - axis milling in conditions of Centre of Excellence of 5 - axis machining.
Type of the project VEGA
Number of the project 1/0250/11
Main investigator Peter Pokorný, Assoc. Professor, PhD.
Time period of the project 2011-2013
Annotation of the project The project aims to explore the characteristics of the dynamic cutting process. In this context, the project studies the distribution and effect of cutting forces in the 5 - axis milling. The chatter as well as its origination, effect and ultimately the conditions for its elimination are important dynamic characteristics as well. The project therefore addresses the causes of the chatter in 5 - axis milling and deals with the solutions for milling without the chatter. The suitable choice of CAM milling strategies with regard to the desired shape and quality of a part is also important parameter in the process of 5 - axis milling. The project will therefore also analyse the impact of various 5 – axis milling CAM strategies on dynamic characteristics of the cutting process.

Title of the project	Study of environmental friendly binder on biological base for moulding sands
Type of the project	VEGA
Number of the project	1/0117/11
Main investigator	Rolad Šuba, PhD.
Time period of the project	2011-2013

Annotation of the project Foundry personnel using conventional binders are exposed to numerous known carcinogens. The main aim of foundries is to achieve decrease amount of toxic agents in the foundries air with achieving of required mechanical properties of moulds and cores, their good disintegrated properties after moulding and regenerating of sand material. The non-toxic, biodegradable, water soluble binders with rapid thermal breakdown can help to meet and even exceed these requirements.

Title of the project	Research of welding and forming of nitrooxidatively treated steel sheets
Type of the project	APVV
Number of the project	APVV-0057-07
Main investigator	Milan Marônek, Professor, PhD.
Time period of the project	2008-2011

Annotation of the project Nitrooxidative layers enhance significantly mechanical and anticorrosive properties of metal sheets. The project deals with the research of nitrooxidative layer making on metal sheets, the research of appropriate welding methods of such treated plates and with the study of forming and corrosive resistance of made weld joints. In the field of welding the basic characteristics of made weld joints will be studied (shape, structure, mechanical properties, weldability) by using the advanced technologies of welding of nitrooxidatively treated sheets.

Title of the project	The electron beam technological complex for welding, deposition welding and material surfacing
Type of the project	APVV
Number of the project	VMSP-P-0009-09
Main investigator	Koloman Ulrich, Professor, PhD.
Time period of the project	2009-2011

Annotation of the project The project subject is research of a technical solution for particular modules and function nodes of a laboratory model of university electron beam technological complex for industrial use. The subject technological complex is suitable for sophisticated industrial applications of high-tech electron technologies in areas of welding, creation of special layers and surface thermal treatment with use of a high-performance source of electrons with specific properties which will enable complex implementation for all mentioned applications. Its technical parameters will provide processing of solders according to the programmed trajectory of solder in a three-dimensional area.

VISITS OF STAFF MEMBERS TO FOREIGN INSTITUTIONS

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Beznák Matej, Assoc.Prof. Ing. , CSc.	Portugal and Azures
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Slovak Associations of Steel Constructions
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International Journal of Advances in Machining and Forming Operations
Alexander Čaus, Professor, DrSc., Associated Editor

PUBLICATIONS

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INSTITUTE OF PRODUCTION SYSTEMS AND APPLIED MECHANICS

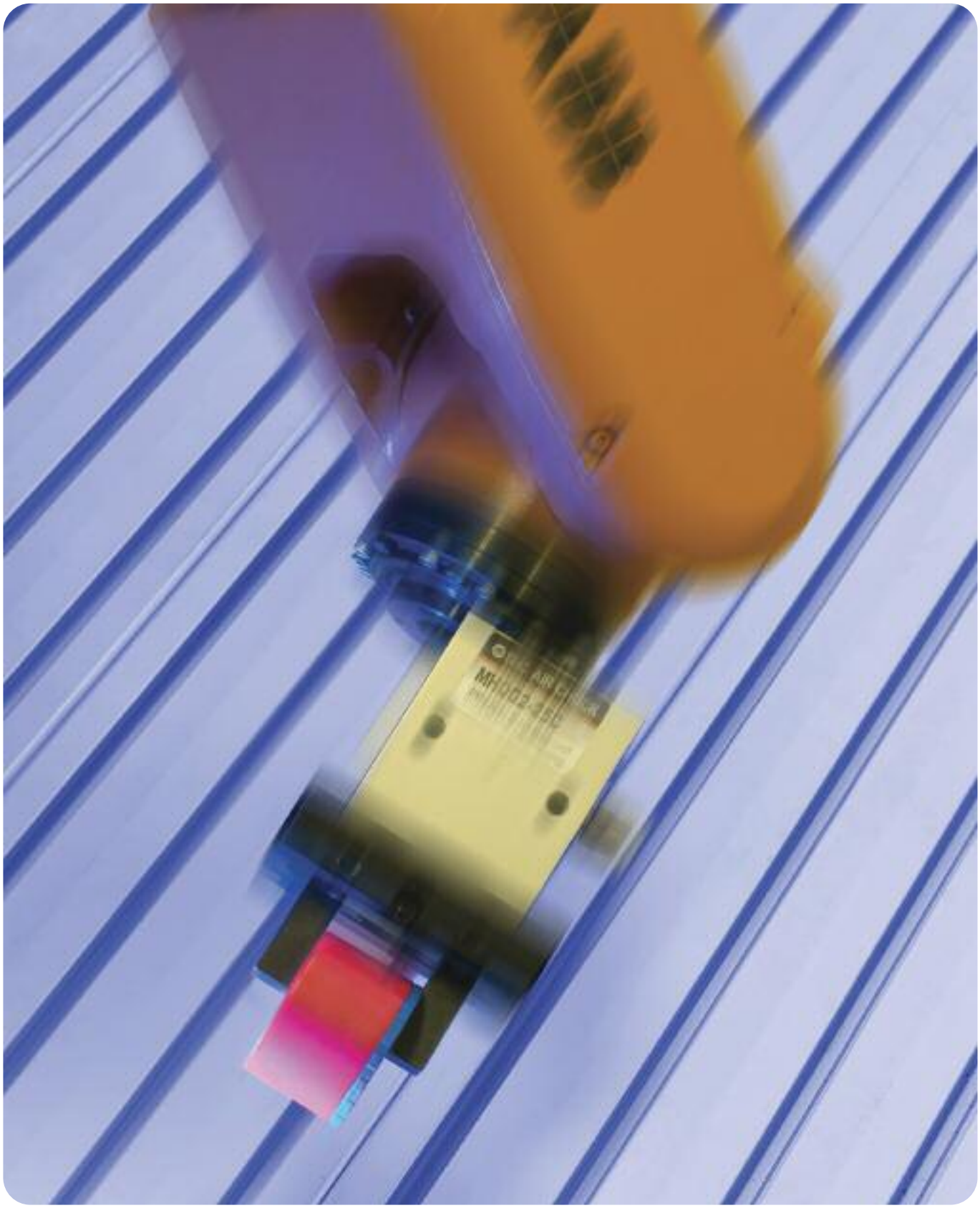

Photo by Milan Maršnek

INSTITUTE OF PRODUCTION SYSTEMS AND APPLIED MECHANICS

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Institute Departments

- Department of Applied Mechanics
- Department of Technological Devices and Systems

Staff

- Professors: 2
- Assoc. Professors: 5
- Senior Lecturers: 13
- Research Fellows: 3
- PhD Students: 13

EDUCATION AT THE INSTITUTE

STUDY PROGRAMMES

- Production Devices and Systems

Number of the students (till 30.10. 2011) on the study programmes guaranteed by the institute: 199
Number of the graduates (2010/2011) on the study programmes guaranteed by the institute: 47

GRADUATE PROFILE

BACHELOR PROGRAMMES (Bc.)

Production Devices and Systems
The graduate will gain complete bachelor degree education in the field of manufacturing engineering focused on engineering production including the maintenance and means of mechanisation and automation. The graduate understands machine technologies and applied tools. He has knowledge in Fundamentals of management, environmental engineering, work safety and health protection. He is able to solve the problems in the field of technical materials and their properties, as well as machine mechanics. He is prepared either for the Master degree study programme in production devices and systems or for immediate entry to the job market. The graduate will find engagement as a designer of automated production systems and devices, as a technologist, self-employed in engineering services or as a specialist in various production sections.

MASTER PROGRAMMES (MSc./ ENG.)

Production Devices and Systems
The graduate will gain a complete university (Master degree) education in the field of manufacturing engineering and materials, production processes and production systems. He understands the function of machines and constructions of production equipment. He has knowledge in the field of production machines and materials used in the processes of manufacturing. He is able to solve the tasks of machine mechanics, mechanisation and automation. He can recognize social, moral, legal and economic impacts of his profession. He is prepared to either continue his study in a post-graduate degree programme, implementing advanced methods and techniques of design and development, or to enter the job market immediately as an expert in production, project and development organisations in solving conceptual technical and organisational tasks of complex automation of production processes.

LIST OF SUBJECTS GUARANTEED WITH THE INSTITUTE

Applied Mechanics
Assembly Machines
Bachelor Project
Bachelor Thesis
Computer Aided Design I, II, III
Cutting Tools
Design of Production Systems
Diploma Thesis
Elasticity, Strength and Plasticity
Experimental methods and technical diagnostics
Finite Element Method
Fixtures
Fundamentals of Engineering Design and Technical Documentation
Graduation Project
Hydraulic and pneumatic mechanisms
Industrial Robots and Manipulators
Industrial Robots and Manipulators
Logistics of Production Systems
Machine Parts and Mechanisms
Machine Tools
Machines for Special Technologies
Maintenance of production systems
Mechanics of Fluids and Thermomechanics
Mechanics of Production Machines
Mechanics of rigid and flexible bodies
Mechanisation and Automation
Modelling of thermal processes
Noise and Vibration
Operation and Maintenance of Production Devices
Performance of Production Systems
Production Devices
Production Process Planning
Production Systems I
Professional practice
Programming of Production and Manipulating Devices
Reliability and Safety of Technical Systems
Technological Equipment of Production Machines
Technological Process Modelling and Simulation
Theory of Automatic Machines

GRADUATE THESES

BACHELOR THESES

Bartek, Ján:	Prototype Proposal of a Gripper Head for Rotation Components
Bašnák, Marek:	Design of an e-learning module – elements of pneumatic systems – actuators
Daniš, Kamil:	Optimal proposal of the material flow into assembly line of door facing for the Porsche Cayenne E2
Dobrovodský, Michal:	The ideological proposal of magnetic grippers for selected components
Filípek, Juraj:	Tribology in the operation of production facilities
Holková, Vladimíra:	Coding methods and automatic identification in mechanical manufacturing
Jančí, Radoslav:	Summary of application of gears in industrial production
Kmeť, Michal:	Hydraulic control system for mounting device
Kubík, Ivan:	Maintenance and repair of machinery
Lukačovič, Andrej:	Exploitation of the TPM (Total Productive Maintenance) method at the welding shop of the Peugeot Citroën Slovakia, Trnava
Marko, Ján:	Summary of component presentation by cuts and sections
Nemčic, Miroslav:	Conveyor Belts in Manufacturing
Srnka, Andrej:	Application automated line for a production plastic box in a sterile enviroment
Štefunko, Tomáš:	Projection electro-hydraulic control system for lift
Valovičová, Jana:	Material flow and its technical resources
Veselovský, Viktor:	Logistics and its utilization in the production system
Vlha, Lukáš:	Belts and chains in manufacturing practice
Vozár, Erik:	Conceptual design vacuum gripping head for selected parts
Záhora, Samuel:	The conceptual design of special effector for handling industrial robots
Župíková, Zuzana:	The influence of geometrical tolerances to the workpiece accuracy

MASTERS THESES

Čičmancová, Lenka:	Proposal for control station of assembly equipment
Drška, Stanislav:	The analysis of assembly plants and devices used in automotive industry
Gemeri, Dominik:	Design of the sensory equipment in the intelligent assembly cell
Gubrianska, Veronika:	The container for rivet entry to the mount rivering head in the assembly cell
Hankeová, Nadežda:	Storage systems and systems of identification of product FMS in Hanil industry
Hanzlíček, Michal:	Proposal of teaching department in the laboratory of software management for manufacturing systems
Horný, Martin:	Logistics of procurement and supplies management in the Hanil E-HWA company
Hrudka, Martin:	Project of method of the automatic exchange under the appropriate type of parts in intelligent assembly cell
Janita, Vladislav:	Increase of production system efficiency
Janitová, Ivana:	Production logistics of the HP coolers production
Kolík, Tomáš:	The superstructure of a mobile robot ROBOTINO for handling pallets,
Konečník, Peter:	Draft of the Clamping Device into the Intelligent Assembly Cell
Krupa, Michal:	Automated design of machines and equipment to develop production systems for forming
Meleg, Peter:	Proposal clamp with database of automatically changeable jaws
Pangrác, Daniel:	The intelligent clamping system based on pneumatic vise
Petráš, Jozef:	Reliability and availability of repairable production systems
Polakovičová, Silvia:	Palletizing workplace with industrial robot
Richter, Andrej:	Influence of gear on aggregate machine properties
Sejna, Milan:	Computer support maintanace of equipments in the enterprise
Strašifták, Lukáš:	Proposal for the transporting, handling and technological routes of production system
Svinčák, Juraj:	The proposal of device for measuring of vibration-damping properties of materials
Šajbidor, Marek:	Project of guidance of mobile robot Robotino into input-output location of inteligent assembly cell
Trokan, Dušan:	Implementation of instrument panel in transitional phase of three vehicles in the flow
Tulala, Rastislav:	Designing of production system with the support of simulation
Vyskoč, Lukáš:	The evidence of movement of the transporting containers

RESEARCH AT THE INSTITUTE

Area of research

- intelligent workpiece clamping
- intelligent assembly
- thematic network on manufacturing technologies
- new concept of integrated multifunction manufacturing system
- modeling, analysis, simulation and experimental investigation of machine aggregates as mechatronic systems
- investigation of new materials with progressive tribological properties
- research and application of new approaches in numerical methods – analysis and simulation of technological and industrial processes, static and dynamic analysis of engineering structures
- numerical simulation of heat transfer processes, fluid-structure interaction
- research and development in the field of theoretical and applied mechanics

Research characteristics

The research projects at the Institute of Production Systems and Applied Mechanics are focused on the support and development of education in the study programmes of Production Devices and Systems for bachelor, master and PhD. degrees. The research activities of the institute are aimed at the solution of up-to-date problems and tasks from the field of production systems and devices, applied mechanics, thermodynamics, heat transfer and numerical modeling of technological processes.

Main topics of research activities:

- Flexible manufacturing systems,
- Intelligent assembly systems,
- Intelligent clamping systems,
- Special production systems,
- Pneumatics and electro-pneumatics in control systems,
- Material flow in production,
- Use of computers in design and manufacturing of machines and devices,
- Modeling, analyses and simulations of mechanical systems and machine aggregates,
- Mechatronical principle application to production devices,
- Methods of diagnostics and identification,
- Mechanical systems reliability,
- Vibrations, acoustics and biomechanics,
- Determination of cooling characteristics for heat treating mediums,
- Mechanical, thermal, fluid and other analyses for mechanical parts of machine and skeletons,
- Modeling, numerical simulations, analyses and optimisation for processes of forming, welding, founding and heat treatment.

At the Institute, the following laboratories are established at this time: Laboratory of robotics, Virtual laboratory of pneumatics and electro-pneumatics systems, Laboratory of pneumatics, FESTO laboratory, Laboratory of CAD systems, Laboratory of machine mechanics, Laboratory of tribology, Laboratory of thermodynamics and mechanics of fluids, Laboratory of numerical analyses, Laboratory of modeling, Laboratory for vibration and acoustics research and also Mechanical workshop.

In the framework of cooperation between research and praxis, the institute cooperate with several industrial enterprises and research centers (FESTO spol. s r.o. Bratislava; SMC Priemyselná automatizácia spol. s r.o. Bratislava; ZF Sachs Slovakia, a.s. Trnava; TOMA INDUSTRIES spol. s r.o. Trnava; ŽOS, a.s. Trnava; INA Skalica, spol. s r.o. Skalica; VUJE, a.s. Trnava; EBO Slovenské elektrárne, a.s. Jaslovské Bohunice; JAVYS, a.s. Jaslovské Bohunice; AllDeco, spol. s r.o. Jaslovské Bohunice) and with institutes of the Slovak Academy of Sciences.

An important part of the research activities of the institute is represented by cooperation with universities abroad. The most important partners are TU Vienna, TU Miskolc, TU Cluj-Napoca, TU Poznaň, VUT Brno, TU Budapest, UTB Zlín, VŠB Ostrava, TU Brašov, TU Chemnitz, ZČU Plzeň, TU Izhevsk, and many others.

The results of research activities are published in domestic and international journals and presented at scientific conferences and symposiums. The obtained results are applied in education as well.

Areas of expertises

- Accustics and Vibration of Mechanical Systems
- Automation of Production and Assembly
- Nummerical Analysis and Simmulation of Technological Processes
- Industrial Heatings
- Structural Analysis (strength, dynamical) in Area of Nuclear Energy
- Technical Analysis, Measurement of Thermophysical Properties
- Production Technology
- Production Systems

PROJECTS OF THE INSTITUTE

PROJECT OF TECHNOLOGY TRANSFER

Title of the project Laboratory of flexible manufacturing systems with robotized manipulation supported by no- drawing production
Type of the project OPVaV
Number of the project ITMS 26220220055
Main investigator Karol Velíšek, Professor, PhD.
Time period of the project 2010-2012
Annotation of the project The aim of the project is to create an elastic production system with robotic regulation which will enable design-free production. The product will be modeled with a PC in an appropriate 3D CAD program, then the regulation program will be generated and it will be started in an elastic production system which will produce a component. It will provide the possibility to produce the necessary components for a concrete product. All produced components will be controlled during production, so the likelihood of failure of finished products will be decreased. This prototype device will help to observe the influence of different production strategies on production costs, time, which is necessary to produce a certain product amount, and other important efficiency parameters of the production. The advantages of design-free production and influence on efficiency of the whole process will be observed and presented in pre-production and production phases.

INTERNATIONAL PROJECTS

Title of the project Development of mechanical engineering (design, technology and production management) as an essential base for progress in the area of small and medium companies' logistics - research, preparation and implementation of joint programs of study
Type of the project CEEPUS
Number of the project CIII-PL-0033-07-1112
Main investigator Karol Velíšek, Professor, PhD.
Time period of the project 2011-2012
Annotation of the project Small and medium industrial companies (SMC), according to the opinion of many experts, are the base of developing countries economy. It concerns especially the economy of Central Europe countries, which formerly had non market economy. Development of mentioned industrial enterprises nowadays depends on proper level of mechanical engineering (design, manufacturing engineering, production management) and, in particular, on proper logistics. All of this demands good level of education from proper specialized institutions especially universities. Exchange of ideas, knowledge, results of investigations, students, teachers etc. is the condition sine qua non of high level of research and education in particular university. Thus, existence of the possibility of mentioned exchange is very important from the point of the development of economy.

Technology, one of the most important fields of knowledge of the modern world, determines manufacturing of various machines and mechanical equipment. The development of manufacturing methods is dependent on the intensity of research, the aim of which is obtaining high-quality products in mass production at as low costs as possible. Therefore, the investigations carried out by the majority of European research centers concentrate on basic conventional technologies as well as prospective unconventional manufacturing techniques. Numerically controlled machine tools and also modern computer-aided manufacturing systems are being employed in the analysis and simulation of technological processes. The development of technology enables monitoring of particular stages of the technological process, inspection of the technical conditions of technological machines and devices and control of the production cycle of machine elements. It is also possible to check the manufacturing accuracy (product dimensions, shape, surface quality), evaluate the quality of materials used for the manufacturing of particular machine elements, evaluate and test the final products, and also test the durability and reliability of machines and devices.

A typical company makes thousands of different parts, in many different batch sizes, using a variety of different manufacturing operations, processes and technologies. It is beyond the capability of the human mind to comprehend and manipulate such vast amount of detailed data. People still need to make decisions regarding how to run a manufacturing company and success in today's competitive environment at home and foreign markets. The pressure on management is continuing to escalate as global competition drives the need for producing a greater variety of high quality products, in smaller sizes and lower costs. These outgoing demands continuously increase the level of complexity present in a manufacturing environment. What is needed, are both the strategy and a tool that can be used to achieve such a purpose.

A global world brings global problems in production engineering. Economic pressure urges manufacturers to make more customized products of high quality, in smaller series, with shorter lead time and of course, without increased costs. Time is becoming one of the most important points of company strategy. Costs are also important. More important is competitive price and the most significant are marketability of manufactured products. Therefore producers look for tools that could increase a competitive advantage of their enterprises.

Logistics is that part of the supply chain process that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements. Industrial logistics is even more specialized and touches a wide range of topics related to plant supervision, demand planning and production control. Supply chain technology is a critical factor in extracting value. A supply chain strategy is needed to spot the proper supply chain technology. Selecting the right system requires a careful evaluation process that asks the right question and spot proper solutions for logistics and industrial logistics.

Taking into account all the above mentioned aspects of modern manufacturing of machines and technological devices, the following subject of a new research project to be realized within the framework of the CEEPUS program has been proposed.

Title of the project Applications of Rapid Manufacturing in Biomedical Fields
Type of the project CEEPUS
Number of the project CIII-SI-0206-05-1112
Main investigator Karol Velíšek, Professor, PhD
Time period of the project 2011-2012
Annotation of the project Rapid Manufacturing methods are showing a great potential in the field of medical applications. They are at their essence most suitable for individual – custom made parts that are in almost 100% demanded for medical applications. For example, hip implants are nowadays made in series of several modules – sizes. The choice is then made by the surgeon according to the patient's size and without making any mistakes at the decision there are still great chances that the chosen implant won't fit as supposed. The consequences are uneven and therefore rapid wear of an acetabular cup which leads to unplanned revision operations. Data show that 11% of all unplanned revision operations for hip implant's replacements are caused by the misalignment of the implant at the first installation. Using the Reverse Engineering and Rapid Manufacturing techniques a vast majority of these problems can be avoided.
Although a lot of research work has already been done in this field the methods of surgical operations' planning and using the custom made implants haven't been widely adopted by the medical staff. Reasons for that are very diverse but the most common one is a lack of understanding on both, medical as well as engineering side. The proposed network is aimed to overcome these obstacles by joining a small group of medical and engineering institution to develop a common knowledge base that will enable mutual understanding of ever changing research subjects.
The research and educational work in the frame of the network will mostly be aimed to the following research/educational topics:
- Processing of the medical images (from CT and MRI).
- Printing Rapid Prototyping (RP) master models for medical applications (planning fitting, training, education).
- Designing and dynamicaly and statically analyzing medical implants
- Production of bio-compatible implants (casting and direct manufacturing).
- Developing new bio-compatible materials, suitable for RP technologies.
- Case studies of using the RP parts for medical purposes.
- analyzing the costs / benefits of using the RP for medical applications.
- Disseminating the knowledge and results, etc...

Student and teacher mobility, will offer good possibilities for knowledge exchange and development of new teaching strategies that will address the multidisciplinary aspect of the network's topics – cooperation among medical doctors and engineers. Moreover during the mobility people will learn and benefit from new customs in foreign countries and institutes, develop new friendships and consecutively improve their habits, working principles and knowledge.
Students (under- and post-graduate) will benefit by having a chance to use the large »equipment base« placed over different laboratories of participating universities what will enable them to prepare better final theses.
New contents for interdisciplinary subjects to be taught in the participating institutions will be developed and evaluated during the workshop which will be held between September 15th and 20th in Maribor. The topics will include:
- Rapid Manufacturing – medical applications
- Quality in medical equipment's production,
- ethics in medicine and engineering,
- Reverse engineering of body parts – CT and MRI data conversion and reconstruction of 3D parts, image processing and medical devices,
- Design and design optimization for rapid prototyping
- Dynamic model construction and simulation for the sizing of implants.
- Implantation process – surgeon's view

Title of the project Teaching and Research of Environment-oriented Technologies in Manufacturing
Type of the project CEEPUS
Number of the project CIII-RO-0013-07-1112
Main investigator Karol Velíšek, Professor, PhD.
Time period of the project 2011 - 2012
Annotation of the project Student mobility - professional achievements - language knowledge - previous or current concerns regarding the aspects of environmental protection and modern technologies in this field
Short Term Student mobility - scientific achievements in the field of environment aspects of manufacturing technologies - language knowledge - publications in the field of network topics - previously contacts between partners
Teacher mobility - professional and teaching achievements in the topics of network; - language knowledge - leading of diploma works and philosophical degrees in this field - previously contacts between colleagues from partner's departments - participation at scientific conferences, workshops organized by partners - comon specific activities with PhD students.
The coordinator of the network and the representatives of the partner institutions establish a working procedure at the beginning of the academic year. The working procedure contains the objectives of the activities, the responsibilities of each partner and deadlines. The coordinator of the network checks the fulfillment of each activity according to the previously elaborated working procedure. At the end of the academic year, the coordinator writes a final report on the basis of the partial reports submitted by the participants and summaries received from the teachers and students which were involved in this program. Also we intend to built one particulary web-page of the network in which we planed to present the main aspects of activities from network. Publishing the main results at Scientific Conferences organised by partners.

Title of the project Implementation and utilization of e-learning systems in study area of production engineering in Central European Region
Type of the project CEEPUS
Number of the project CIII-RO-0202-05-1112
Main investigator Karol Velíšek, Professor, PhD.
Time period of the project 2011 - 2012
Annotation of the project

Access to lifelong learning can be solved using the e-learning systems. Information and communication technologies (ICT), properly used, contribute to the quality of education and training and to Europe's move to a knowledge-based society.
The universities have to know to respond on global problems and to be prepared to educate the specialist. Many of the new methods used in production engineering and in CA systems and technologies as rapid machining, virtual prototyping, CAD/CAM/CAE/CMMS are based on "e" (electronic) activities because reduce the time (time is becoming rapidly the most strategic topic of companies) and increase the quality of products without increasing the costs.
E-learning comprises all forms of electronically supported learning and teaching. E-learning applications and processes include Web-based learning, computer-based learning, virtual classroom opportunities and digital collaboration. Content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM. It can be self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio.
The main action lines of the e-learning systems in study area of production engineering are based on

- Information and Communication Technologies (ICT):
- Digital literacy as e-books, e-papers, e-courses, etc.
- The teaching process must be based on e-presentations (slide-shows, papershow system, etc.).
- Development of virtual laboratories especially in case of equipments with large dimensions.
- Development of simulations for improves the functions parameters.
- Using the virtual tests for find the possible errors in design.
- Using the simulations for improve the maintenance and reliability of machines and equipments.
- Implementation of virtual laboratories specific for each University and realization of virtual laboratory network between Universities
- Implementation of modern communications technologies, especially for the case of lifelong learning, between the students and teaching staff of universities
- Simulations of industrial logistics activities.

All activities concerning the "e" (electronic) are keys for solving of global problems of producers and global problems of universities. It is necessary to solve the legislative frame of common interest and accord the national legislative frame with the European legislative frame.
Joint programs give a good platform for an increase of collaborated universities and using of e-learning systems can increase the efficiency. Therefore the subject of new CEEPUS III network is titled "Implementation and utilization of e-learning systems in study area of production engineering in central european region"
The principal motive is elaboration and implementation of Joint programs in study area of Production engineering based on collaboration agreements between partners. The proposed network wants to develop the existent collaborations agreements between partners (North University of Baia Mare College of Nyíregyháza, Poznan University of Technology, Technical University of Cluj Napoca, St. Istvan University from Godollo, University Politehnica Bucuresti, University of Žilina Technical University in Košice) and to put the bases for the next agreements. All presented activities (organizing of conferences and workshops, seminaries for students and PhD students, support for elaboration and finishing of PhD thesis, excursion) will be hence forward supported and there will be effort to increase their level in framework of Joint programs.

The e-learning initiative of the European Commission seeks to mobilise the educational and cultural communities, as well as the economic and social players in Europe, in order to speed up changes in the education and training systems for Europe's move to a knowledge-based society.

Title of the project Technical Characteristics Researching of Modern Products in Machine Industry (Machine Design, Fluid Technics and Calculations) with the Purpose of Improvement Their Market Characteristics and Better Placement on the Market
Type of the project CEEPUS
Number of the project CIII-RS-0304-04-1112
Main investigator Karol Velíšek, Professor, PhD.
Time period of the project 2011 – 2012
Annotation of the project Market globalization has had an effect on product assortment extension on the market, which brought many benefits to the consumers. They are enabled to buy products of different quality, price, design and terms of delivery. Major manufacturers have received globalization with a great pleasure, because globalization enabled them expansion of the market and all the preferences that follow with this. Small and medium manufacturers are the most affected with globalization, because of presence of concurrents, so they can't place their products anymore in such amount like before, or even they can't do it at all. Due to globalization, they had to reduce their assortment and intensively to develop existent products, so they could become more competitive. All who didn't succeed this, had to change their production program, or simply to close their factories.

The global world brings global problems in industrial production. Economic pressure urges producers to make more customized products of high quality, in smaller series, with shorter lead time and of course, without increased costs. Time is becoming one of the most important point of the companies strategy. Costs are also important. More important is competitive price and the most significant are marketability of manufactured products. Therefore producers look for different ways (new design, modern tools, etc.) to increase a competitive advantage of their products.

In most cases, leading competitors bought all perspective companies (their potential competitors), so they continued to produce, but, after this, different products.
So, if small and medium manufacturers want to stay on a globalized market, they intensively and incessantly must develop their products, apply new technologies and nourish aggressive marketing, because it is the only way to subsist at the market.
When some product is being analysed, we can discuss its aesthetic characteristics (shape, color, style), its technical characteristics (dimensions, mass), its service characteristics (capacity, energy consuption), functional characteristics (principle of functioning), and design (construction and performance way). However, when the product occurs on the market, its market characteristics become very important. It is necessary that manufacturers always have to develop market characteristics of their products in order to encourage potential customers to choose their products. The final selection of the products and producers by consumers is dependent on the market characteristics of the product, ability of marketers and retailers or buyers and sellers to point out those characteristics and use them in forming the prices and other sales aid activities (delayed payments, credit, exchange etc.)
The market characteristics are the following: nature and complexity of the product, specific characteristics, variety of the palette of products, quality, design, price, product brand, image of the product, packaging, production date, distinctiveness and protection of the product, sales brochures and catalogues, marketing support, availability of the product, customer service, timing of product delivery, warranty terms, technical support, service support, etc.
The majority of market characteristics are influenced by the producers themselves, and they have the biggest responsibility for the sales of their own products. However, the role of the retailers is also important, which leads to the conclusion that the sales problem should be tackled with a complex approach, with the full cooperation of all involved parties. This is especially relevant today, when increase of the sales of domestic products is a priority and all the relevant information regarding the quality of the products should be disclosed. Also, it is very important to secure availability of the domestic products supply, keep the public informed of where those products are sold, ensure that they are recognizable in retail outlets, label separately that they are produced domestically, outline the reasons why consumers should choose them over competition, train the sales staff in detail about the advantages of the domestic products and encourage them to present that to the consumers. All of these factors can have a significant influence on the consumers, and in addition to affordable pricing, credit financing, attractive design and good image, they can play a determining role in decision-making regarding the purchase of domestic products by the consumers. It is also important to accentuate high impact of the image of the product, which is dependent on the image of the producer, image of the current customer base, product design image, packaging image, image of the visual graphics displayed on the product and packaging, image and perception of pricing, image of retail outlets, image of the promotional activities, image of the after sales support services etc.
Technical characteristics depend on the nature of the product so that with sports equipment importance is in design, comfort, recognition and price; with household appliances importance is in design, ease of handling, low weight, easy maintenance, low noise and price; with transport vehicles, design, comfort, fuel usage, low emissions and environmental issues; with working machinery, capacity, precision, and the degree of automation; with generators and energy converters, power, and effective utilization which show the degree of perfection of converting the energy. Technical characteristics can significantly improve the market characteristics of the product and such can influence the better placement on the market.
Taking into account all the above mentioned aspects of technical and market characteristics of the products, the following subject of a new research project to be realized within the framework of the CEEPUS program has been proposed:
Technical Characteristics Researching of Modern Products in Machine Industry (Machine Design, Fluid Technics and Calculations) with the Purpose of Improvement Their Market Characteristics and Better Placement on the Market
The necessity of the network cooperation

The universities included in this network have been collaborating with each other, though not always formally, for a number of years. Several partners have experience and achievements in the CEEPUS projects cooperation. CEEPUS project represents a very useful formal way for cooperation between the partner institutions. The network assures an efficient possibility for students and teachers mobility, that contribute to mutual acquaintance and to valuable educational and research programs development. Exchange of knowledge and experience is very important for each university teacher and student. Not only acquisition of necessary information has big significance but also dissemination is characteristic for universities and other scientific institutions. Another important possibility is the possibility to create joint programs of study, common evaluation of diploma and PhD works.

Title of the project Development of manufacturing technologies – new strategies and new challenges in education and research
Type of the project CEEPUS
Number of the project CIII-BG-0614-01-1112
Main investigator Peter Košťál, Assoc. Professor, PhD.
Time period of the project 2011 - 2012
Annotation of the project Time and digital technology are the most strategic topics for companies in order to survive. Nowadays manufacturing is characterized by intensive use of computers, communication and information technologies.
New methods of manufacturing technology, computer aided systems and information technologies, virtual machining are indeed strong tools for solving the global problems. The manufacturers look for tools to improve their enterprise competitiveness - to produce more products with less material, less energy and less waste. Additionally, they have to take environmental considerations. This means that the choice of materials and the designed solution cannot be done on purely technical and economical criteria, but must also take recycling, pollution and disassembly concerns into account.
This new project will allow our future engineers to work more project oriented, and to combine state of the art know-how with theoretical insight. Thus, this project will meet future industrial needs for highly trained professionals in the manufacturing industry. It will be directly linked to technology and innovation across the universities in Central and Eastern Europe.

Title of the project Development of models for numerical simulation and optimisation of unconventional material processing in semi-solid state
Type of the project APVV
Number of the project SK-CZ-0180-09
Main investigator Mária Behúlová, Assoc. Professor, PhD.
Time period of the project 2010-2011
Annotation of the project The project is focused on the design, analysis and optimization of material processing in semi-solid state with the aim to obtain final products with very fine microstructures and unique material properties. The main aim of the project covers the attainment of experimental, model and simulation support for the design and optimization of forming processes in semi-solid state and their application for the production of small products from high-alloyed tool steels. The solution methodology will be based on the close coupling of up-to-date experimental and diagnostic methods with the advanced methods of mathematic modeling and numerical simulation of material behavior in semi-solid state. For this purpose, a unique technical, laboratory and software equipment of both workplaces will be exploited.

NATIONAL PROJECTS

Title of the project Experimental and simulation methods of dynamic analysis of mechatronic subsystems of technological equipments
Type of the project VEGA
Number of the project 1/0256/09
Main investigator Milan Naď, Assoc. Professor, PhD.
Time period of the project 2009-2011
Annotation of the project A mechatronical approach to modelling, analysis, and design of effective modern technological equipment is forced by the inevitable mutual integration of mechanical, electrical, electronic and control subsystems, as well as by their integration with the terminal technological process. This type of integration calls for development of methods for analysis and synthesis of energetic and information flow among subsystems with regard to efficient satisfaction of the functional objectives of the complete technological system.

Title of the project Intelligent assembly cell
Type of the project VEGA
Number of the project 1/0206/09
Main investigator Karol Velíšek, Prof. h. c. Professor, PhD.
Time period of the project 2009-2012
Annotation of the project A flexible and intelligent assembly cell concept includes a new solution for how to create structures of assembly systems. No external industrial robot is used for manipulation or for assembly. Intelligent behaviour of the system will rely on monitoring of important parameters of the system and there will also be monitored information about the system's interaction with its surroundings. Surrounding interaction information will be taken with many advantages, such as bringing flexible reactions of the system to manufacturing changes, building up the area of saving, lowering building costs, and higher use effects of the whole device.

Title of the project Clamping fixtures in intelligent production systems
Type of the project VEGA
Number of the project 1/0163/10
Main investigator Peter Košťál, Assoc. Professor, PhD.
Time period of the project 2010-2011
Annotation of the project A new generation of clamping fixtures presents systems of clamping fixtures that are applicable for use in intelligent production systems. A distinctive effect of incidental time reduction is possible to achieve by automated clamping and manipulating operations or by a defined degree of clamping fixture intelligence. It is also possible to achieve a relevant increase of production process effectiveness in the present increase of process quality by use of fixture clamping.

Title of the project Analysis of non-equilibrium thermal, metallurgical and stress-strain processes in production technologies involving rapid cooling and solidification of metallic materials.
Type of the project VEGA
Number of the project 1/1041/11
Main investigator Mária Behúlová, Assoc. Professor, PhD.
Time period of the project 2011-2013
Annotation of the project Rapid cooling and solidification of materials in non-equilibrium conditions is used in several advanced technologies of production and processing of metallic materials. The research in the framework of the project will be focused on experimental investigation, numerical simulation and analysis of non-equilibrium thermal, metallurgical and stress-strain processes in technologies of preparation of rapidly solidified powders using inert gas atomization of melt, material forming in semi-solid state and also the laser welding and surface heat treatment. The main aim of the project is identification of common characteristics, phenomena and non-equilibrium processes leading to the development of refined microstructures in the conditions of rapid cooling and solidification of materials. In the theoretical field, the project should contribute to the explanation of physical and metallurgical reasons and mechanisms of meta-stable structures development in the high-alloyed materials on the base of iron and aluminium.

Title of the project Numerical,symbolic and experimental analysis of nonconservative mechanical systems
Type of the project VEGA
Number of the project 1/0389/11
Main investigator Tibor Nánási, PhD.
Time period of the project 2011-2013
Annotation of the project Undesired vibration and excessive noise is persistently accompanying even the operation of the most advanced technological systems. Proposed project is oriented on development of analytical, numerical and experimental methods of analysis of complex mechanical systems with non-conservative couplings. The aim is to create suitable models of non-conservative systems and to solve corresponding vibro-acoustical problems by those methods, which in take into full account the non-self-adjoining nature of the boundary problems. Such approach may be found in contradiction with common practice when the non-conservative problems are, using artificial assumptions, transformed to a form which can be approached by conservative methods. The project involves also design and building of equipment for measurement of damping as function of frequency and temperature as well as of equipment allowing to non-conservative loading of the structure under consideration.

Title of the project Application of innovative layers and coatings for reconstruction of tribologicaly loaded surfaces.
Type of the project VEGA
Number of the project 1/0390/11
Main Investigator Eva Labašová, PhD.
Time period of the project 2011-2013
Annotation of the project The operation of technical systems causes natural variation of contacting surfaces of their interacting components. Changes are due to the wear of surfaces and in many cases, tribological degradation of the loaded surface occurs in consequence of unstable operating processes. Changes in geometry of tribological surfaces (TS) generate undesired power transfers, which cause continuing degradation of TS element, possibly leading to damage. Early diagnosis of the incorrect function of TS and its post-reconstruction by innovative layers causes renewal of the correct tribological function of the surface, prolonged element life time and restores the correct operational state of the technical system. The aim of the project is to analyze the properties of tribological layers in terms of material and geometrical parameters. Stress-strain states of loaded TS with innovative layers will be examined by methods of computational mechanics. The results of computer analysis, of the wear process of lifetime will be verified experimentally.

Title of the project Laboratory of Production System program Controll
Type of the project KEGA
Number of the project 3/7131/09
Main investigator Peter Košťál, Assoc. Professor, PhD.
Time period of the project 2009-2011
Annotation of the project The Laboratory of Production Systems Program Control will be used for automated program control learning. In this laboratory real industrial parts for automation (PLC, sensors, stepper motors, servo motors and others) will be used. Students in this laboratory will learn about automation in the field of flexible production, and they will get new experiences about automated production works. They will get key competencies needed by industrial praxis from graduates of technical universities. In the frame of this project new studying materials about automated program control systems will be created.

VISITS OF STAFF MEMBERS TO FOREIGN INSTITUTIONS

Employee	State
Babalová Eva, Ing.	Austria
Baumgartner Matej, Bc.	Russia
Behúlová Mária, Assoc.Prof.RNDr. , CSc.	Czech Republic, Brazil, Austria, Spain and Canary Islands
Behúlová Mária, Assoc.Prof.RNDr. , CSc.	Brazil
Delgado Sobrino Daynier Rolando, Ing.	France
Ďuriš Rastislav, Ing. , PhD.	Russia
Holubek Radovan, Ing.	Hungary, Czech Republic
Kerak Peter, Ing.	Romania
Košťál Peter, Assoc.Prof.Ing. , PhD.	Hungary, Germany, Romania, Honkong, Poland
Krajčová Katarína, Ing.	Romania, Austria
Labašová ???Eva, Ing. , PhD.	Poland
Naď Milan, Assoc.Prof.Ing. , CSc.	Russia, Czech Republic
Nánási Tibor, Ing. , CSc.	Czech Republic
Novák Stanislav, Bc.	Russia
Rolník Ladislav, Bc.	Russia
Ružarovský Roman, Ing. , PhD.	Hongkong
Šebeňová Silvia, Ing.	Romania
Španielka Ján, Ing.	Austria
Velíšek Karol, prof.Ing. , CSc.	Germany, Hungary, Czech Republic, Honkong, Romania, Austria

MEMBERSHIP IN SLOVAK PROFESSIONAL ORGANISATIONS

Slovak Acoustical Society
Tibor Nánasi, PhD.
Milan Nad', Assoc. Prof. PhD.

Slovak Welding Society
Helena Kraváriková, PhD.

Technical Commission 21 SÚTN Bratislava
Tibor Nánasi, PhD.
Milan Nad', Assoc. Prof. PhD.

Slovak Associations of Mechanical Engineers
Karol Velíšek, Professor, PhD.
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František Pecháček, Assoc. Prof. PhD.

Technical Commission 68 SÚTN Bratislava
Milan Nad', Assoc. Prof. PhD.

Expert Group for Chemistry and Physics of Solids
Mária Behúlová, Assoc. Prof. PhD.

Technical Commission 81 SÚTN Bratislava
Bohumil Taraba, Assoc. Prof. PhD.

Technical Commission 57 SÚTN Bratislava
Bohumil Taraba, Assoc. Prof. PhD.

Technical Commission 58 SÚTN Bratislava
Bohumil Taraba, Assoc. Prof. PhD.

MEMBERSHIP IN INTERNATIONAL PROFESSIONAL ORGANISATIONS

Society of Machining and Machine Tools
Karol Velíšek, Professor, PhD.
Peter Košťál, Assoc. Prof. PhD.
František Pecháček, Assoc. Prof. PhD.
Marcela Charbulová, PhD.

OIAV - ÖSTERREICHISCHER INGENIEUR - UND ARCHITEKTEN – VEREIN
Karol Velíšek, Professor, PhD.

The Czechoslovak Association for Crystal Growth
Mária Behúlová, Assoc. Prof. PhD.

European Acoustical Association
Tibor Nánasi, PhD.

IACSIT - International Association of Computer Science and Information Technology
Peter Košťál, Assoc. Prof. PhD.
Andrea Mudriková, PhD.
Mária Behúlová, Assoc. Prof. PhD.

IIIS The International Institute of Informatics and Systemics
Nina Danišová, PhD.

WASET - World Academy of Science, Engineering and Technology, Scientific and Technical Committees
Peter Košťál, Assoc. Prof. PhD.

SCIEI - Science and Engineering Institute
Mária Behúlová, Assoc. Prof. PhD.

PUBLICATIONS

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INSTITUTE
OF INDUSTRIAL ENGINEERING, MANAGEMENT AND QUALITY

Photo by Milan Maršnek

INSTITUTE OF INDUSTRIAL ENGINEERING, MANAGEMENT AND QUALITY

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Staff

- Professors: 4
- Assoc. Professors: 12
- Senior Lecturers: 13
- Research Fellows: 5
- PhD Students: 66

ACTIVITIES AT THE INSTITUTE

Date	Title of event, activity characterising the life at the Institute in 2011
25th of February 2011	Ending of Employment at the Institute of the Industrial Engineering, Management and Quality – Peter Ončák, MA (researcher in the project management field).
11th of March 2011	Public Habilitation Lecture and the Defence of Habilitation Thesis – Dagmar Cagáňová, Assoc. Prof. Ph.D.
21st - 27th of March 2011	Monitoring of Customer Satisfaction in School Canteens and Snack Bars at the Faculty of Materials Science and Technology – made by Ondrej Neslušan, Jana Turčanová and Jana Urdziková, Ph.D.
29th of March 2011	Appointed to the Post of Vice-Rector for Education of the Slovak University of Technology in Bratislava – František Horňák, Assoc. Prof. Ph.D.
07th of April 2011	The 5th year of the Student's Research Papers - in section "Industrial Engineering, Management and Quality" 24 students took place.
12th of April 2011	Seminars and Lectures of Polish Guests - Krzysztof Witkowski, Ph.D. (Erasmus Mobility Program, Cooperation between Faculty and University, Distribution Logistics, Quality of Logistic Services) and Sebastian Saniuk Ph.D.

	(Quality Aspect of Product Modelling in Manufacturing) from the University in Zelena Gora, Poland.
12th - 13th of April 2011	The 4th International Scientific Seminar "New Trends in Quality Management" (in cooperation with the Slovak Society and with exhibition of AUTOCLUSTER project).
12th - 13th of April 2011	Professor of economic studies and professor of technical science professor Stanisław Borkowski from the Czestochowa University of Technology, Faculty of Management, Institute of Production Engineering visited Institute of Industrial Engineering, Management and Quality during the 4th International scientific seminar "New Trends in Quality Management" on the 12th - 13th of April 2011. During the meeting the possible partnership in international projects, lecturers and students exchanges and joint publications in the area of production and quality management, innovations in industry, principles of Toyota management in production and services, human resources management in industry and institutions, clients and workers satisfaction.
14th of April 2011	The excursion in the Bekaert Hlohovec AS for the students, junior lectures, senior lecturers from the institute and foreign guests from the Poland.
2nd of May 2011	Dagmar Cagáňová, Ph.D. nominated as Assoc. Prof. in Industrial Enginnering.
11th May 2011	Dagmar Cagáňová, Assoc. Prof. Ph.D. (employee's part) and Jana Samáková, MA (student's part) became members of the Academic Senate of the Slovak University of Technology in Bratislava.
15th – 17th of May 2011	The 6th Annual International Doctoral Seminar in Smolenice. Also part of the Organizing Committee, Chairs and participants were the Ph.D. students, researcher, junior lecturer and senior lecturer from our institute.
17th of May 2011	The lecture of prof. Dr. Dr. h. c. Peter Joehnk, Administrative Director of Helmholtz-Zentrum Dresden-Rossendorf (Knowledge Strategy).
31st May 2011 – 01st of June 2011	"Master Thesis Award" within the 11th international conference "Central European Forum on Maintenance 2011" under the auspices of the Ministry of Economy of the Slovak Republic – the winner became Marián Ondriš, MA with the topic "The Proposal for Increasing Effectiveness of Maintenance Management System in ESTAMP Slovakia s.r.o., Zlaté Moravce". (Supervisors: Milan Richter, MA. and Juraj Drahňovský, Ph.D.)
9th of June 2011	Summary Meeting 2011 of the Institute of Industrial Engineering, Management and Quality Employees in Rybársky dvor, Piešťany, Slovakia.
20th of June 2011	Professor Nigel Holden from the UK, world-renowned expert in the field of intercultural and knowledge management, visited our faculty on the 20th of June 2011. He was met by the Vice-Dean of the Faculty –assoc. prof. Peter Schreiber, PhD. The main talks were conducted at the Institute of Industrial Engineering, Management and Quality in the presence of assoc. prof. Dagmar Cagáňová, assoc. prof. Ing. Miloš Čambál and assoc. prof. Jana Šujanová. During the meeting the possible partnership, especially involving international projects, especially FP7, were discussed. Professor Holden gave positive comments about the research at the Institute, where common areas for mutual cooperation were found. Cooperation with Professor Holden was established last year in Portugal, at Porte ECKM 2010 (European Conference of knowledge management), where Professor Holden was invited to lecture and the members of UPMK and the faculty of the management presented their contributions.
22nd – 26th of August 2011	Training of the Jadrová a vyraďovacia spoločnosť, a.s., Bratislava Employees - Basics of the Project Management.
8th of September 2011	Zdenka Gyurák Babeľová, Ph.D. nominated as new Vice-Director of the Institute of Industrial Engineering, Management and Quality for Pedagogy.
12th of September 2011	Successful participation of the Institute employees in the "Sports Day of the Faculty of Materials Science and Technology Employees" in volleyball, table tennis, swim, circling hoop on the waist, sit down – lie for 30 sec., kicking the ball into the empty net, passing the ball in pairs, strike the ball through the net and in other sporting disciplines.
30th of September 2011	Edition of the scientific periodical publication „Managers Forum", No. 01/2011" with the topic QUALITY.
1st – 10th of October 2011	Ph.D. Competition on Innovation in the Automotive Sector 2011 - the winner became Martin Beluský, MA - Marián Hodulík, MA with the topic "Optimization of Material Flow Innovation in the Automotive Sector".
10th – 14th of October 2011	Training of the Jadrová a vyraďovacia spoločnosť, a. s., Bratislava Employees - Basics of the Project Management.
16th – 21st of October 2011	Foreign Excursion of the Ph.D. students of the Faculty of Materials Science and Technology in Trnava to Norway within the project "Development of teaching qualifications of MTF STU doctoral students" – eight Ph.D. students from the Institute of Industrial Engineering, Management and Quality participated in it.
19th – 21st of October 2011	The 3rd international science conference TEAM 2011 (with cooperation TEAM Society) and 17th year of the science conference CO-MAT-TECH 2011 - part of the Organizing Committee, Scientific Committee and participants were the Ph.D. students, researcher, junior lecturer and senior lecturer from our institute.
19th – 21st of October 2011	Visiting of the Krzysztof Witkowski, Ph.D. (via Erasmus program presented the "Reverse Logistics Processes in Supply Chains of Plastics a Computer Aided Systems of Production Flow Planning") and Sebastian Saniuk Ph.D. from the University in Zelena Gora, Poland. They also participated in the 3rd international conference TEAM 2011 and CO-MAT-TECH 2011.
21st – 31st October 2011	Master and Bachelor Students Competition on Innovation in the Automotive Sector 2011 - the winner became Roman Viden, BA. with the topic "Rapid Prototyping Technology as Used on the Innovation Process in Automotive Industry".
29th of October – 05th of November 2011	Internship in the UGATU UFA and ISEI UNC RAN UFA in Russia – Katarína Drieniková, MA; Tomáš Ňaňo, MA; Ľubomír Šmida, BA and Peter Sakal, Prof. Ph.D.
15th – 18th of November 2011	AUTOCLUSTERS "AUTOMOTIVENETS" Small Projects event: "Ph.D. Students Competition on Innovation in the Automotive Sector – Winners day" in Trento, Italy – Miloš Čambál, Assoc. Prof. Ph.D.; Dagmar Cagáňová, Assoc. Prof. Ph.D.; Martina Jakábová, Ph.D.; Petra Marková, Ph.D. and Martin Beluský, MA.
28th of November 2011	Appointment of Professor – Jarmila Šalgovičová, Assoc. Prof. Ph.D. in field: Mass Media Studies.
28th – 29th of November 2011	AUTOCLUSTERS Project Meeting Ljubljana in Slovenia – Jana Šujanová, Assoc. Prof. Ph.D. and Zdenka Gyurák Bábeľová, Ph.D.
30th November – 2nd of December 2011	European Alliance for Innovation: EUROPEAN FORUM FOR INNOVATION 2011 - Dissemination and Personal Recognition – Dagmar Cagáňová, Assoc. Prof. Ph.D. and Jana Šujanová, Assoc. Prof. Ph.D.
12th – 13th of December 2011	Christmas Meeting 2011 of the Institute of Industrial Engineering, Management and Quality Employees in Kočovce, Slovakia.

EDUCATION AT THE INSTITUTE

STUDY PROGRAMMES

- Industrial Management
- Production Quality
- Production Quality Engineering

Number of the students (till 30.10. 2011) on the study programmes guaranteed by the institute: 1.034
Number of the graduates (2010/2011) on the study programmes guaranteed by the institute: 275

GRADUATE PROFILE

BACHELOR PROGRAMMES (Bc.)

Industrial Management
The graduate understands social and technical systems integrating human resources, information, materials, devices and processes within the complex life cycle of products and services. He has fundamental knowledge of natural sciences, technical, technological and humane disciplines, as well as knowledge of informatics and specific knowledge of industrial engineering oriented on plant management, economy, production management, marketing, accounting etc., with emphasis on practical application of the aforementioned knowledge. He is able to apply gained knowledge and skills in practice, mainly as a team-leader or team-member in the middle management. He will also be able to set and run small businesses or companies.

Production Quality
The graduate understands the issues of quality management in industrial plants and quality management systems, application of basic tools and techniques of quality management, including statistical methods. He gains detailed knowledge of quality management, basic knowledge of natural science disciplines (mathematics, physics), machine technologies and management of machine production. General knowledge of industrial plant management, together with basic computer literacy, will create a supposition of successful communication with research staff as well as management and organisation structures staff in economic organisations. He achieves ISO standards skills mainly in quality management. He is able to collaborate in operating quality management systems and process related documentation and other regulation documents. He will be employed as a manager responsible for quality assurance in individual structures of an industrial plant, or an expert in quality management.

MASTER PROGRAMMES (MSc./ENG.)

Engineering of Production Quality
The graduate understands basic technological and managerial issues of an industrial plant and servicing company, as well as designing, maintaining and implementing quality management systems. He will master the subject matter of international standards for quality management and intellectual property. He has deep knowledge of natural sciences and specific areas of plant management, particularly in designing maintaining, implementing and improving quality management systems, total quality management /TQM/ approaches, as well as modern tools and methods of quality management. He is able to develop and implement quality management systems. The graduate may be employed in several areas: industrial companies, services, state administration and at all positions where synergy of management, technical knowledge and skills is needed.

Industrial Management
The graduate gains complete university education focused on planning, designing, implementing and managing production systems and also creativity development in engineering projects or processes. He has deep knowledge of natural sciences, technical, technological disciplines and humanities with expertise in industrial management, company management, production management, plant economy, theoretical knowledge of operation and system analysis, logistics, personnel, investment, finance, innovation, information management, etc. The graduate is ready either to continue his study in a postgraduate degree and develop his research career in industrial management, or to enter the job market immediately. He will successfully perform as a middle or top manager in organisations within various sectors of industry requiring the synergy of managerial, economical, technical and soft skills and knowledge.

POSTGRADUATE PROGRAMMES (PhD)

Engineering of Production Quality
The graduate achieves the complex PhD education in Production Quality focusing on quality management skills. He knows the scientific methods of research and development to acquire knowledge. He is able to develop creative methods in quality management, integrated and complex quality management, to design and operate social-technical and management systems in different types of organisations, to innovate processes and to improve the quality management. He is able to analyse the market, to analyse customers, to design and evaluate projects for an organisation. The graduate will be mainly employed as a top manager in different organisations, as a consultant for consulting companies and at universities in scientific research works and education work.

Industrial Management
The graduate gains complex university education in Industrial Management oriented on the knowledge development in the field of managerial activities, tools and methods applied in various types of companies. He has mastered research and development methods of gaining knowledge autonomously. He will be able to develop creative methods in the field of industrial management and design, provide social, technical and managerial systems in various types of companies, accelerate the development of innovative processes, and apply various management improvement approaches. The graduate will be successful in the top managerial positions in various types of organisations, consulting companies and universities, in both research and teaching careers.

LIST OF SUBJECTS GUARANTEED WITH THE INSTITUTE

Accounting
Bachelor Project
Bachelor Thesis
Basics of Ergonomy
Basics of Quality Management
Business Economy Basics
Business Economy I, II
Business Strategies for Small and Medium-sized Enterprises
Calculation and Prices
Computer Aided Quality Management
Controlling
Customer Protection and Complaint Management
Designing and Management of Manufacturing Processes
Masters Project
Masters Theses
Dissertation Thesis I, II, III, IV, V, VI
Economy
Economy of Non-metallic Materials Production
Ergonomy
Exact Methods in Managerial Decision making
Financial and Investment Management
Financial Management
Human Resource Management
Change Management
Industrial and Intellectual Property of the Firm
Information Management
Information Technologies II
Innovation Management
Integrated Management
Intercultural Management
Labour Rationalization Basics
Logistics
Management
Management Basics
Management Information Systems
Management of Investment Progresses
Management of Projects
Managerial Ethics
Marketing
Marketing Management
Market Research and Monitoring of Customer Satisfaction
Marketing Strategies
Monitoring of Customer Satisfaction
New Trends in Complex Quality Management
Operation and Maintenance of Machines
Operational Research
Pedagogical Activity I, II, III, IV, V, VI
Personnel Management
Practice
Production Management I, II
Project Management
Project of Conformity Assessment
Project and Process Management in Quality Management
Quality Audits
Quality Management Systems
Quality Management Case Studies
Research Thesis I, II, III, IV, V, VI, VII
Standardization, Certification, Conformity Assessment
Statistical Methods
Statistical Methods of Quality Control
Statistical Methods in Process Improvement
Strategic Management
Supply and Distribution Based Logistics
Tax Management
Tools and Techniques of Quality Management
Total Quality Management

GRADUATE THESES

BACHELOR THESES

Alakšová, Diana:	Proposal of measures to improve the evaluation system of the employees
Bednáriková, Dagmara:	The proposal for efficiency improvement of receivables management process in the company PSJ Hydrotranzit, a.s.
Benčura, Ján:	Proposal application of voluntary environmental instruments to reach a sustainable development of SMEs in Slovakia
Bieliková, Eliška:	Review of human resources in quality management system in selected organizations
Bínovská, Lucia:	Proposal to improve the planning, implementation and evaluation of product audit in ZF Sachs Slovakia Ltd.
Bírová, Jana:	Economic and noneconomic motivation as a tool to increase productivity
Bobák, Štefan:	Monitoring machine capability SMD 6 in the process of production control panels
Bobot, Jozef:	Proposed measures in marketing when launching a new product to market in the division Výroba of KONŠTRUKTA – Industry, Joint – Stock Company
Bučka, Michal:	Proposed measures to improve teamwork in the company MTS, spol. Ltd.,
Bučková, Paula:	Proposal for a method of identifying key kompetencies of managers of industrial enerprises
Cibulka, Róbert:	The file design of arrangements for increasing work motivation in manufacturing process in the company, Faurecia Slovakia, s.r.o.
Černák, Tomáš:	Improving proposals of selected logistics processes of the GLOBO EASTERN EUROPE enterprise
Černáková, Zuzana:	The proposal to improve corporate social policy as an instrument of individual and collective development of human resources
Červená, Linda:	Work out of proposal for implementation of MSA in production process of rope wire for spiral strands in Bekaert Hlohovec, a.s.
Čulák, Miloš:	A proposal of measures for the implementation of the principles of JIT (Kanban) in planning and management of production processes in the industrial undertaking
Daňo, Matej:	Proposal of measures for improvement production management in the corporation DELTA ELECTRONICS (SLOVAKIA), s .r. o., Dubnica nad Váhom.
Dianová, Ivana:	Suggestion of Recommendations for Expert Choice Software Using in field of Corporate Social Responsibility
Dohnanská, Alena:	Proposal of measures for implementing environmentally oriented BSC in Holcim (Slovakia)
Drgoň, Michal:	Suggested file of operations to improve the motivation of workers in Bekaert a.s. Hlohovec

Drobúl, Roman:	Suggestion of model of employee performance management of LKT Ltd., Trstená
Ďurďáková, Lívia:	Proposed measures in the field of management education masters in business Železiarne Podbrezová, a. s.
Ďuriš, Róbert:	Proposal measures for improving the employee recruitment and selection of employees in Petit Press a.s. Bratislava
Fančovičová, Renáta:	Analysis of current status of ensuring of quality in buying process in company CellQoS, a. s
Federičová, Jana:	Proposal of measures for improvement of processes of incoming and continuous inspection of control at ZF Levice, s.r.o.
Florianová, Vladimíra:	Application of measures of generalization price making in company nes nová dubnica s.r.o.
Fogel, Peter:	An analysis of current utilization of partnerships with suppliers in the organization of the PCA Slovakia, s.r.o.
Foltín, Peter:	The proposal of measure to implement the principles of JIT (kanban) in planning and management processes of the enterprise RONSON PLASTICS Ltd. Myjava
Forner, Ján:	Motion of arrangements for raising the effectiveness of inventory management with the connection to functioning of Swedwood Slovakia, s.r.o., branch Spartan, store system
Furdeková, Michaela:	Proposed measures to improve work motivation of employees in company LKT, Ltd.
Galba, Stanislav:	Survey about quality assurance in production processes in selected corporations
Gáliková, Ivana:	A proposal for improving the quality assurance process in selected products in ŽOS Trnava, a.s.
Giertlová, Michaela:	Proposed measures to improve the use of marketing tools in business
Habala, Daniel:	Suggestion of measures needed to increase the efficiency of selected logistics operations by using tools of lean in company HANIL E-HWA AUTOMOTIVE SLOVAKIA, s.r.o.
Haladová, Milena:	Proposal of measures to improve recruitment and selection of employees in the company TOMA Industries s.r.o.
Hanuska, Emil:	Proposed measures to improve the supply company in Bohus, p. r. o., Závadka over Hronom
Hečková, Andrea:	A blueprint of measures for efficiency of inventory management in the company ZF Boge Elastmetall Slovakia, a. s. Trnava
Heimlich, Michal:	The proposal of arrangements to improve the sales process in the company AGRO-MOVINO, spol. s r.o.
Herdová, Eva:	Blueprint of arragements for improvement of system of motivation in company JMT SK, s.r.o.
Holotová, Zuzana:	Draft of the measures to improve the acquisition selection and recruitment in the company Cemmac, a.s.
Horehájová, Mária:	The proposal of arrangements to reduce shutdowns of railway carriages in SLOVNAFT, a.s.
Horváth, Ľuboš:	Proposed measures to streamline the activities of selected activities of the transformation process in Matyšák Wine Company, Ltd. Pezinok
Hrašna, Pavol:	The analysis of handling costumer complaints and consumers disputes in commercial companies
Hromada, Ondrej:	Proposal of basic caution of ergonomics rationalization in company Faurecia Slovakia s.r.o., Hlohovec
Chrvalová, Veronika:	The proposal of improvements for adaptation program of new employees in ŽOS Trnava, a,s.
Ivanovičová, Veronika:	Economical and uneconomical motivators as tools for increasing work productivity
Jančulová, Jana:	Submission of measures to improve marketing communication tools of Rajec trade mark in Kofola Inc.
Jarabová, Dominika:	The proposal of measures to increase productivity by 30% to the production line A in company ELEKTRONIKA SLOVENSKO, a.s.
Jurík, Lukáš:	Proposal of measures for application of AHP method in risk and crisis management in the context of CSR for SME in Slovakia
Kadlec, Marek:	The economic and uneconomic stimulus like an instrument of increases productivity of labour
Kadlečík, Matej:	Proposal for improvement in employee recruitment and selection in the company Foxconn Slovakia, spol. s r.o.
Kašníková, Kristína:	The proposal of measures to improve employee evaluation system in company Vetter Slovakia, p.c.
Kaštýl, Martin:	The proposal of arrangements to improve employee motivation system in the company KNOTT, spol. s r.o., Modra
Keher, Igor:	Suggestion of measures for improving human resources marketing in company ENERGOCLIMA spol. s r.o.
Klokner, Patrik:	Analysis of statistical process control in weaving and tracking capability of the manufacturing equipment LIBA in DIPEX, spol. s r.o.
Kmec, Milan:	A proposal for improvement of employee motivation system provision in Inergy Automotive Systems Slovakia, s.r.o.
Koníčková, Veronika:	Proposal of measures to improve staff appraisal system in the Slovak power company, a. p.
Kopták, Michal:	Proposition to Introduce a Lean Manufacturing into the Surface Treatment Process of Materials in the Company Elektrovod Žilina, Corp.
Kosnáčová, Petra:	Proposal to improve the process of measuring and monitoring the product Cup Holder in the company FREMACH TRNAVA, s.r.o.
Kostolanský, Marek:	Identification and design of core managerial competencies in industrial company Holcim a.s.
Kostrejová, Katarína:	Proposal for improvement of motivational system in a company RPC Bramlage Veľký Meder s.r.o.
Krátky, Viktor:	Draft of measures to support system of education of employees in Danubius, spol.s.r.o. Company
Krilek, Michal:	A Survey of improvement methods in quality management and its uses in selected organizations
Kubala, Lukáš:	The application of statistical acceptance in business practice
Kucmerová, Veronika:	The Proposal to Streamline the Personal Work in Company of PEZA, a.s., Levice
Kučera, Milan:	Proposal for improvement of motivational system in terms a company Motory International s.r.o. Nové Zámky
Kucharovičová, Jana:	The draft measures to improve corporate culture in a company INA Skalica spol. s r.o.
Kureková, Michaela:	Draft measures to improve marketing communications in Železiarne Podbrezová a. s.
Kútny, Ivan:	Analysis of the current state of integrated management system in ISTROENERGO GROUP, a.s. Levice
Lehutová, Monika:	Measures proposal for improvements in work motivation in production process in the VUJE a.s. company
Lešnof, Ivan:	The application of basic instruments to beating up the quality of products in Volkswagen Slovakia, company limited by shares
Límová, Alena:	Actions proposal for improving the management of receivables system in the company Letecké opravovne Trenčín, a.s.
Límová, Eva:	Proposed measures for improvement of financial stability of the Trens, a.s. company in Trenčín
Majáková, Monika:	Evaluation of finance source possibilities in the company Ingsteel, spol. s r.o., Bratislava
Majerčík, Marek:	Streamlining the System of Evaluation of Work Performance of Workers,
Maliariková, Jana:	Application of actions to improve further education system of employees in business C.E.P. Scherdel Pružiny, spol. s r.o.
Medovič, Pavol:	Proposal for improving working incentives in the manufacturing process at Slovenské elektrárne, a.s. Mochovce

Melicherová, Veronika:	Suggestion of the measures for using the financial analyses to support the financial management of PFS a.s. company
Micov, Ľubomír:	Analysis of the dealing with complaints, claims and disputes dissatisfied customers in Emerson, a.s.,
Mihalovičová Žáková:	Proposed measures to reduce employee turnover in business STREIT TRNAVA, s.r.o.
Mináriková, Adriana:	Proposal measures to improve in selected areas of logistics in company Fibra s.r.o., Šahy
Molnár, Juraj:	Verifying the capacity of the three-dimensional measure apparatus WENZEL in PCA Slovakia s.r.o. in Trnava
Morafko, Imrich:	Proposal for Improvement of the Rationalization of Material Flow in SAMSUNG Electronics Slovakia Ltd
Mračna, Tomáš:	Draft measures for the improvement of work motivation in the manufacturing process in the company Protherm Production s.r.o.
Nádaská, Michaela:	The current state analysis of quality assurance in the purchasing process in the company I. D. C. Holding a. s.
Nagy, Vladimír:	Proposal of training program for the position of electrician working in Slovak Electric, Inc. plant Mochovce
Nemec, Matej:	Analysis of the monitoring capability of the injection machine ENGEL in FREMACH TRNAVA, s.r.o.
Neslušan, Ondrej:	Research of application of Total Quality Management in the organizations that attended to the National Quality Award of the Slovak Republic
Nižňan, Andrej:	Proposal for a methodological solution to the financial analysis for small business
Pechová, Lenka:	Proposed measures to prepare personnel in the company Continental Matador Rubber, sro Púchov in environmental management in the context of the strategy for CSR
Petrák, Michal:	The proposal set of measures to streamline internal directives for accounting in the company ISS Facility Services spol. s r.o.
Pikusová, Silvia:	Proposal of actions for complaints management improvement in company ZF SACHS Slovakia, a.s.
Pitvor, Štefan:	Proposal of measures to streamline the production logistics management in the enterprise Plastiflex Slovakia spol. s.r.o.,
Pluhár, Marián:	Draft measures to improve the selection and acquisition employees in the company Linde Material Handling Slovenska Republika s.r.o.
Poláčková, Simona:	Proposals for measures to improve the system of recruitment and selection of workers in the enterprise VETROPACK NEMŠOVÁ Ltd.
Poláková, Zuzana:	Proposal of the new layout workplaces to section Post process in company Delphi Slovakia, Ltd.
Polláková, Katarína:	Analysis of the approaches to evaluation of the employee education in industrial enterprise in selected region in Slovakia
Priesol, Richard:	The measures submission to improve the adaptation program of employees in the company ZF Boge Elastmetall Slovakia, a.s.
Pristáč, Šimon:	Proposal for the improvement of corporate culture in METAL Design Slovakia, a. s.
Procházka, Maroš:	Proposal for measures to improve the system of recruitment and selection of employees in company Foxconn Slovakia, spol. s r.o.
Reháková, Zuzana:	Proposal of Measures to Develop the Competence of Project Managers in the Manufacturing Companies in Slovakia
Remenárová, Kristína:	The proposal of the current state of motivation system at I.D.C. Holding, a.s., o.z. Pečiváre Sereď
Remenárová, Lenka:	Návrh opatrení na zdokonalenie procesu získavania a výberu zamestnancov v spoločnosti EKOLAS, s.r.o.
Rozenberg, Martin:	Proposal for measures to improve the education of employees in Sapa Profiles, Inc.
Rozkošová, Beáta:	Evaluation of the possible sources of financing at Slovenské lodenice Komárno, Inc.
Selecká, Jana:	Concept of main ergonomical rationalization measures in selected division of Emerson a. s., Nove Mesto nad Váhom
Simonicsová, Silvia:	Proposed measures to improve the education of employees in terms of Heineken Slovakia Inc. Hurbanovo
Sokolovská, Barbora:	Identification and proposal of improvements for key competencies of employees in company ZF SACHS Slovakia, a. s.
Stachová, Miroslava:	Proposal of application some basic tools of quality management in Hansol Technics Europe s.r.o.
Strašifták, Matej:	Disquisition actually aspect Economic valuation of system of quality management implementation in organizations
Suchánek, Jozef:	Project application of statistical methods for monitoring of production process capability which is affecting final quality of LCD TV
Szórád, Peter:	System of measures to prevent fluctuation in conditions of ALT, a.s., Komárno,
Šebo, Marián:	Research of the current situation of human resource management in management of qualities system for corporate practice
Špirková, Marta:	Proposed measures to improve the use of Internet services in quality management in the company Letecké opravovne Trenčín, a. s.
Štúň, Marek:	Survey application of the principles of leadership in quality management systems in selected organizations in Slovakia
Tamási, Peter:	Proposal of measures to improve the recruitment and selection employees in the company RPC Bramlage Veľký Meder, s.r.o.
Tóth, Dávid:	Ergonomic rationalisation of the chose operation in the shipyard of Slovenské lodenice Komárno, a.s. Bratislava
Tóthová, Eva:	Proposal of measures to improve processes of register and storage of company Duslo, a.s. Šaľa
Trubač, Marián:	Research on application of methods for improving quality management in selected organizations
Urbán, Peter:	Proposals for more efficient use of CRM industrial companies in Slovakia
Volner, Martin:	Proposal pricing in manufacturing organizations as part of cost oriented quality management
Vőrős, Tomáš:	Proposal of the actions to improvement of production process in the factory STAKOS SLOVAKIA, a.s.
Záturecký, Juraj:	Proposed measures evaluation of economic efficiency using the method of operation of EMS in the CBA ZOS Zvolen, as in the context of Corporate Social Responsibility
Záviš, Roman:	The proposal of improving the application of the principles applied in the planning and management of production processes in Slovakia
Zbojová, Tatiana:	Proposal of measures to improve work motivation of employees in the company HYDAC Electronic, s.r.o.
Zemková, Monika:	Draft recommendations on the sustainability of corporate social responsibility (CSR) for small and medium-sized enterprises in Slovakia
Zielosková, Miroslava:	Proposal for measures for improving corporate culture of company ZF Sachs Slovakia. a. s.
Zvonár, Tibor:	The proposal of measure to improve use of internet services of the enterprise KNOT Ltd.
Živčic, Peter:	Proposal to improve work motivation employees in the enterprise Company Kováč, Ltd.

MASTERS THESES

Antálek, Ferdinand:	Project of harness assembly process improvement in Delphi Slovakia s.r.o.
Asztalos, Štefan:	Suggestion of streamline the system further education of workers in the enterprise Slovenské elektrárne a.s., plant Atómové elektrárne Mochovce
Babčan, Ján:	The proposal of the usage of the creative methods and tools of creative management as an implement to rise an efficiency of assembly in the company PCA Slovakia, s.r.o.
Babincová, Jana:	Project of Integrated Managerial System Datalogic Scanning Slovakia, s. r. o.
Bally, Martina:	Proposal of solution to improve the usage of IS in the company Slovak Parcel Service s. r. o.
Baráni, Milan:	Application of SIX SIGMA methodology for improvement of painting process.
Barčák, Martin:	A project of gaining depression of spoiled works in the project E 81 with the help DMAIC
Beluský, Martin:	Suggestion of system the usage financial analysis in financial management in enterprise Púchovský mäsový priemysel, a.s.
Blažíček, Štefan:	Optimalisation proposal of financial planning model in company AGROPARTNER, l.l.c. Plavecké Podhradie
Bódišová, Marta:	Proposal of Marketing Mix Application Improvement in the Company TERMOTECHNA a.s.
Bogárová, Tünde:	Proposal for streamlining processes for customer relationship management in business ATTRACT TOUR, s.r.o
Bohdanová, Jana:	Suggestion for rationalization of system for evaluation of employees in the company ZF SACHS Slovakia, a.s.
Bošáková, Zuzana:	Suggestion of recruitment and selection system in the company OMS, spol. s.r.o.
Božiková, Lucia:	Proposal to reduce impact of cost externalization in company Topos Tovarniky plc. with context of strategy SZP
Bukovinová, Dominika:	Application of implementation of business ethics implements in an enterprise Tatrakon spol. s r. o.
Burská, Andrea:	The proposal of the system of acquiring and choice of employees in the company Doprastav ltd.,
Bušíková, Soňa:	Practical proposal to improve and implement reward system of employees in Leoni Slowakia s. r. o. Nová Dubnica
Cádrová, Natália:	Project of making control in management loads in company Vetter Slovakia s.r.o.
Cagalová, Simona:	Proposal to modification of material flow and integration of production lines for production of spare parts in company Hella Slovakia Front-Lighting s.r.o.
Cerovská, Lenka:	Proposal for use of assessment and development centers in human resource management of the company ŽOS Trnava, inc.
Cíferská, Hana:	Suggestion of system actions for improvement of personnel processes in human resources administration in I. D. C. Holding, a. s. company
Císar, Pavol:	The proposal for rationalization of inventory management and warehouse management in the company HKS Forge, s.r.o., Trnava
Csóka, Milan:	Proposal to improve the adaptation process of new employee in the selected operation Zentiva, a.s.
Čamajová, Zuzana:	A project of application of statistical regulation of the production process of printed circuit following analysis of data from testers
Čuhák, Miroslav:	Proposal for improving the evaluation system of employees in company Suavinex Laboratory International a.s.
Demáček, Ivan:	Preparing a project to improve the production process of sun visors in company GRUPO ANTOLIN BRATISLAVA s.r.o.
Dobišová, Soňa:	Proposal of application 5S method project at workplace Technology maintenance workshop in the company Protherm Production, ltd
Domorák, Matej:	The proposal of the improvement of storing system in the output storage in the company Bekaert Slovakia, Ltd., Sládkovičovo
Dömötörová, Eva:	Design of system acquisition and recruitment JASPLASTIK-SK, Ltd,
Dudžíková, Martina:	The project proposal process improvement implementation contracts in the company MADI´S, s. r. o. operation Bratislava
Ďurečková, Miroslava:	Application of methods for prevention waste in production like part improving process in ZF Boge Elastmetall Slovakia a.s.
Ďurišová, Eva:	Project of implementation of ergonomic rationalization in Delta Electronics (Slovakia), Ltd.
Ďurišová, Vladimíra:	Proposal of marketing communication tools of selected products in the cooperative society Tatrachema, VD Trnava
Fančovičová, Alena:	The Proposal of Method Application for Production Waste Prevention as Part of Process Improvement in Quality Management System
Fülemitsová, Petra:	Proposition of options for using cost analysis in corporate governance FREMACH TRNAVA, Ltd.
Gal'an, Jozef:	The suggestion of arrangements for improvement of usage of exact
Galko, Michal:	Proposal for improving of marketing mix tools' using in RONA, Jsc.
Glonek, Vladimír:	The Project of the Identification and Documentation of Selected Implementation Processes as a Part of Improving the Process Management in the Model CAF at MTF STU Trnava
Hinca, Vít:	The solution of proposal of ergonomic program on choose operation in group ZSE Bratislava
Hippová, Monika:	Revision of indicators for measurement and monitoring as part of increasing the efficiency of processes
Hlavatovič, Rastislav:	Creation of progress for utilization FMEA method in the company Vossloh-Schwabe Deutschland GmbH
Hmiráková, Monika:	Proposal to improve the system of adaptation new employees in factory LEONI CABLE SLOVAKIA, spol. s r.o.
Hodulík, Marián:	The proposal to streamline the process of sampling the input material in the company Zentiva, as, Hlohovec
Hrčka, Jozef:	Measuring system analysis of the automatic measurement gage D120 for axial backlash of the gearbox input shaft
Hrivňáková, Katarína:	Proposal to streamline warehousing system and the implementation of RFID technology in shipping, logistics center business Decodom, spol. s r.o.
Hupka, Igor:	Proposal for solutions to improve the use of IS in the Company Welding s.r.o.,
Husárová, Jarmila:	Proposal for improvement of using marketing communication in company ETI ELB s.r.o.
Hýsková, Kristína:	Suggestion of effective logistics processes in the BOST SK s.c. company
Hyžová, Marieta:	Proposal of introduction of „pull principle" in the production process of Hella Innenleuchte-Systeme Bratislava, s.r.o.
Chabadová, Veronika:	Draft concept of integrated management system
Izakovič, Jozef:	Proposal to Increase Effectiveness of Employees' Stabilization in company Lear Corporation Seating Slovakia, s.r.o., Senec
Jancíková, Marcela:	Proposal for improvement in software support application for document management in company DELTA Electronics (Slovakia), s.r.o.

Jančiová, Dana:	The proposal for marketing strategy in enterprise Fiving, Ltd.
Janík, Miroslav:	The proposal for the extension of using the FMEA method in the company VÚSAPL, a. s., Nitra
Juhásová, Iveta:	Proposal of IMS in context with strategy of Corporate Social Responsibility in the Menert spol. s r.o. Šaľa
Juhásová, Kristína:	The Proposal for the Improvement of the System of Calculation and Pricing in ŽOS Trnava, a. s.
Juriš, Dominik:	Proposal of development of creative environment in HKS Forge, s.r.o.
Jurková, Marta:	Application design techniques to prevent wastage in production as a part of process improvement in quality management
Juroleková, Andrea:	Proposal to improve the adaptation process of new employees in the IDC Lolly, Ltd. Company
Kajan, Peter:	Proposal for rationalization of manufacture process in the company SEWS Slovakia, s. r. o.
Karaková, Marcela:	The Proposal to Streamline the use of FMEA methods in Železiarne Podbrezová, a. s.
Kenderová, Anna:	Proposal on efficient use of marketing mix in the company Stanislav Sokol – ALUSTAV
Kinčok, Štefan:	Proposal for usage improvement of Process FMEA method in company ZF Levice, s. r. o.
Klobušická, Monika:	Proposal for rationalization of ergonomic solutions in the selected operating company ABB Ltd. PTPM Brno
Kokavcová, Adriána:	Solution proposal for effective system of employee's recruitment and selection in the company ŠVEC a SPOL, s.r.o., Vráble
Kolega, Lukáš:	System design of acquisition and selection of employees in the company SB Inmart a.s.
Kolenyaková, Mária:	Implementation project proposal of computer's supported process in product distribution at a company named SUBTIL Slovakia, s.r.o.
Kollár, Tomáš:	Proposal for a methodology of creating a competency model for the selected category of employees in ŽOS Trnava, a.s.
Kondrk, Jozef:	The project of improvement selected TQM principles in PFS, a.s. company, Brezová pod Bradlom
Kopaj, Matej:	Project integrated management system applications in 3J-3D int., ltd. Vlčkovce
Kosnovská, Sylvia:	Designing Personnel Planning system at Gleinstein Slovakia ltd, Trencin
Kováč, Martin:	Secondary production times shortening layout within the production process in HS-Tec, Ltd. Trenčín
Koval', Martin:	Proposal of the improving effectiveness of procurement processes in the Chemko, a.s. Slovakia
Kowalová, Hana:	Proposal solution of ergonomic rationalization in under operation FAE in company Faurecia, s.r.o. Hlohovec
Kozačková, Jana:	The working out of proposal for the application of statistical methods at the start of serial production of the product "Radhaus hinten aussen"
Krajčovičová, Katarína:	Proposal for improving the corporate culture in company Chemolak, a. s.
Kralinský, Martin:	Solution draft to improve Process Management in Telefónica O2 Slovakia, business with limited liability
Križanovičová, Zuzana:	Draft of the project of 5S method application in the stock and the workshop in company EUROTIP, Ltd.
Kučera, Igor:	A proposal of the improvement of a further education system of employees at the Railway Company Slovakia joint-stock company
Kučeráková, Eva:	Suggestion of providing employee benefits using the system in the enterprise Cafeteria in the company STASO, s. r. o. Brezno
Kuchtová, Hana:	Proposal for streamlining logistics processes in the company SLOVARM, a.s.
Kuzmová, Daniela:	Improvement proposal concerning the project management computer support utilisation in Kovac, Ltd.
Látečka, Roman:	Proposal of the application method for prevent of wasting in the assembly as a part of process developing in quality management system
Lebocz, Ladislav:	Proposal for IMS in the context of the strategy of CSR in the company Herb-Pharma Sk, s.r.o. Veľké Ludince
Lehocká, Mária:	Concept of employee evaluation system in FMB s.r.o., Bánovce nad Bebravou
Levický, Peter:	Proposal of safety rules for workflows of maintenance in the stamping shop of the company PCA Slovakia, s.r.o., Trnava
Madžo, Marek:	Proposal to improve stabilization of employees in the company Stabil a.s.
Magál, Roman:	Proposal for management processes improvement in Emerson a.s., company in Nové Mesto nad Váhom
Marcinová, Lucia:	Suggestion on Supplies and Stock Control Enhancement in the Company Biotika a.s., Slovenská Ľupča
Marušincová, Andrea:	Project applications in self-assessment GAMO s r.o. Banska Bystrica
Masnicová, Lucia:	The concept of reenginnering by logistical processes in company Faurecia Slovakia, co. l.t.d.
Matovičová, Ľubica:	Suggested enhancing the management of personal career employees in the Slovak Electricity Company, a. p., Nuclear power plant Bohunice
Matula, Jozef:	Project applications of process FMEA at production of railway carriage Falns
Miartanová, Ivana:	Proposal of reenginnering material flow in the company DECODOM spol. s.r.o.
Miklovičová, Petra:	Draft of system personal marketing in SEMIKRON, Ltd.
Mikuláš, Matej:	Proposal for rationalization of the assembly line for the front bumpers in the company Faurecia Slovakia s.r.o branch plant Hlohovec Front End
Mikulčíková, Katarína:	The proposal for improvement and command of the system for correction and maintenance of the pump 2TJ20D01 in the Company SE-EBO, a. s., Jaslovské Bohunice
Moravcová, Aksana:	Proposal of the 5S method application in workshops of the company SNEF SLOVENSKO, s.r.o.
Morávek, Marek:	Proposal of the creative methods implementation in the management of Xella Slovakia, ltd.
Nováková, Monika:	Proposal for improvement of use of marketing mix in company Mlyn Sládkovičovo, a.s.
Okrucká, Marta:	Rationalization suggestions selected logistics processes in company Askoll Slovakia, s. r. o.
Okruhlicová, Miriam:	Suggestion for rationalisation for the material flow in the enterprise DATALOGIC SCANNING SLOVAKIA s.r.o. Zavar
Ondrejičková, Zuzana:	Proposal of creation and use of competency models for selected positions in the Zentiva, a.s.
Ondrišáková, Lenka:	Motivation system imporvement proposal in CEMMAC a.s.
Palanská, Kristína:	The proposal of staff evaluation system in the company – Samsung Electronics LCD Slovakia s.r.o., Voderady
Paparinská, Henrieta:	Proposal of the creation of creative work environment in ITIMEX a.s.
Pastorková, Jana:	The proposal of exploitation AHP method and Expert Choice software to optimize the strategic objectives of stakeholders in the context of the strategy of corporate social responsibility in company Emerson, plc., Branson Division
Pastuchová, Marta:	Proposal for Streamline the Education System of Employees in the Company CHEMOLAK a.s., SMOLENICE
Pavláková, Jarmila:	Draft of Evaluation Procedure of Work Difficulty
Pavlíková, Andrea:	Proposal of quality evaluation of services provided by temporary employment agencies in PCA Slovakia, s.r.o.

Pavlíková, Ivana:	Improving of company identity with the emphasis on the quality of dried stillage product
Pecháček, Matej:	The Elaboration of Methodology for Applying the Social Aspect of Corporate Social Responsibility of the CAF Model at the MTF STU Trnava
Polóniová, Petra:	Proposal for improvement of information system utilisation at the company Ing. Viliam Dulina PRUŽNOSŤ-STAVEBNO-MONTÁŽNA A PROJEKTOVÁ ČINNOSŤ
Popluhár, Ján:	The development of project ,,improvement management of complaints in STAROPRAMEN-SLOVAKIA s.r.o."
Porubčanová, Ľubomíra:	Proposal to streamline of selected logistic activities in company Delta Electronics, s. r. o.
Psotová, Marcela:	Proposal of solution the ergonomic rationalization in company FREMACH Trnava, s.r.o.
Rajňák, Martin:	The suggestions of system monitoring and management the fluctuation of employees in DHL Express, spol. s r.o.
Rakúsová, Mariana:	Proposal for Improvement of a Company's Environmental Management
Rusnák, Martin:	The proposal of development managerial creativity like the support of the management innovation processes in ENERGOMONT s.r.o.
Selnekovičová, Miriam:	Project of statistical thinning at final control of „Bearing housings DV16C"
Schmidt, Lukáš:	Proposal of the improvement of organization arrangement of Chladiace veže Bohunice, Ltd.
Skalošová, Janka:	A scheme of applying creative methods as an assumption for creating innovations in ONERTEX s.r.o.
Sklenář, Peter:	The proposal of system providing employee benefits using the Cafeteria system in Company Slovak Shipyards Komárno, Plc.
Slašťan, Martin:	The project proposal of the application of the method 5S in the selected plants (Taviareň, Odlievanie, Apretovňa) in the company Fagor Ederlan Slovensko, a.s.
Sloviková, Marcela:	Proposal to improving the maintenance-repair system in the enterprise Eustream, a. s., Bratislava
Sofková, Zdenka:	The proposal of improving recruitment and staff employees in AGROPARTNER, Ltd.
Sokol, Peter:	The project of the quality plan for the introduction of new models of LED televisions in SAMSUNG Electronics Slovakia, Ltd.
Stanko, Martin:	Project of application the methods to prevent the wastage in production as a part of the improvement the processes in the quality management system
Strákoš, Boris:	The project of application of the improvement action plan TQM in KIWA, Company Ltd.
Száraz, Dalibor:	Proposals of acquisition and recruitment of employees in Pastorkalt, a.s.
Škultéty, Dušan:	The project of strategy creation and its implementation in Západoslovenské tlačiarne, Ltd. Skalica in the context of SZP
Špaleková, Miriam:	The proposal to streamline the system acquisition and recruitment in the Slovak Electric, Inc.
Špirková, Monika:	Proposal for a motivational system in the factory Vital s.r.o.
Šuteková, Vlasta:	Proposal of a planning system for investment development in TOMA INDUSTRIES Ltd., Trnava.
Švedová, Mariana:	Suggestions to improvement project management at company TEPRON spol. s r. o.
Takáčová, Miroslava:	Elaboration of the application project of market research methods and tools in Železiarne Podbrezová, a.s.
Tarandová, Michaela:	Solution proposal of ergonomical rationalization work in selected operation of company SE Bordnetze – Slovakia, Ltd. Nitra
Temiaková, Eva:	The proposal project to improve the application of marketing mix in the company Kováč, s.r.o.
Temiaková, Lucia:	Optimization of selected logistics activities aimed at packaging and storage of goods in business Považský sugar, a. p., Trenčianska Teplá
Uhrincová, Zuzana:	Proposal of implementation the ergonomic rationalization in company IKEA Components s.r.o.
Vaclaviková, Dana:	The proposal of marketing strategy of EMBATEX SK, s.r.o. company
Vaisová, Mária:	Design of application of methods and tools for improving quality in ťaháreň 1 premises
Válkyová, Adriana:	Proposal for improving the process of adaptation of employees in company Slovenske energeticke strojarne, a.s. Tlmace
Vanková, Libuša:	Proposal of rationalization assurance processes of supply logistics in company GUKOM Ltd.
Veselovská, Stanislava:	Suggestion for improvement of job description sheet and its utilization in ZOS Trnava Spa
Videnová, Veronika:	Proposal concept of integrated management system
Vörösová, Zuzana:	Project of action plan application for improving the TQM in SEPS a.s. Bratislava
Vysudilová, Jana:	Proposals exploitation method FMEA on disassembling workplace at ZF SACHS Slovakia, a.s.
Zabadal, Peter:	Improvement proposals of marketing communication in company Chemkostav, a.s.
Zemanová, Katarína:	Proposal to Increase Effectiveness of Employees' Stabilization in company Lear Corporation Seating Slovakia, s.r.o., Senec
Zezula, Marek:	Project implementation of quality management system according to TL 9000 in the Software Research & Development department in Alcatel-Lucent Slovakia a.s

PhD THESES

Babčan, Miroslav:	Proposal of Employer Brand Image Management Methodology in Conditions of Industrial Plants
Babeľová, Ivana:	Proposal to the implementation of ergonomic programs within programs for health and safety at work in Slovakia
Baňasová, Lucia:	The identification of key managerial competencies as a tool for increasing business competitiveness of industrial enterprises
Beňo, Rastislav:	The proposal for the procedure of ergonomics application in company logistics
Božeková, Jana:	Proposal for evaluating the economic effectiveness of ergonomics programs in to industrial enterprises
Gabriš, Peter:	The Methodology Proposal for Standards Evaluation of Knowledge Management in Industrial Enterprises in the Slovak Republic
Horváthová, Silvia:	The Methodology Proposal for Standards Evaluation of Knowledge Management in Industrial Enterprises in the Slovak Republic
Kusý, Ondrej:	Proposal of methodology for assessing the quality of products and production processes
Marton, Michal:	Progressive methods and tools for effective management of business processes in manufacturing organizations
Mišák, Peter:	Methodology Proposal for Evaluation of Successful CRM Implementation within Industrial Companies

Mišáková, Alexandra: Proposal of Methodology Implementation of Corporate Social Responsibility as part of corporate culture
Mudriková, Ivana: Proposal of model of employee performance management in industrial plants
Pastucha, Branislav: Ensuring the competitiveness of SMEs through emerging clusters
Seidlová, Eva: Application of management change principles as a tool to increase competitiveness of industrial enterprises
Šmíd, Jaroslav: Strategic significance of the cluster formation for SME in Slovakia
Tóthová, Mária: The proposal of an integrated maintenance method and its application in industrial companies
Urbanovičová rod.Holkovičová, Kristína: The proposal of the complex model for education and development for managers in small- and medium-size businesses

HABILITATIONS THESES

Cagáňová, Dagmar: Selected aspects of multicultural issues in industrial enterprises in the Slovak republic

RESEARCH AT THE INSTITUTE

Area of research

- Progressive approaches in the area of the organizations management
- Financial Management
- Corporate Culture
- Knowledge Management
- Multicultural Management
- Corporate Social Responsibility
- Gender Diversity in Industrial Enterprises and Research Institutions
- Human Resources Management
- Information Quality
- Development of Managerial Competences
- Project Management
- Ergonomics
- Green Management
- Lean Management

Research characteristics

The Institute of Industrial Enterprises, Management and Quality has wide scientific cooperation with foreign universities: Leeds University Business School UK, Czestochowa University of Technology Poland, Technical University Ostrava Czech Republic, Tomas Bata University in Zlín Czech Republic, University of Iowa USA, The "Gheorghe Asachi" Technical University of Iasi Romania, University of Gabrovo Bulgaria, Ufa State Aviation Technological University Russian Federation, Izhevsk State Technical University Russian Federation The cooperation is oriented on the conference organization, preparation of international projects, study visits, common publications and lectures. During the last years, the Institute has also extended his cooperation with domestic and foreign industrial enterprises and organizations: Create – Net Italy, West-Panon Regional Development Company, Automotive Cluster Croatia , Automotive Cluster of Slovenia, Automotive Cluster Serbia, Automotive Cluster - Vienna Region, VW Slovakia, PSA Peugeot Citroën Trnava, KIA Motors Slovakia, Johns Manville Slovakia. The cooperation is oriented on study visits, diploma thesis, training and participation in international projects.

As a result of this cooperation during the year 2011 the Institute has prepared proposal for 7 VEGA projects, 2 KEGA projects, 2 APVV projects, 1 7FP project and 3 CEE projects.

The research areas comprises human resources management, operations research, logistics, innovation management, information management, financial management, project management, quality management, production management with the special emphasis on competencies models, IFRS, creative accounting, financial management of holding, financial analysis of enterprise and holding, knowledge management, multicultural management, quality, corporate social responsibility, green management, ergonomics and lean management.

Areas of expertise

- Innovation Management
- Intercultural Management
- Ergonomy, Ergonomic Programmes
- Human Resources
- Enterprise Culture
- Development of Manager Competencies
- Corporate Social Responsibility
- Systems of Quality Management
- Corporate Social Responsibility
- Gender diversity

PROJECTS OF THE INSTITUTE

INTERNATIONAL PROJECTS

Title of the project AUTOCLUSTERS
Type of the project South East Europe Programme
Number of the project
Investigators Dagmar Cagáňová, Assoc. Professor, Miloš Čambál, Assoc. Professor, Jana Šujanová, Assoc. Professor, PhD., Zdenka Gyurák Bábeľová, MSc. PhD., Zuzana Lenhardtová, MSc., PhD., Miriam Ševčíková, MSc., PhD., Petra Marková, MSc., PhD., Martina Jakábová, MSc., PhD.
Time period of the project 1.4.2009 – 31.3.2012
Annotation of the project The Project brings together Universities, R&D institutions, SME support facilities from EU-15, NMS as well as IPA to prepare and create the first automotive network in South East Europe. The second level clustering activities proposed by the project are strictly oriented on the activities, which are improving the innovation capacities in the region and improve technology and know-how transfer - improving the innovation circle. The project in the first stage analyses the cluster's development and best practices across the regions as well as creating the connection with other existing European activities in the automotive clustering. The project focuses highly towards producing concrete results and addresses the main challenges that are particularly specific for SEE region, particularly the same across the whole EU territory.
The project is built up on experience from previous activities in Automotive industry (NEAC, Automotive Clusters, Belcar, TCAS, I-CAR-O) and in line with EU policies, especially in clustering and automotive industry. The framework's project aims to:

- Create the first sustainable network in automotive industry in SEE region with specific focus on innovation activities
- Create partnerships which consist of institutions from New Member States, non-EU members as well as well experienced institutions from EU-15
- Invite in the network not just clusters and other SME supporting facilities but directly also R&D institutions and universities
- Improve innovative capability by realizing studies of innovation capacities, exhibition in universities and dissemination outputs of our activities, exchange studies and networking activities
- Prove the concept by realizing the project samples and by generating of the proposals to FP7

Title of the project DIVERSITY. Improving the Gender Diversity of Management in Materials Research Institutions
Type of the project 7FP
Number of the project
Investigators Oliver Moravčík, Prof. Dr., Dagmar Cagáňová, assoc. prof., František Horňák, assoc. prof., Peter Halada, MSc., PhD., Jana Štefánková, MSc.
Time period of the project Jan. 2009 – Dec. 2011
Annotation of the project DIVERSITY is a support action - type project funded by the European Commission within the 7th Framework Programme for research and technological development and addresses to the Capacities programme, part 5 Science in Society, activity 5.2.1. Gender and Research, thematic area 5.2.1.1. Strengthening the role of women in scientific research. The project has started on the 1st of January 2009 and will last 36 months.

This consortium aims to tackle the problem of under-representation of women in decision-making by fostering the change in institutional culture and changing the attitudes with regard to gender diversity in materials research organisations. In this way a more stimulating research environment in the spirit of the European Charter for Researchers and the Code of Conduct for their Recruitment will be achieved.

The central goal of the project is to identify the effective methods, policies and mechanisms in order to support women scientists in relation to their access to decision-making positions in the sphere of materials research, which traditionally is a male-dominated scientific field. Commitment to the promotion of women to the highest level of research is anchored at the topmost political and institutional level in DIVERSITY project.

Gender equality in science is not simply a question of fairness. To strengthen research...total human capital must be utilised.

NATIONAL PROJECTS

Title of the project Project Managemet Processes Maturity Control as a Tool for the improvement of the mechanical engineering enterprises competitiveness.
Type of the project VEGA
Number of the project 1/0491/09
Main investigator Jana Šujanová, Assoc. Professor, PhD.
Time period of the project 2009-2011
Annotation of the project Management is one of the most dynamically developing business disciplines. One of the outputs of this development is the growing number of international standards, along with methodologies and project management tools. Business practice has to face the problem of the effective implementation of those standards in their internal project management processes and more in the project quality control that should lead to the achievement of a higher project maturity level. A higher project management maturity level in business practice means achievement of the project goals with less resources, lower costs and shorter time. All this could not be accomplished without the proper tools. Therefore the objective of this project is to prepare a widely applicable reference manual and tool for the project management processes maturity control in Slovak mechanical engineering enterprises, with the aim of increasing their effectiveness and sustainable competitiveness.

Title of the project	Creation of teaching material of the secondary school subject "security technology" with using of interactivity MM of education software and e-learning
Type of the project	KEGA
Number of the project	144-039STU-4/2010
Main investigator	Rudolf Rybanský, Assoc. Professor, PhD.
Time period of the project	2010-2011

Annotation of the project The project is focused on creation of interactive multimedia teaching applications to increase the level of the pedagogical process with necessary video sequences, pictures and other multimedia aspects of the subject Security technology. It is for students of the secondary schools with an identical specialisation. One more intensive, more efficient and rational perception of information in specific subjects enables presentation of multimedia in many forms (text, schemes, photographs, speech, animation, video, tests). Today it is very important to find the main idea and aim of a studied subject in a flow of information. Interactive multimedia and hypertext where students can enter are the correct tools to support studied information, easy search, testing and easy orientation in them.

Title of the project	Concept of the HCS model 3E vs. concept of the Corporate Social Responsibility (CSR)
Type of the project	APVV
Number of the project	LPP-0384-09
Main investigator	Peter Sakál, Professor, PhD.
Time period of the project	2009-2012

Annotation of the project The aim of the mentioned project is to enlarge the results of the research project Number 019/2001: "Transforming Industry in Slovakia through Participatory Ergonomics" (financially supported by a common Slovak-American fund for research cooperation) and also of the project KEGA MŠ SR Number 3-3111-05. In these days the research continues in cooperation with the company CHIRANA PROGRESS, s.r.o. Piešťany in the area of permanent development (TUR) and Corporate Social Responsibility (CSR). The aim of this research is to contribute to the vision implementation of Agenda 21 and the Lisbon strategy, in particular the strategy for the parts TUR in conditions of research and pedagogical processes on the workplaces of MTF STU Trnava.

VISITS OF STAFF MEMBERS TO FOREIGN INSTITUTIONS

Employee	State
Babčanová Dagmar, Ing. , PhD.	Germany
Beluský Martin, Ing.	Italy
Cagáňová Dagmar, doc.Mgr. , PhD.	Italy, Greece, Slovenia, Croatia, Germany, Czech Republic, Austria, Hungary,
Čambál Miloš, doc.Ing. , CSc.	Poland
Drieniková Katarína, Ing.	Italy, Croatia, Poland
Gyurák Babeľová Zdenka, Ing. , PhD.	Russia
Holeček Jaroslav, Ing.	Croatia, Slovenia, Czech Republic
Horňák František, doc.Ing. , PhD.	Hungary, Poland
Hrdinová Gabriela, Ing.	Italy
Jakábová Martina, Ing. , PhD.	Russia
Kaiserová Veronika, Ing.	France, Italy
Kučerová Marta, Ing. , PhD.	Russia
Marková Petra, Ing. , PhD.	Czech Republic
Naňo Tomáš, Ing.	Italy
Paulová Iveta, doc.Ing. , PhD.	Russia
Sakál Peter, prof.Ing. , CSc.	Poland
Šmida Ľubomír, Bc.	Russia
Šujanová Jana, doc.Ing. , CSc.	Russia
Urdziková Jana, Ing. , PhD.	Italy, Croatia, Germany, Czech Republic, Hungary, Poland, Slovenia
Vaňová Jaromíra, Ing. , PhD.	France
	Czech Republic

MEMBERSHIP IN SLOVAK PROFESSIONAL ORGANISATIONS

Slovak Academy of Management
Miloš Čambál, assoc. Prof. PhD.
Iveta Paulová, assoc. Prof. PhD.
Marta Kučerová, PhD.
Miroslava MÍkva, PhD.
Jaromíra Vaňová, PhD.

Project Management Society
Miloš Čambál, assoc. Prof. PhD.
Henrieta Chovanová, PhD.
Martina Jakábová, PhD.

Slovak Ergonomics Society
Jozef Sablik, professor, PhD.
Andrea Holková, assoc. Prof. PhD.
Karol Hatiar, assoc. prof.
Rastislav Beňo, MSc., PhD.

Association of Management Training and Development
Miloš Čambál, assoc. Prof. PhD.
Andrea Holková, assoc. Prof. PhD.

District Council for Professional Education and Preparation TTSK
František Horňák, assoc. Prof. PhD.

Committee for Scientific Management ZSVTS
Miloš Čambál, assoc. Prof. PhD.
Marta Kučerová, PhD.

Association of Institutes for Adult Education (AIVD)
Zuzana Lenhardtová, PhD.
Zdenka Gyurák Bábeľová, MSc., PhD.

Slovak Chamber of Logistic Auditors
Viliam Cibulka, assoc. Prof. PhD.

Slovak Office of Standards, Metrology and Testing, National Technical Commission for Quality
Jarmila Šalgovičová, prof.

Slovak Anthropological Society
Karol Hatiar, assoc. Prof. PhD.

Slovak Association of Finance and Treasury
Jana Šnircová, assoc. prof. – board member

Slovak National Accrediation Service
Viliam Cibulka, assoc. prof. – external expert

Slovak Association of PhD students
Zdenka Gyurák Bábeľová, MSc., PhD.
Martina Jakábová, MSc., PhD.

Best Practice User Group Slovakia
Martina Jakábová, PhD.

Membership in Evaluation Committees (VEGA, KEGA, APVV, SAIA, EU Structural Funds)
Miloš Čambál, assoc. prof.
Viliam Cibulka, assoc. prof.
Jana Šujanová, assoc. prof.
Zdenka Gyurák Bábeľová, MSc., PhD.

MEMBERSHIP IN INTERNATIONAL PROFESSIONAL ORGANISATIONS

International Coaching Federation
Miloš Čambál, assoc. Prof. PhD.

Czech Pedagogical Society – Citizens Association
Dagmar Cagáňová, PhD.

CASAJC-Czech and Slovak Association of Teachers of Foreign Language at Universities
Dagmar Cagáňová, PhD.
Asian School of Management and Technology
Vidová Helena, Assoc. Prof. PhD.

European Alliance of Innovation
Miloš Čambál, assoc. prof.
Dagmar Cagáňová, assoc. prof.
Jana Šujanová, assoc. prof.

European Society for Enginnering Education
Dagmar Cagáňová, assoc. prof.

European Platform of Women Scientists
Dagmar Cagáňová, assoc. prof.

Czech Society for Operations Research
Henrieta Hrablik Chovanová

PUBLICATIONS

Journals

[1] Bílý, Matej - Lakatoš, Peter - Šalgovičová, Jarmila: Audit of management systems. In: Quality. - ISSN 1335-9231. - Vol. 19, No. 2 (2011), p. 6-10.

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[3] Cibulka, Viliam: Dynamic modelling, effective valuation equipment and process risk administration. In: Transport & Logistics. - ISSN 1451-107X. No. 9 (2011), p. 72-76.

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INVITED PANELIST IN DISCUSSION

"Knowledge management and innovations in the Slovak Republic", workshop AUTOMOTIVENETS, February 2011, Trento, Italy, Dagmar Cagáňová, assoc. prof., Miloš Čambál, assoc. prof., Jana Šujanová, assoc. prof.

"Gender Diversity from the Slovak and Greek Perspective, worskhop" Women in European Materials Science Research Institutions´, May 2011 Korfu, Greece, Dagmar Cagáňová, assoc. prof., Jana Štefánková, MSc., Jana Šujanová, assoc. prof.

"Innovations in the Automotive Industry", workshop Trento, November 2011, Miloš Čambál, assoc. prof., Dagmar Cagáňová, assoc. prof.

"The industrial enterprises performance optimization by the application of competency models." TEAM 2011 3rd International Scientific and Expert Conference with simultaneously organised 17th International Scientific Conference CO-MAT-TECH 2011, 19th -21st October 2011, Trnava Slovakia, Miloš Čambál. assoc. prof., Jana Šujanová, assoc. prof.

"Gender diversity and innovations," 29 November- 2 December 2011 European Forum for Innovation 2011 Rome, Italy, Dagmar Cagáňová, assoc. prof.

INSTITUTE OF SAFETY AND ENVIRONMENTAL ENGINEERING

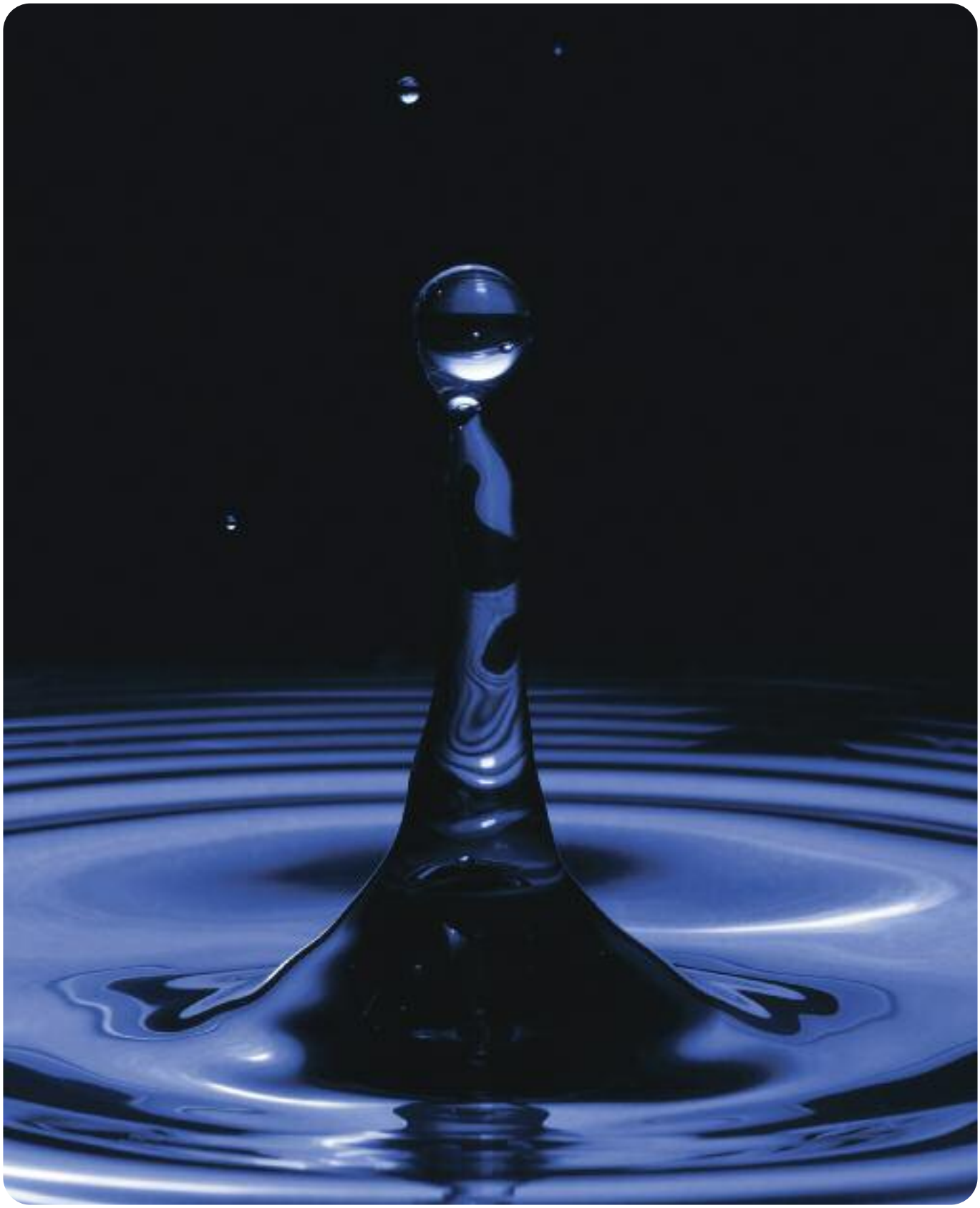

Photo by Milan Maršnek

INSTITUTE OF SAFETY AND ENVIRONMENTAL ENGINEERING

Contact

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Institute Departments

- Department of Environmental Engineering
- Department of Safety Engineering
- Department of Industrial Safety

Staff

- Professors: 1
- Assoc. Professors: 2
- Senior Lecturers: 8
- Research Fellows: 3
- PhD Students: 24

ACTIVITIES AT THE INSTITUTE

Date	**Title of event, activity characterising the life at the Institute in 2011**
01.09.2011 – 12.09.2011	International Summer School courses on "Selected issues of safety engineering and exploitation of nuclear power plants in the context of EU Energy Policy"
1.12.2011	International conference for Integral safety 2011
1.6.2011	Festival of experiments for secondary schools
28.4.2011	Festival of experiments for secondary schools
1.4.2011	Festival of experiments for secondary schools
14.2.2011	Festival of experiments for secondary schools
25.9.2011	Botanical garden excursion during the World Day of Tourism (200 participants)

EDUCATION AT THE INSTITUTE

STUDY PROGRAMMES

Bachelor degree
Occupational Health and Safety

Master degree
Integrated Safety

Post graduate degree
Integrated Safety

Number of the students (till 30.10. 2011) on the study programmes guaranteed by the institute: 518
Number of the graduates (2010/2011) on the study programmes guaranteed by the institute: 117

GRADUATE PROFILE

BACHELOR PROGRAMMES (Bc.)

Work Safety and Health Protection
The graduate will gain theoretical knowledge of natural, economic and social sciences. During the study, he will develop the knowledge of technical sciences with orientation on safety and reliability of production technologies, safety of work environment and environmental protection. He will also learn how to assess safety of technical systems, production technologies, analysis of failures and disasters, risk identification and quantification, suggestion of preventive measures aimed at the staff and safety improvement and health protection. The graduate will also gain knowledge in the field of legislative tools for managing dangerous activities, testifying and certification of materials and products and application of safety and technological procedures and parameters of materials. The graduate could work as a safety officer in industry, organisations, governmental bodies, insurance companies, or an advisor/consultant in the engineering organisations dealing with designing and assessing safety systems. He will successfully contribute to designing a safe and healthy working environment.

MASTER PROGRAMMES (MSc./ ENG.)

Integral Safety
The graduate will gain knowledge in the field of environmental and safety risks management. He will be able to control the activities within work and environment safety, carry out risk analysis and related documentation, and propose system measures to increase the efficiency of control systems of integrated safety. The graduate could be successful in administration, labour inspectorates, technical inspection and environmental inspection, and also in the positions of a leader and consultant in engineering organisations dealing with designing and assessing the safety systems in industry, insurance companies and manufacturing.

POSTGRADUATE PROGRAMMES (PhD.)

Integral Safety
The graduate will master the research and experimental methods within safety and security administration systems and safe working environment. He will be able to develop theory in accordance with requirements of practice focusing on technical and humane aspects of the man-machine-environment system. He will be able to carry out scientific research in teams, bringing his own solutions to complex tasks of theory and practice, risk management, safe working environment, fire protection and other related sectors.
The graduate could operate as a highly qualified expert in institutions of base and applied research, researcher and teacher in universities, advisor and consultant in the engineering organisations dealing with designing and assessing safety systems, as well as in insurance companies.

LIST OF SUBJECTS GUARANTEED WITH THE INSTITUTE

Assessment of Environmental Effects
Bachelor Project
Bachelor Work
Basics of Environmental Studies
Basics of Safety Engineering
Blast and Fire Protection
Blast Protection and Industrial Safety
Connoisseurship of Commodity
Dangerous Activities Management
Dangerous Activities Psychology
Danger Effects and Processes Simulation
Dangerous Materials
Dissertation Project
Ecological Disposal of Materials and Waste
Educational Activity
Emergency Preparedness for Accidents and Dangerous Situations
Engineering Work Environment
Environmental and Safety Information Science
Environmental Engineering
Environmental Chemistry
Evaluation of Indoor Environment Aspects of OSH
Fire Dynamics
Fire Engineering
Fire and Accident Modelling
Fire-Fighting Safety for Buildings
Fundamentals of Environmental and Safety Information Science
Hazardous Materials
Human Reliability in Technical Systems
Selected Chapters of WSHP Control in Companies
Technological and Natural Emergencies
Industrial Toxicology
Informative Techniques in Risk Analysis
Information Sources in the Field of Integrated Safety
Inorganic and Organic Chemistry
Integrated Management of Systems
Law and Technical Directions of WSHP
Major Industrial Accidents
Management of Risk
Management of Hazardous Operations
Management Systems of the OSH
Monitoring of Risk Factors in Environment
Occupation Safety and Health
Practice
Processes of Environmental Technologies
Project of Environmental Protection
Progressive Methods of Integrated Protection of the Environment
Quality Control and Normalization in WSHP Domains
Remediation Technologies
Research Work
Risk Analysis Methods
Risk Control Methods
Risk Evaluation in the Environment
Risk Theory and Casual Processes
Safety and Reliability of Systems
Safety Engineering
Safety Management
Safety of Industrial Technology
Safety of Technical Systems
Social and Economic Aspects of WSHP
Technical and Safety Conditions of Materials and Constructions
Technical Apparatus Risks
Technical Systems Reliability
Technologies of Waste Management
Theory and Management of Safety Control
Theory of Diagnostics, Maintenance and Repairs
Thesis / Diploma Work
Thesis Project / Diploma Project
Work Safety and Health Protection

GRADUATE THESES

BACHELOR THESES

Bacigálová, Katarína:	Study of fire-technical properties of polystyrene
Balluch, Richard:	Unexpected reactions to treatment of the hazardous chemicals and wastes
Cesneková, Zuzana:	Application of fire-technical characteristics of industrial powders in praxis
Cuninka, Pavol:	Objectification of noise load on the selected department
Čapkovičová, Dana:	Personal Dosimetry and Radiological Protection
Čičková, Jana:	Investigation of thermal deposits in porous materials wetted with oil by self heating
Dobšovič, Matej:	Safety aspects at work in the paint shop
Doktor, Vladimír:	The human factor as a source of threats and ways of its elimination
Dovala, Jaroslav:	The liberalisation of the railways and risks of goods transportation
Draxlerová, Mária:	Safety aspects at work in the paint shop
Ďubeková, Anna:	Health and safety in forest extraction
Dubovský, Dávid:	The objectivisation of noise in VUJE a.s. at the department of construction and development workshop
Duda, Ján:	The prevention of the organization accidents
Fekete, Ľubomír:	Requirements for safe operation of the car repair shop
Fúčela, Michal:	Safety requirements for operating of the football stadium
Gromerová, Miroslava:	Fuel storage and distribution
Habala, Štefan:	Analysis of human health risks in car service
Habánek, Peter:	Occupational Health and Safety at the Wastewater Treatment Plant
Hesko, Marek:	Shipments of spent nuclear fuel by rail
Hlubík, Matúš:	Radiation safety during transportation of radioactive waste on the roads in the area of nuclear power plant
Holec, Maroš:	Security on high voltage and work on the B-command
Chrenková, Barbora:	Management System for Road Transportation Safety
Kamzíková, Tatiana:	Reporting in relation to environmental, health, safety and sustainable development

Kiš-Petyová, Adela:	The analysis of the risks in the woodworking industry
Klenkovič, Rudolf:	Storage of dangerous substances in terms of REACH and CLP
Kleštinec, Andrej:	Risk Management process identified the reliability of technological equipment
Kováč, Michal:	Working environment with the presence of dust
Kúdela, Jozef:	Safety and protection of health at work in a construction company
Kunšteková, Lucia:	Monitoring the quality of surface water in the watercourse Morava
Kuracina, Marcel:	Hydrogen Fuel Cells
Kutálek, Martin:	Safety and health risks of anthropogenic nanoparticles
Kutálková, Dana:	Work with laser devices
Madara, Jaroslav:	Study of burning tyres
Máriková, Zuzana:	The assessment of flood protection measures in the selected region
Masaryková, Mária:	Safety aspects of loading goods into the railway wagons
Masník, Michal:	Security system of machines during repair or maintenance
Miča, Pavol:	Safety and environmental aspects of the technological use of chromium compounds
Mišík, Jozef:	Polymers – raw material, product, waste
Mitašová, Anita:	Risk managment at work in Slovak shipyard in Komárno SpA Bratislava
Modrovská, Gabriela:	The risk analysis of work at heights
Obalová, Lucia:	Disposal of hazardous waste from health facilities
Ometáková, Katarína:	Influence of noise on biulders and noise effect on environment
Pűšpőkyová, Margita:	Assessment of the occupational safety in producing the compact cask for the spent fuel
Remžová, Dominika:	Entrance training on machinery, equipment and workplaces under the safety and occupational health in Swedwood Majcichov
Salvet, Rastislav:	Methods of identifying hazards
Sobota, Marek:	Determination of activation energy of ignition of oak and teak wood
Šandor, Denis:	Hazards in storage of flammable gas
Širůček, Stanislav:	Application of OSH in the structures of the Ministry of Defence
Štefáková, Lucia:	Waste incineration technologies
Štefáková, Zuzana:	Review of store of hazardous chemical substances
Tibenská, Lenka:	The checklist for rapid assessment for safe storage of materials
Vašina, Daniel:	Assessment of the occupational safety in producing the compact cask for the spent fuel
Vidlička, Vladimír:	OSH lead rechargeable batteries and electrical equipment energized
Viskup, Peter:	Considering security status of restricted technical devices in Fremach Trnava
Vráblik, Roman:	Shot firing and safety
Žáková, Paulína:	Safe using of portable fire extinguishers on F fire class

MASTERS THESES

Arvajová, Zuzana:	Monitoring the flash point and igniton temperature in a hot air furnance heating electrically in connection with monitoring of weight loss
Badžo, Ladislav:	Safety requirements for professional drivers in traffic
Bartošová, Alica:	Determination of organic compounds by spectrofotometry
Bodzionyová, Barbora:	Environmental and safety aspects of biogas production from biomass
Bohunická, Jana:	Influence of external conditions on ignition parameters of selected polymer materials
Brezovanová, Jana:	Evaluation of collecting of hazardous waste in selected villages
Budinská, Barbora:	Safety requirements for personal protective equipment for welder
Čakloš, Ľuboš:	The Analysis of fire hazard during storage of agricultural products in large silos
Dančová, Barbora:	Technical rules of environmental, safety and foodstuff product labelling with the aim of informing the consumers
Doháňoš, Mário:	Pretreatment technologies of lignocellulosic biomass for bioethanol production
Dovinová, Jana:	Environmental and safety aspects of Brownfields
Ďurinová, Lucia:	The security of elected products used in the households and with the importance of safety markings
Fázik, Marcel:	The effect of chemical additives on the process of burning of dust mixture
Galbičková, Blanka:	Safety and occupational health in the production of steel construction
Guoth, Alexander:	Preliminary study of metalworking fluids such as Adrana D 407, Aquamet LAK-E, Cimstar 597 and Ecocool MK 3 treatment by the activated sludge bacteria in a laboratory bioreactor
Hanzelová, Adriana:	Plan of Occupational Health and Safety in the Project Documentation
Hátaš, Peter:	Nuclear Power Plant Reactor Units Safe Operation Control and Monitoring
Holkovič, Martin:	The hazard analysis of ammonia discharge in the operation of the ice arena
Horváthová, Daniela:	Effect of samples preparation to self-heating temperature
Horváthová, Michaela:	Requirements for fire protection of storages with hazardous substances
Hrušecká, Jana:	Design of an alternative source for heating of the object
Chovanec, Peter:	Assessment of safety equipment for temporary work at height and design improvements to the site
Chvostiková, Jana:	Determination of selected indicators in wastewater
Klimentová, Renáta:	Evaluation of dangerous waste processing in Pezinok region
Košťál, Michal:	Study inflammability properties of particle materials
Krajčovičová, Katarína:	Possibilities of selected pollutants sources and environmental fate identification
Kriaková, Zuzana:	Calculation of parameters of explosions

Križanová, Andrea:	Safety and protection of health at manipulation with the chemical preparation EKOPHOS – ALP
Kusý, Roman:	Risk Analysis of an Accident - a Train Crash at Žilina Train Station
Lajmon, Miloš:	Design of an information system for the scope of the traffic accidents on roads
Laky, Judita:	Risk assessment of a cooling system by selected method in Rajo a.s. Bratislava
Legény, Matej:	Quantitave and qualitative assessment of wastes, waste waters and emissions in selected company
Lopatková, Monika:	Safety of products used for maitenance of garden and importance of its marking
Lukačovič, Marián:	The effect of chemical additives on the process of burning of dust mixture
Meravý, Marcel:	Limitation of odorous emissions from rubber manufacturing company Barum Continental
Mihálková, Adriána:	EC50 evaluation of metalworking fluids such as Adrana D 407, Aquamet LAK-E and Zubora TXS by the bacteria of activated sludge
Michálek, Ivan:	Study of Initiation Sources for the Needs of Fire Cause Determination
Mikleová, Noémi:	Gaseous extinguishing agent appliciation in practice and adverse impacts on the environment
Nádašská, Zuzana:	Preliminary study of the opportunities of disposal of metalworking fluids Emulzín H, Quakercool, Hocut and Akvol B by using a bacteria-activated sludge in a laboratory bioreactor
Očenášová, Barbora:	Effect of heat flux for flame spread of wood-based substances
Pápay, Martin:	Mutual compatibility of substances
Pastier, Martin:	Study of burning chosen polyolefins
Pavlíčko, Peter:	Processing of sewage sludge on biofuels and their impact on the environment
Priecel, Jozef:	Quality assurance water in chosen locality
Rau, Ľuboš:	The use of photovoltaic systems for technology of coating services
Reho, Ivan:	Radiation protection on the workplace of computer of tomography
Rusinko, Stanislav:	Risk of the firefighters by extinguishment in the inner space with a hight heat flux
Šergovičová, Magdaléna:	Metalworking fluids Emulzin H, Hocut and Cimstar EC50 assessment by the activated sludge bacteria
Šprochová, Renáta:	Photovoltaics as a power source for the electrolytic production of chlorine
Štepanovičová, Anna:	Evacuation and protection of employees and persons in case of accident on nuclear device
Šulejová, Enikö:	Evaluation of the acquisition of hazardous waste in hospitals Senec
Tóthová, Karin:	Manipulation and transport of danger materials by railways in Slovnaft
Trebatická, Martina:	The objectivisation of Lighting Measurements in selected workplace
Truchlíková, Katarína:	Study of polymeric material burning
Urbanová, Dominika:	Effect of fires on the cycle of selected nutrients in the soil
Ušák, Marcel:	Lighting design house in terms of reducing energy consumption
Uváčik, Martin:	Analysis of risk at transport of radioactive waste
Varhol, Eduard:	Autonomous all-hazard warning systems
Viselka, Peter:	Hazard of electrical and electronic equipment used in households in terms of their thermal initiation
Vymazalová, Mária:	Optimization Proposal of the Agrochemical Properties of Soils in Former Botanic Garden Area
Zvonár, Peter:	Natural factors such as risks to the service of the national nature monument cave Driny

PhD THESES

Blinová, Lenka:	Environmental and safety impact of pretreatment of lignocellulosic phytomass for bioethanol production
Boleman, Tomáš:	Environmental and safety aspects of biogas production in industrial conditions
Buštorová, Martina:	Effect of heat flux on the ignition of selected board materials
Fiala, Jozef:	Optimalization and utilization of small hydroenergetic power source Setur combined with a solar technique
Harangozó, Jozef:	Monitoring the impact of fire retardants on flame initiation process and the flameless combustion of solid materials
Jastrabíková, Karolína:	Identification and control of risks in a selected company of machinery for purposes of applying OH SAS 18 001
Kupková, Veronika:	Study of polycyclic aromatic hydrocarbons degradation by progressive methods

RESEARCH AT THE INSTITUTE

Area of research

- fire protection
- modelling of impacts of industrial accidents
- health and safety aspects of occupational indoor environment
- biodegradability of cutting fluids
- advanced oxidation processes
- renewable sources of energy

Research characteristics

Laboratory testing
Testing of combustibility and explosiveness of substances, product and wastes in different states. Appraisal of fire-fighting foam and spray prop-

erties in the aging process. Monitoring of chosen factors in the work environment. Appraisal of noise and lighting at the workplace. Analysis of drinking water quality. Determination of biodegradability of cutting fluids. Determination of organic pollutants using analytical methods.

Document elaboration
Danger characterization and risk appraisal of selected substances, products, wastes and technologies in dependence on the partner requisites. Elaboration of protocol for identification of the external effects, elaboration of documentation on explosion protection. Elaboration of emergency plans in accordance with legislation. Risk assessment and risk analysis of fires in industry. Implementation of occupational health and safety assessment series (OHSAS), (internal audits, preparation for certification audits).

Research studies
Study of limiting conditions of the initiation of burning process of powder materials. Impact of fires and its liquidation to the environment. Environmental cost of the usage of foam extinguishing agents, appraisal of biological degradability of selected foaming agents. Fire danger of PVC cables and their protection. Creation of a knowledge database and expert system for the risk appraisal of dangerous substances, products, wastes and technologies and other dangerous processes. Modelling of impacts of industrial accidents to the environment. Usage of PC models of material escape modelling, comparison of different types of modelling programs in the field of dispersion of the materials to the environment. Study of health and safety aspects of occupational indoor environment. Progress and utilization of small hydro-energetic source in combination with solar equipments for branch of engineering. Establishment of technical-consulting laboratory for utilizing and consequent propagation of solar energy. The exploitation of advanced oxidation processes in removal of organic pollutants from wastewaters by the use of wastes from production and treatment of metals as catalysts. Botanical garden as an instrument for escalation of environmental consciousness of citizens.

Consulting, training and courses
Training and courses focused on the health and safety at work, safety education on international standards, research coordination for specific application targets and requirements for the increase of the safety of industrial regions. Guidance for implementation of occupational health and safety assessment series (OHSAS), consulting in the field of emergency planning. Consulting in utilization of renewable sources of energy.

Areas of expertises

- Analysis of Fire Danger
- Safety of Technological Processes and Systems
- Extinguishing Substances and Technologies
- Systems of Management of Safety and Occupational Health Protection according to the OHSAS 18 001
- System of Environmental Management according to the ISO 14 001
- Fire and Safety Engineering
- Fire Material Properties
- Work with Dangerous Substances
- Analysis and Risk Regulation with the Methods Checklist, Failure Modes and Effect Analysis, Hazard and Operability Study, Fault Tree Analysis
- Safety of Chemical Technologies
- Safety in Area of Explosive Substances and Explosions
- Analysis of Fire Danger
- Fire Safety of Buildings
- Alternative Energy Sources
- Air Emmisions
- Processing with Waste
- Progressive Technologies of Water Cleaning
- Integration of Systems of Safety and Occupational Health Protection (BOZP), Quality and Environment
- Environment Evaluation
- Defining of Explosion Atmospheres
- Risk Analysis
- Storage of Danger Substances – Toxicology of Substances including Risk Definition
- Prevention of Dangerous Industrial Accidents
- Implementation of the BOZP and EMS Systems in Enterprises

PROJECTS OF THE INSTITUTE

PROJECT OF TECHNOLOGY TRANSFER

Title of the project	Hybrid power supply for technical consultancy laboratory for the use and promotion of renewable sources and energy
Type of the project	OPVaV
Number of the project	ITMS 26220220056
Main Investigator	Doc. Ing. Bohunil Taraba, CSc.
Time period of the project	2009-2012

Annotation of the project Prototype of a hybrid source-based RES construction (hydro-potential, solar, biogas and bioethanol) for long term testing and promotion. Through the proposed interventions the prestige of research will be increased, which will also lead to increased interest in the quest for talent and higher employment in this field. The benefit will be new creative ideas and flexible responses to the needs of small enterprises and their closer cooperation. The resulting effect will be more competitive research teams within the national research, more interest in small and medium enterprises to conduct research focused on innovation in public research institutions, universities and other research centers. Slovak research teams will also compete at the international level, bringing the Slovak research development greater cooperation with the international environment and higher success of Slovak applicants in the 7th Framework Program of EU and other EU initiatives.

NATIONAL PROJECTS

Title of the project	The exploitation of advanced oxidation processes in removal of organic pollutants from machine industry wastewaters by the use of wastes from production and treatment of metals as catalysts.
Type of the project	VEGA
Number of the project	1/0352/09
Main Investigator	Maroš Soldán, Assoc. Prof. PhD.
Time period of the project	2009-2011

Annotation of the project The research focuses on innovation of degradation processes of organic pollutants in wastewaters by the use of oxidation in the presence of catalysts. Some wastes from treatment and production of metals will be used, such as red mud, black nickel mud, etc. The new possibilities for reduction of environmental impact from cutting and surface processes will be tested.

Title of the project	Materials in fire protection - college textbook and recent educational tools in the field of protection to the persons and property and related fields.
Type of the project	KEGA
Number of the project	015-002TUZVO-4/2010
Main Investigator	Karol Balog, Professor, PhD.
Time period of the project	2010 - 2011

Annotation of the project Creation of modern textbook, printed and electronic teaching aids for education at all three levels in the protection of persons and property and related fields in particular to support the external forms of education with on-line access for workers in the field of fire protection and security. The involvement of recognized experts from two universities, test, and practice fire companies to update and bringing new knowledge about the structural and functional materials. Possibility of verifying the basic knowledge and methods of evaluation, certification of materials. Integration of product information, the knowledge of the practice, the results of laboratory tests and safe handling, transport and processing in terms of fire protection.

Title of the project	Natural phenomenon for small and big issues in experiments.
Type of the project	APVV
Number of the project	LPP-0171-07
Main investigator	Anna Michalíková, MSc. Eng.
Time period of the project	2008 - 2011

Annotation of the project A communication portal will be created that will be oriented to the pilot ideas: environmental education and health, physics in common life, astronomy, alternative sources of energy, wastes and recycling ... (Realized after consultations - investigation - with teacher from basic and secondary schools). It will facilitate communication with the public and students of basic and secondary schools. E-materials and recorded experiments will be published on the created web page (it could be used in pedagogical process, also in preparation of talented students to some competition). During the preparation of materials, from teacher´s requirements for experiments will be determined which are not able to be realized due to dangerous chemicals, absence of tools and instruments).

VISITS OF STAFF MEMBERS TO FOREIGN INSTITUTIONS

Employee	**State**
Tureková Ivana	Czech Republic, Poland
Balog Karol	Belgium, German
Martinka Jozef	Poland, Czech Republic
Boleman Tomáš	Czech Republic
Fiala Jozef	Czech Republic
Kuracina Richard	Czech Republic
Sirotiak Maroš	German
Chrebet Tomáš	Czech Republic
Beluská Miroslava	Norway
Hrušovský Ivan	Norway
Vékony Peter	Norway

MEMBERSHIP IN SLOVAK PROFESSIONAL ORGANISATIONS

Slovak Academy of Science / Slovak Botanical Society
Miroslav Rusko, PhD.

Slovak National Accreditation Society SNAS
Karol Balog, Professor, PhD.

Slovak Standards Institute TC 15
Jozef Martinka, PhD.

Slovak Standards Institute TC 17
Karol Balog, Professor, PhD.
Jozef Martinka, PhD.
Tomáš Chrebet, PhD.

Slovak Standards Institute TC 39
Ivana Tureková, Associated Professor, PhD.

Slovak Standards Institute TC 29
Jozef Harangozó, PhD.

Slovak Standards Institute TC 72
Miroslav Rusko, PhD.

Slovak Standards Institute TC 91
Ivan Hrušovský, PhD.

Slovak Standards Institute TC 105
Richard Kuracina, PhD.

Slovak Academy of Science / Slovak Chemical Society
Richard Kuracina, PhD.

Slovak Academy of Science / Slovak Ecology Society
Miroslav Rusko, PhD.

Civic Association UMBRA
Maroš Sirotiak, MSc.

Nature Protection Club
Maroš Sirotiak, MSc.

Slovak Association for Landscape Ecology
Miroslav Rusko, PhD.

Slovak Society for Environment – The Association of Slovak Scientific and Technological Societies
Miroslav Rusko, PhD.

Futurological Society in Slovakia
Miroslav Rusko, PhD.

MEMBERSHIP IN INTERNATIONAL PROFESSIONAL ORGANISATIONS

Czech Republic Firework and Safety Engineering Association
Karol Balog, Professor, PhD.

International Institute of Welding IIW
Karol Balog, Professor, PhD.

European Network Education and Training in Occupational Safety and Health (ENETOSH)
Karol Balog, Professor, PhD.

International Association for Landscape Ecology
Miroslav Rusko, PhD.

PUBLICATIONS

Journals

[1] Andráš, Peter - Aschenbrenner, Štefan - Dubiel, Ján - Rusko, Miroslav: Are the rocks from the surrounding of Pezinok (Malé Karpaty Mts.) suitable for utilisation as a building material? In: Nehnuteľnosti a bývanie. - ISSN 1336-944X. - Vol. 6, No. 2 (2011), p. 83-87.

[2] Balog, Karol - Markovič, Peter: Colourful labeling of gas bottles. In: Safety Work. - ISSN 0322-8347. - Vol. 42, No.. 3 (2011), p. 35-38.

[3] Balog, Karol - Hrušovský, Ivan - Ďureje, Jozef: Simple Methods for Determing the Inclination of Solid Materials to Self-Ignition. In: Spektrum. - ISSN 1211-6920. - Vol. 11, No. 1 (2011), p. 6-7.

[4] Harangozó, Jozef - Tureková, Ivana - Rusko, Miroslav: Influence of retardants to burning of lignocellulosic materials. In: Nehnuteľnosti a bývanie. - ISSN 1336-944X. - Vol. 6, No. 2 (2011), p. 118-123

[5] Hiller, Edgar - Zemanová, Lenka - Sirotiak, Maroš - Jurkovič, Ľubomír: Concentrations, distributions, and sources of polychlorinated biphenyls and polycyclic aromatic hydrocarbons in bed sediments of the water reservoirs in Slovakia. In: Environmental Monitoring and Assessment. - ISSN 0167-6369(PRINT). - ISSN 1573-2959 (ONLINE). - Vol. 173, Iss. 1-4 (2011), p. 883-897

[6] Hiller, Edgar - Sirotiak, Maroš - Tatarková, Veronika - Jurkovič, Ľubomír: Occurence of selected organochlorine pesticide residues in surface sediments from the Velke Kozmalovce, Ruzin and Zemplinska Sirava water reservoirs, Slovakia. In: Journal of hydrology and hydromechanics = Vodohospodársky časopis. - ISSN 0042-790X. - Vol. 59, Iss. 1 (2011), p. 51-59.

[7] Kasalová, Ivana - Balog, Karol: Minimum ignition temperatures of food dust clouds determinated by planned experiment. In: Annals of The Faculty of Engineering Hunedoara. - ISSN 1584-2665. - Tom IX, Fas. 1 (2011), p. 97-102.

[8] Kopáčiková rod. Morávková, Ivana - Soldán, Maroš: Ozonization utilize for elimination of the phenantren in aqueous solutions. In: Waste Forum [on-line]. - ISSN 1804-0195. - No. 2 (2011), p. 111-118.

[9] Kordošová, Miroslava - Balog, Karol: Work Conditions, Work Safety and Employment of Persons with Health Disability. In: Safety Work. - ISSN 0322-8347. - Vol. 42, No.. 3 (2011), p. 21-26
[10] Kuracina, Richard: Risk Analysis Possibilities in the Fire Protection. In: Spektrum. - ISSN 1211-6920. - Vol. 11, No. 1 (2011), p. 32-35.

[11] Michalíková, Anna - Sirotiak, Maroš: Festival of Experiments. In: Quark. - ISSN 1335-4000. - Vol. 17, No. 9 - appendix (2011), p. 1-5

[12] Ožvoldová, Miroslava - Schauer, František - Čerňanský, Peter - Gerhátová, Žaneta - Tkáč, Lukáš - Beňo, Miroslav - Žovínová, Michaela: 1st Slovak Natural Sciences e-Laboratory. In: Obzory matematiky, - ISSN 1335-4981. - Vol. 40, No. 2 (2011), p. 31-37.

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INSTITUTE OF APPLIED INFORMATICS, AUTOMATION AND MATHEMATICS

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Staff

- Professors: 4
- Assoc. Professors: 9
- Senior Lecturers: 19
- Research Fellows: 5
- PhD Students: 40

ACTIVITIES AT THE INSTITUTE

Date	Title of event, activity characterising the life at the Institute in 2011
28.4. 2011	On the 28.4.2011 the seminar of the employee BMW Group Dr. Ing. Nagy with topic: "Software Engineering in Car Industry". The lecture was focused on: challenges by development of software for modern car, overview of all software types in car, application of existing paradigm of software development, methods of modelling and today's applied standards. He presented also the possibilities of diploma thesis in the company BMW, as well as the possibility to participate on the student mobilities in BMW.
11.5.2011	AIA DAY - friendly football minicompetition. Sport morning for pedagogues, PhD students and students at UIAM organised with students at MTF STU, the event was connected with social evening in the Students club AMOS.
9.6. 2011	Seminar to the project IPID with prof. Dr. Husár from University of Technology in Ilmenau: as a part of the project IPID there was presented the possibility to make PhD research at the partnership university. The help

	all PhD students to reach overnational dissertations and Slovakia as well as Germany can gain high-qualified researchers. It represents also a possibility to build reserach cooperation relations between both countries.
5.10. 2011	Bilateral discussion on possibility to create research cooperation between the representatives of the National Research University ITMO, St. Petersburg, Russia and UIAM MTF STU. The participants were: Alexey A.Bobtsov , Professor, Dr. Sc., Dean of Department of Computer Technologies and Controlling Systems and Artem Kremlev, PhD., vice dean.
3.10.2011	Lecture with topic: Actual trends in the area of Company systems Lecturer: Ing. Vladimír Šurka, EXE s.r.o Bratislava Former graduate of the MTF STU in Trnava presented new trends of the company development IS. Ing. Šurka presented topics of diploma thesis for the students at UIAM.
9.11.2011	Lecture with topic: Integration of Information Systems Lecturer: Ing. Alexander Cimbaľák, ACE enterprise Slovakia, Bratislava Owner of more world-known awards in IT area, he presented possible solutions for IS integration to the students of the 2nd Study year, master form. He presented the practical example of integration with application of ACE enterprise integrator. Ing. Cimbaľák led also practical seminar with topic integration of information systems.

EDUCATION AT THE INSTITUTE

STUDY PROGRAMMES

Applied Informatics and Automation in Industry
Automation and ICT Implementation in Processes

Number of the students (till 30.10. 2011) on the study programmes guaranteed by the institute: 633
Number of the graduates (2010/2011) on the study programmes guaranteed by institute: 172

GRADUATE PROFILE

BACHELOR PROGRAMMES (Bc.)

Applied Informatics and Automation in Industry
The graduate will obtain the first level university education in the interdisciplinary field of study in Automation and Applied Informatics. The interdisciplinary study allows application of skills in industry and also in the service sphere.
The graduate will understand the information systems of an industrial enterprise and control systems of technological and production processes. He will know the processes and the methods of implementation and operating of information technologies and automation.
The graduate of this major will have basic knowledge of automation and informatics and will be able to implement it in computer-aided systems. He will have knowledge and skills in the field of machine technology, automation and ICT implementation in processes as well as fundamentals of diagnosing, collecting, processing and transferring data, along with experience in programming, computer modeling and simulation. Operation of automatic measuring, control and information systems contribute to the graduate's ability to solve problems regarding the implementation and utilisation of computational and automation technology. He will gain knowledge of natural science within the first degree of university study, mathematical and physical basics of automation and computer science.

The graduate will be able to implement and operate IT systems. He can work alone or also as a member of a team. He has good skills to analyse automation and information technology requirements as well as implement and operate automation equipment and information technologies in control systems.
He will be aware of social, moral, legal and economic contexts of his profession and the consequences of automation and information technology application.
He will be ready to perform in the field of industry and services as well as to study the second degree in automation and applied informatics.
The graduate will successfully operate in jobs connected with the implementation, operation and maintenance of control and information systems for technological processes control and data processing in various fields of industry.

MASTER PROGRAMMES (MSc./ Eng.)

Applied Informatics and Automation in Industry
The graduate will obtain extensive knowledge of theoretical and applied scientific disciplines necessary to understand patterns during the physical, technological, informatics, automation and control processes in industrial companies and organizations, even at the description level of abstract models.
The graduate will master basic technological processes of industrial production and the structure of manufacturing. This knowledge will allow him to design systems and ways of their automated control and information support. His designs will be in regard to environmental and ecological aspects. The graduate will also know the systems of data collection, data processes and data transmission from the process level to the business level.
He will have deep knowledge of the theory of systems, process automation, automation equipment, algorithms, information technology, programming, data processing and data transmission, information systems, real-time systems, visualisation systems of processes, systems for

decision support in business activities, systems integration, etc.
The graduate will be able to analyze, design and maintain a huge amount of information of technology systems and specific types of information systems for control processes and decision support regarding specific requirements of the enterprise, organization or institution.
He will be aware of social, moral, legal and economic contexts of his profession in accordance with professional, ethical and legal frameworks applicable to the area of applied information technologies and automation.
The graduate will be ready for an immediate entry into the labour market as well as for the third study degree. He will be prepared to develop his scientific potential in information technologies and automation.
The graduate will successfully perform not only in design and operation of information and control systems in industrial plants, but also in design or consultancy offices for institutions, information, management and telecommunications systems, software engineering, as well as in schools in educational institutions.

POSTGRADUATE PROGRAMMES (PhD.)

Process Automation and Informatization

- The graduate will have expertise in modern fields of automation and control processes utilising information technologies in the development of new methods, algorithms and procedures on the level of a scientist and a researcher. Depending on the choice of elective subjects, he can specialize in the areas of complex systems by utilising information technologies, in the field of modern flexible manufacturing systems or intelligent management techniques with artificial intelligence.
- The graduate will master mathematical principles, theory and cybernetics methodology combined with advanced methods, theories of management and automation. He will know the principles and methods for designing the complex systems and complex systems of information technologies.
- The graduate will be able to analyze and define the problems of scientific research, implement projects by using the latest formal tools and experimental procedures in accordance with the EU legislation.
- The graduate will understand the background of automation, control and related sciences as well as the physical fundamentals of the originally implemented solutions for automated and automatic control, information technology, preparation and management of experiments, modelling and simulation.
- He will be aware of the social, moral, legal and economic aspects of his profession as a scientist or a researcher.
- The graduate will be ready for scientific or research work in the field of research and development of new methods for the management of complex systems based on the latest information about control algorithms, etc. He will also be ready to articulate the problem and lead the research team professionally.

He can successfully perform as a top development researcher in the top scientific, research and academic institutions in both domestic and foreign labour markets.

LIST OF SUBJECTS GUARANTEED WITH THE INSTITUTE

Applied Mathematics
Automation of Data Acquisition and Processing
Bachelor Thesis
Bachelor Project
Graduation Thesis
Diploma Project
Dissertation Project
Graphical and Multimedia Systems
Information systems
Real-Time Information Systems
Information Technologies
Integration of Production Control Systems
Intelligent Control Methods
Internet Technologies
Communication Technologies
Mathematical Methods of Experiment Planning and Evaluation
Mathematics I
Mathematics Il
Mathematics lll
Modelling and Simulation of Systems
Neural Networks and Genetic Algorithms
Object Oriented Programming
Practice
Pedagogic Activities
CIM (Computer Integrated Manufacturing)
Computer Architecture and Operating Systems
Computer Graphics and Digital Image Processing
Computer Networks
Advanced Internet Technologies
Programming Languages
Programming of Industrial Controllers
Programmable Logic Controllers
Control System Design
Knowledge Representation and Inference Mechanisms
Control of Flexible Manufacturing Systems
Software Project Management
Production Systems Control
Simulation Optimization in Production Systems Control
Software Engineering
Decision Support Systems
Technical means of automating control
Automatic Control Theory
Systems Theory
Complex Systems Theory
Information Systems Development
Basics of Automated control

GRADUATE THESES

BACHELOR THESES

Bago, Martin:	Design and implementation of local information system - module museum
Belaň, Marek:	Application for synchronization between SugarCRM and mobile devices with OS Android
Brunovský, Filip:	Digitizing analog audio record from vinyl record
Celláryová, Michaela:	Technical Resources for Computer Graphics
Duchovičová, Soňa:	Optical identification systems of persons
Fabian, Miroslav:	Project application on calculate static moments and centre of gravity
Foltinovič, Maroš:	Software Tuner for Defined Musical Instruments
Gaboň, Ján:	Design and realization of system to process control for production planning
Gallo, Ján:	Analog versus IP camera systems
Hájek, Tomáš:	Technical equipment increasing the security of objects
Hopka, Peter:	Analysis of graphic objects conflicts in plane
Hrčka, Lukáš:	Internet application for the needs of the municipal government
Chytil, Martin:	Designing of executive programme for robotic workstation to prepare pathological preparations by staining
Ivaniš, Ľubomír:	Creating a virtual object in WinCC and connected it with control program
Jankto, Martin:	Development of an Enterprise Information System using UML
Kačinec, Peter:	The projection of informational system for SFU
Kicsindi, Tomáš:	Motion simulation model of the robot for robotic work on the preparation of pathological specimens staining
Kimlička, Ondrej:	Design of commission information system for multilevel marketing
Kmeť, Milan:	Creating an application for code transcription between programming languages
Koprda, Dávid:	Compression image photo formats
Kordoš, Miroslav:	Controlling of sunshade
Kováč, Roman:	Transformation of analogue audio record from magnetic tape to digital format
Krajčík, Juraj:	Design of internet server and its security with use of open source systems
Krchňavý, Erik:	Design and realization of physical model for S7 – 300
Krutý, Ľubor:	Submission of information system to monitor devices for radiation protection at Nuclear power plant
Kubovič, Michal:	Wireless network solution for apartment block or company
Lancz, Róbert:	Three-dimensional displays
Loboda, Otto:	Graphic formats of the video from the view of their location on the web sites
Malovcová, Lenka:	Proposal of the information system for a real estate agency utilising UML
Medveď, Martin:	Calibration of digital camera parameters
Morvajov, Maroš:	Design and implementation of a small information system in a web environment - module E-Shop
Mosor, Tomáš:	The Multimedia application for the support of the teaching subject the Information technology
Motola, Juraj:	Wireless Network Security for IEEE 802.11
Németh, Martin:	Design and Implementation of the local is in Web Environment Using UML
Nyigri, Norbert:	Projection and realisation of control system SIMATIC S7-300 for production station
Ondroušek, Marián:	Methods for the creation of helpdesk files production
Pápay, Peter:	Redesign and optimization of a website
Peško, Daniel:	Controlling of stepping motor by microprocessor
Peterková, Andrea:	The compression of graphic formats of photographs
Pinayeva, Anastasia:	Drawing Human Faces
Pohančaník, Roman:	Design and Implementation of Project Management
Rimovský, Tomáš:	Wireless transmission of binary/switching and analog signals in industrial automation
Sekerka, Rudolf:	Project navigation light in home for orient in darkness
Schneider, Juraj:	Compression graphics video formats
Sláviková, Adriána:	Project application on calculate static moments and centre of gravity
Slovák, Filip:	The principles of structured cabling and suitability of used technology
Šándor, Michal:	Design of web-based system for single-entry accounting
Šteruský, Ľubomír:	The solution wireless network for house or firm
Štica, Marián:	Proposal and implementation of information system for hospital
Urban, Jakub:	Web site for publishing and administrating manuals
Vadkerti, Peter:	Effect of the compression of graphic formats on the optimal emplacement of video to the web
Večera, Patrik:	Proposition and realization of small IS with using UML
Wagner, Adrián:	Design and implementation of local information systems in the Web
Wágner, Matej:	Implementation of test equipment for UNIFREM converters and associated control program for testing on the PLC VIPA
Zastko, Kristián:	The exploitation of wireless technology in electronics

MASTERS THESES

Antal, Ján:	Design and implementation of IS using BPMN and UML
Baďurík, Roman:	Catalog services digitisation
Bakus, Andrej:	Interactive visualization of tree traversal algorithms
Bakus, Michal:	Interactive visualization of graphics algorithms in Java
Bednárik, Daniel:	Design and implementation of a virtual object and the related control program for the station Simatic S7-300
Benc, Adam:	Suitable design and application of shielded and unshielded cable in practice
Bírová, Elena:	Proposition of an information system for the Home of Slovak Writers, utilising UML
Blaho, Boris:	Proposal for an online store using UML
Blaho, Ľubomír:	Portal for computer networks
Bočkay, Ľubomír:	Web system for monitoring development of prices of products of selected contractors
Brázdil, Lukáš:	Edge Detection in Digitized Technical Drawing
Bučko, Peter:	Overall equipment effectiveness in Zentiva, a. s. Hlohovec
Cepko, Lukáš:	The purpose and realization of small IS – module stock holding for a firm
Čaja, Martin:	Comparison of classical and fuzzy approach to selected examples of PI control
Didik, Vladimír:	Integrated security system and its application in practice
Dlhý, Martin:	Analyze and design of data warehouse for industrial plant
Dudáš, Michal:	VOIP telephony solution using Asterisk® PBX software
Ďurčová, Veronika:	Design and Implementation of an Information System for a Dental Laboratory
Ďuriš, Julian:	Integrated monitoring CCTV
Ďuriška, Roman:	The design and realization of information system for Slovak post
Ešše, Viktor:	Information system for small business - application in the web
Faidzen, Andrei:	Design and implementation of small IS - module for gardening company (ENGO s.r.o
Gubrický, Ľubomír:	Decision exploitation SCM systems for control material flow in industrial establishment
Habala, Matúš:	Improving the production of automotive shock absorbers using simulation
Chamraz, Tomáš:	Information system to support production
Chudý, Vladimír:	Proposal for managing windows in a smart house
Jankovič, Igor:	Analysis of a mechatronical system of quality control
Januška, Tomáš:	IP video camera system and its practice
Jarábek, Martin:	Proposal of information system for municipal authority with utilization UML
Juran, Jerguš:	Computer Network Security using by IDS
Kaba, Juraj:	Design of the Automated Software Testing Model with UML
Knotek, Marián:	The design of NN-based intrusion detection
Košík, Michal:	Information system for task management support
Kováčik, Michal:	Framework of the outline of the room created by the set of photographs
Kovár, Branislav:	Module for metering of main power consumption with interface to connect with PC
Královič, Lukáš:	Improving the production of car bumpers using simulation
Kuchárek, Ľuboš:	Proposal for IP video surveillance system and restructuring LAN
Kurbel, Peter:	The electronic model of an intelligent house
Kurnátová, Júlia:	Review of strategies in production management
Lacko, Andrej:	Improving efficiency of upholstered sofas production by using simulation
Lády, Jozef:	Design and implementation of small IS for a plumbing company
Lády, Martin:	The Design and implementing of small IS – module of accommodation equipment
Lago, Peter:	UML portal design and its implementation
Lelovský, Róbert:	Improvement of skate production with usage of simulation
Libošvárová, Adriána:	Segmentation of images
Lichner, Andrej:	The Design and implementation of a small IS - module private language school
Lukáč, Martin:	Creating methodical manuals and examples for selected physical models in laboratory
Lutišan, Marek:	Assessment of safety fire systems
Maar, Peter:	Comparative analysis of simulation software Witness and SimEvents
Malíšek, Gabriel:	Innovation of the training centre for automation
Malý, Martin:	Industrial camera control via internet
Mancovič, Miloš:	Frameworks for web development applications
Marek, Milan:	The Design and implementation of a small information system using UML and UP
Medlen, Jozef:	Design and implementation of a network and security system for the company UNIGASS spol. s r.o
Meliš, Marcel:	Information system for production and mounting of plastic windows
Mesároš, Rudolf:	Proposal for a draft of a complex system of protection of a property of a firm
Mikula, Tibor:	Design and implementation of management and visualization of test kit for drives from Siemens
Mikuš, Miroslav:	Simulation Study of Logistical Processes
Mile, Jakub:	Scheduling of manufacturing operations using priority rules
Murín, Peter:	Design and implementation of computer network monitoring using Zabbix system
Hrnčár, Lukáš:	The Design and implementing of small IS – module for bookstore
Neuschl, Zdenko:	Simulation JIS supply for the assembly line
Obal, Peter:	Risk Analysis of Safety Critical Fire Systems
Obecajčík, Dušan:	Corner detection for analyzing human images
Okáník, Peter:	Application of inertial measurement system in machining technology

Ondriga, Ľuboš:	Design and control of LED orientation lighting
Ostrovský, Martin:	Design and implementation of a CCTV system, using DigiEye technology
Pagáč, Marek:	Information management system with intelligent building management and promoting energy use automatic data collection
Pagáčová, Denisa:	Graphical programming interface for random language
Pastorek, Lukáš:	Evidence of autopark and machinery in agricultural company
Petrík, Róbert:	Safety Information System Organization/Company
Petrovič, Michal:	Evaluation of performance of production system for different strategy of control
Pitek, Ján:	The design of functions for smart house control system
Pizúr, Matúš:	Interactive software for ergonomic measurements
Plachotňuk, Denis:	Configuration design and implementation of network Begokon, p.v.o.d
Pobiecky, Jakub:	The evaluation of the influence of selected priority rules in operation scheduling on production objectives
Práznovský, Bohumil:	Use of intelligent bus in electrical installation of living spaces
Rehák, Rastislav:	Options for reducing production costs by simulation optimization
Rehák, Rudolf:	Proposed methods for solving selected problems regarding the integration of information systems and their use in teaching within a University
Rózsár, Zoltán:	Evaluation of chosen algorithms in simulation optimization
Rusňák, Ladislav:	Simulation analysis of furniture production via connection of simulator with operative production database
Saniga, Milan:	Motion control of window blinds in a smart house
Sedilek, Róbert:	Predictive performance analysis of virtual (planned) robotic casting line
Schmidt, Jozef:	Distribution and sharing of audio and video via the Internet
Sládek, Dušan:	Design and implementation of a continuous control system of automatic gas boiler by programmable relay Teco
Slama, Andrej:	The effects of the size of batch on selected production goals
Smolárik, Lukáš:	Temperature control in the areas of a smart house
Smutný, Vlastimil:	The project of the control system for pumps cooling water BQDV
Soják, Juraj:	Pre-design of ventilation system for the smart home
Sprušanský, Marek:	Creation of an electronic teaching portal on the topic of "Graph algorithms"
Stopka, Štefan:	On-line shop with selected goods with the possibility of registration and log-on of the customer
Strádej, Anton:	Design of a web application based on UML and its implementation
Strašifták, Andrej:	Application of inertial measurement system in machining technology
Svoboda, Martin:	Partial Suggestion Directive for Testing of Big Software Systems
Szászi, Tibor:	Application for the search of the fastest Public Transportation with pedestrian routing
Šebeň, Matej:	Metropolitan network application in practice
Šefčík, Matej:	Smoothing and gradient operations on images
Škerko, Marian:	Consolidation of IT infrastructure – Virtualization
Šmitala, Radovan:	Use of agile methodologies in software engineering
Števík, Andrej:	Configuration of the controller ESM YZAMER and processing of I/O signals
Ševlík, Stanislav:	The influence of selected priority rules in scheduling operations on production goals
Štrbo, Milan:	Application of priority rules in the process of scheduling operations
Švehlová, Dagmara:	Information security in a medical facility
Tomovič, Peter:	Securing and organising of Wi-Fi network
Turanský, Marek:	Analog versus IP camera system
Vaňúr, Roman:	Project and implementation of an information system for Shark Company using UML and UP
Varga, Milan:	The proposal control system for main circulation pumps
Vašíček, Peter:	Information system for biochemical laboratory with automated system of data capture
Vrabec, Ivan:	The use of prioritization in the dynamic process of manufacturing
Zahradník, Milan:	Designing and securing a network server based on virtualization techniques in OS LINUX
Zacharčok, Jozef:	Information management System for a multifunctional Building
Znamenák, Jaroslav:	The analysis of impact of priority rules in the process of scheduling operations on production objectives
Zubalík, Jaroslav:	Pre-design of a ventilation system for the smart home
Zuzula, Rastisla:	The suggestion of a HVAC control system

PhD THESES

Božik, Miroslav:	The methodology to prove device safety for spent nuclear fuel transport
Juráková, Anna:	The evaluation of the impact of the selected parameters of manufacturing process for the production targets
Kopček, Michal:	Power system process optimization at primary and secondary control levels

RESEARCH AT THE INSTITUTE

Area of research

- Regulation systems of technological and production processes (including of regulation quality questions, regulation optimization, intelligent regulation systems, sensitivity and robustness of regulation systems).
- Information and regulation systems IRS (reliability and security of IRS, IRS for secure critical processes, IRS of real time, SCADA systems, PLA/PLC).
- Mathematical modelling and system simulation.

Research characteristics

Research at the institute is focused on the informatization and automation of regulation processes on all levels of industrial production, meaning technological, production and management with accent on new trends in mentioned areas (development of intelligent regulation methods, new products in software aided areas, new trends in saving and gaining of information and others). The other developing area of research is a mathematical modelling and simulation of dynamic systems with fast feedback, especially in connection with design and effective regulation of high-frequency oscillators in electronic circuits as well as other technological areas where it is needed to generate non-linear vibrations with the possibility to modify amplitude and frequency of these vibrations.

Areas of expertises:

- Automation and Regulation of Processes
- Software Engineering and Information Systems

PROJECTS OF THE INSTITUTE

INTERNATIONAL PROJECTS

Title of Project	Improving the gender diversity management in materials research institutions (DIVERSITY)
Type of the project	7th Framework Programme
Number of the project	230253
Main investigator	Oliver Moravčík, Professor, PhD.
Time period of the project	2009-2011
Annotation of the project	The DIVERSITY project is an international consortium of 14 partners from 11 European countries: Germany, Austria, Belgium, France, Spain, Italy, Sweden, Slovenia, UK, Slovakia, and Greece. Project "DIVERSITY" is a 36 month project funded by the European Union within the 7th Framework Programme.

NATIONAL PROJECTS

Title of the project	Data mining usage in manufacturing systems control
Type of the project	VEGA
Number of the project	1/0214/11
Main investigator	Pavel Važan, Assoc. Prof. PhD.
Time period of the project	2011-2013
Annotation of the project	The project is oriented on the use of data mining techniques and gaining knowledge of manufacturing systems through them. They will be used in the management of these systems. The simulation models of manufacturing systems will be developed for obtaining the necessary data about controlled production systems. Different control strategies will be implemented in these simulation models. We will develop a way of storing data obtained from the simulation models in the data warehouse (it will include thousands of records). A data mining model using specific methods and selected techniques for a defined particular problem of production system management will be created. We achieve the new knowledge about the production management system by this way and also learn how to achieve these goals by changing the production parameters of a particular management strategy. Acquired knowledge will be tested on a simulation model of the production system. An important benefit of the project will be proposal of the methodology. This methodology is focused on data mining from the databases that store operational data during the manufacturing process.

Title of project	Content Integration and Design of a University Textbook for "Specialized Robotic Systems" in Print and Interactive Modules for University of Technology in Zvolen, Trenčín University and Slovak University of Technology in Bratislava.
Type of project	KEGA
Number of project	3/7285/09
Main investigator	Pavol Božek, Assoc. Prof. PhD.
Time period of project	2009-2011
Annotation of project	The project aims to develop an undergraduate textbook writing and interactive multimedia form. Movies made on robo-technologic specialist departments will complement each chapter and the aforementioned written university textbooks

Title of project	The teaching model of mathematics with the use of new technologies.
Type of project	KEGA
Number of project	021STU-4/2011
Main investigator	Mária Mišútová, Assoc. Prof. PhD.
Time period of project	2011-2012

Annotation of project The research project deals with the creation of ICT teaching model of mathematical courses. This teaching model was designed with the aim to increase flexibility and quality of teaching mathematical subjects at the Faculty of Materials Science and Technology in Trnava.

VISITS OF STAFF MEMBERS TO FOREIGN INSTITUTIONS

Employee	State
Božek Pavol, Assoc.Prof.Ing. , CSc.	Russia
Hamerník Peter, Ing.	Czech Republlic
Jurovatá Dominika, Ing.	Czech Republic, Norway
Kováč Milan, Ing.	Norway
Ľupták Vladimír, Ing.	Norway
Maňková Ingrida, Mgr.	Norway
Ondriga Martin, Ing.	Norway
Schreiber Peter, Assoc.Prof.Ing. , CSc.	Germany
Skripčák Tomáš	China
Škamla Michal, Ing.	Norway
Špendla Lukáš, Ing.	Norway
Tanuška Pavol, Assoc.Prof.Ing. , PhD.	Germany, France
Trnovský Peter, Ing.	Norway
Važan Pavel, doc.Ing. , PhD.	France
Vlkovič Ondrej, Ing.	Norway

MEMBERSHIP IN SLOVAK PROFESSIONAL ORGANISATIONS

Association of Slovak Scientific and Technological Societies
Mária Mišútová, Assoc.Prof. PhD.

Mensa Slovakia
Marcel Abas, PhD.

Slovak Association for Geometry and Graphics
Mária Mišútová, Assoc.Prof. PhD.

SASI – Slovenská asociácia strojných inžinierov (Slovak Association of Machining Engineers)
Pavol Tanuška, Assoc.Prof. PhD.
Pavel Važan, Assoc.Prof. PhD.

SSKI – Slovak Society for Cybernetics and Informatics of Slovak Academy of Sciences (member of IFAC)
Peter Schreiber, Assoc.Prof. PhD.
Pavol Tanuška, Assoc.Prof. PhD.
Pavel Važan, Assoc.Prof. PhD.
Oliver Moravčík, Professor, PhD.
Michal Eliáš, PhD.
Michal Kopček, PhD.
Martin Juhás, PhD.
František Miksa, PhD.
Eduard Nemlaha, PhD.
Maximilián Strémy, PhD.
Tomáš Bezák, PhD.
Michal Kebísek, PhD.
Miriam Iringová, PhD.
German Michaľčonok, Assoc.Prof. PhD.
Dušan Mudrončík, Professor, PhD.
Jozef Vaský, Assoc.Prof. PhD.
Andrej Eliáš, PhD.
Gabriela Križanová, PhD.
Bohuslava Juhásová, PhD.
Róbert Vrábeľ, Assoc. Prof. PhD.
Pavol Božek, Assoc. Prof. PhD.
Igor Halenár, PhD.
Pavol Bezák, PhD.

MEMBERSHIP IN INTERNATIONAL PROFESSIONAL ORGANISATIONS

IIA - International Informatization Academy, USA
Oliver Moravčík, Professor, PhD.

International Society for Geometry and Graphics, USA
Mária Mišútová, Assoc. Prof. PhD.

IUMB - International Union of Machine Builders, Ukraine
German Michalčonok, Assoc. Prof. PhD.
Peter Schreiber, Assoc. Prof. PhD.
Pavol Tanuška, Assoc. Prof. PhD.
Pavel Važan, Assoc. Prof. PhD.

IACSIT – International Association of Computer Science and Information Technology, Singapore
Oliver Moravčík, Professor, PhD.
Peter Schreiber, Assoc. Prof. PhD.
Pavol Tanuška, Assoc. Prof. PhD.
Pavel Važan, Assoc. Prof. PhD.
Róbert Vrábeľ, Assoc. Prof. PhD.
Igor Halenár, PhD.

European Platform of Women Scientists
Oliver Moravčík, Professor, PhD.

IAENG - International Association of Engineers, Hong Kong
Pavol Tanuška, Assoc. Prof. PhD.

IEEE - Institute of Electrical and Electronics Engineers, USA
Pavol Tanuška, Assoc. Prof. PhD.

PUBLICATIONS

Journals

[1] Abramov, A.A. - Božek, Pavol: Application of an inertial measuring system in machining. In: Machining - Machining. - ISSN 1335-2938. - Vol. XV., No. 12 (2011), p. 86.

[2] Bezák, Pavol: Using genetic algorithms in industrial robot optimal trajectory generation. In: Transfer inovácií. - ISSN 1337-7094. - No. 19 (2011), p. 91-93.

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[4] Božek, Pavol: Research Conference in Zvolen. In: Machining - Machining. - ISSN 1335-2938. - Vol. XV., No. 12 (2011), p. 72.

[5] Hagara, Igor - Tanuška, Pavol: Practical problems of data warehouse using in practice. In: Materials Science and Technology [online]. - ISSN 1335-9053. - Vol. 11, No. 1 (2011), p. 11-16.

[6] Halenár , Igor: Special techniques of data transmission in computer networks. In: Journal of Information Technologies. - ISSN 1337-7469. - No. 2 (2011), p. 1-6.

[7] Halenár , Igor: The self-organizing maps and their exploitation by controlling of an IDS. In: Transfer inovácií. - ISSN 1337-7094. - No. 19 (2011), p. 82-84.

[8] Haluška, Tomáš: Application of solution proposal for chosen problems through SOA. In: Materials Science and Technology [online]. - ISSN 1335-9053. - Vol. 11, No. 2 (2011), p. 18-26.

[9] Hatiar, Karol - Ondriga, Martin: Ergonomics in automated production. In: Machining - Machining. - ISSN 1335-2938. - Vol. XV., No. 12 (2011), p. 1-2.

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[13] Strémy, Maximilián - Závacký, Pavol - Jedlička, Martin: Event processing and variable part of sample period determining in combined systems using GA. In: Research papers Faculty of Materials Science and Technology Slovak University of Technology in Trnava. - ISSN 1336-1589. - Vol. 19, No. 30 (2011), p. 99-104.

[14] Strémy, Maximilián - Kopček, Michal - Bezák, Tomáš: Introduction to combined dynamic systems. In: Annals of Faculty of Engineering Hunedoara - Journal of Engineering. - ISSN 1584-2673. - Tom IX, Fasc. 3 (2011), p. 323-326.

[15] Strémy, Maximilián - Duchovičová, Soňa: Systems of optical identification of persons. In: Machining - Machining. - ISSN 1335-2938. - No. 9 (2011), p. 18-20.

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doara - Journal of Engineering. - ISSN 1584-2673. - Tom IX, Fasc. 3 (2011), p. 433-435.

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[18] Svetský, Štefan - Moravčík, Oliver - Rusková, Dagmar - Balog, Karol - Sakál, Peter - Tanuška, Pavol: Five years of research into technology-enhanced learning at the Faculty of Materials Science and Technology. In: Research papers Faculty of Materials Science and Technology Slovak University of Technology in Trnava. - ISSN 1336-1589. - Vol. 19, No. 30 (2011), p. 105-114.

[19] Svetský, Štefan - Moravčík, Oliver - Odlerová, Eva: The new approach for technology enhanced and computer assisted learning in teaching at the Faculty of Materials Science and Technology. In: Materials Science and Technology [online]. - ISSN 1335-9053. - Vol. 11, No. 2 (2011), p. 54-60.

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[29] Vrábeľ, Róbert: Boundary layer phenomenon for three-point boundary value problem for the nonlinear singularly perturbed systems. In: Kybernetika. - ISSN 0023-5954. - Vol. 47, No. 4 (2011), p. 644-652.

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Conference Proceedings

[1] Abas, Marcel: A note about the norm of gradient. In: Trends in education 2011 : 9. Year of International research conference, Olomouc. - Olomouc : agentura Gevak s.r.o., 2011. - ISBN 978-80-86768-34-2. - p. 13-15.

[2] Abas, Marcel: Isomorphism of reverse Cayley digraphs for symmetric and alternating groups. In: 46th Czech-Slovak Conference on Graph Theory : Abstracts. Šachtičky, 2011. - p. 16.

[3] Božek, Pavol - Abramov, Andrej - Okánik, Peter: Application of inertial measurement system in machining technology. In: Informatics and Automation in Process Regulation : VII. Research conference with international participation, Zvolen, - Zvolen : University of Technology in Zvolen, 2011. - ISBN 978-80-228-2267-1. - p. 7-14.

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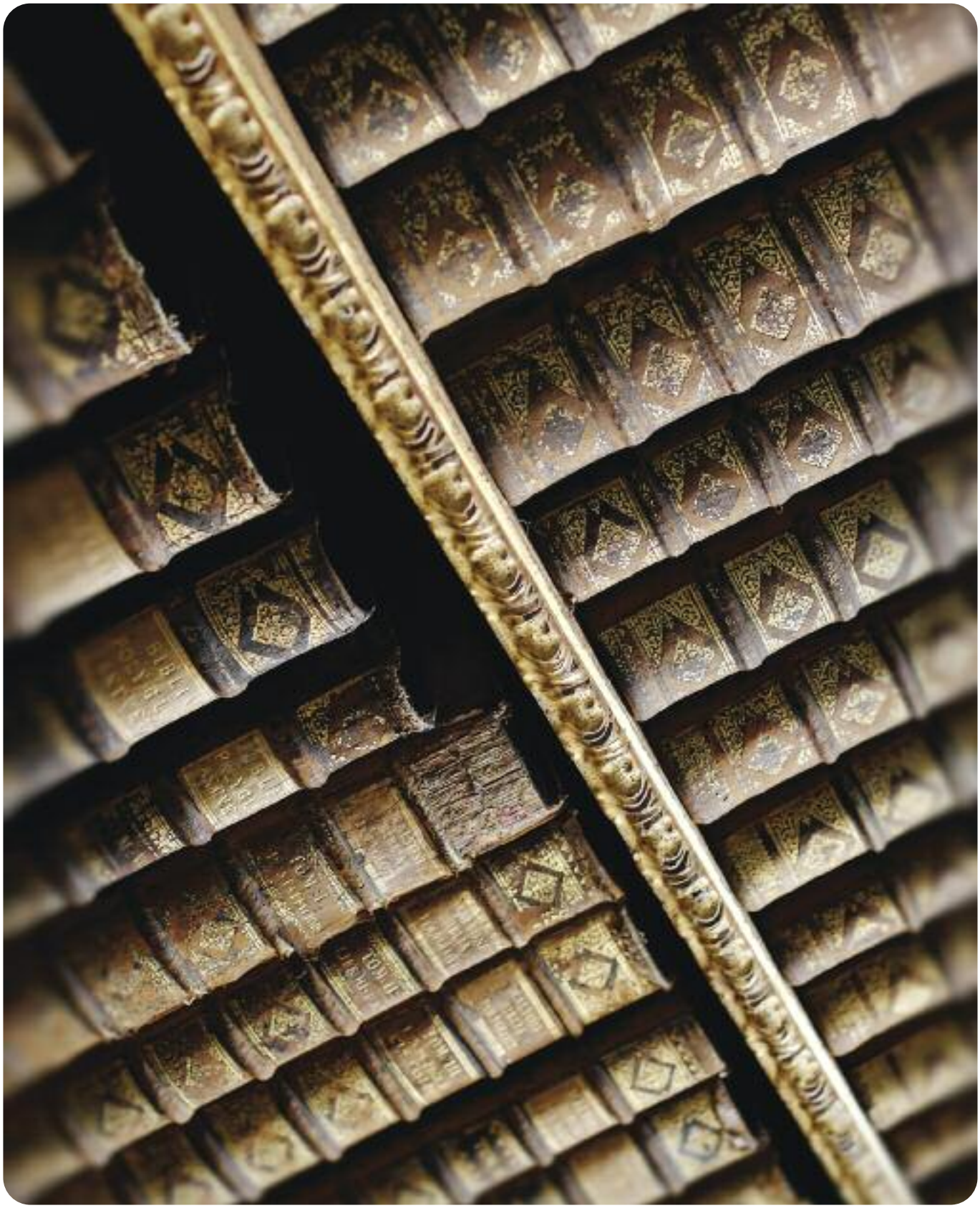

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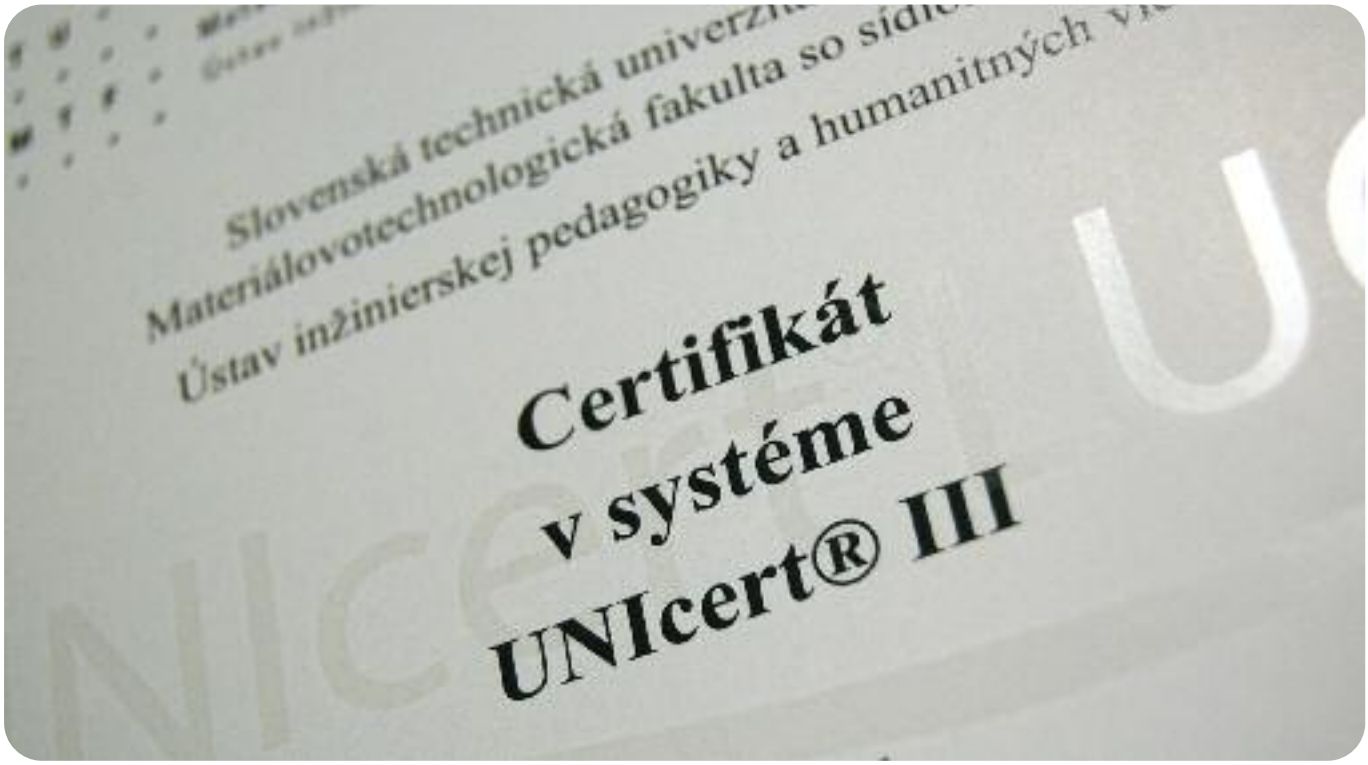

Institute Departments

- Department of Engineering Pedagogy and Psychology
- Department of Humanities
- Department of Professional Language Communication
- Department of Physical Education and Sports

Staff

- Professors: 2
- Assoc. Professors: 3
- Senior Lecturers: 24
- Research Fellows: 4
- PhD Students: 20

EDUCATION AT THE INSTITUTE

STUDY PROGRAMMES

Bachelor degree
- Personnel Work in Industrial Plants

Master degree
- Teaching Specific Engineering Subjects

Postgraduate degree
- Didactics of Engineering Professional Subjects

Number of the students
(till 30.10. 2011) on the study programmes guaranteed by the institute: 566
Number of the graduates
(2010/2011) on the study programmes guaranteed by institute:267

GRADUATE PROFILE

BACHELOR PROGRAMMES (Bc.)

Personnel Work in Industrial Plant
The graduate understands the strategy of personnel management and its connection with theory and practice of market mechanics. The knowledge and skills gained, including computer literacy, will allow him/her to manage human resources successfully. S/he will be able to solve complex personnel problems regarding the requirements of entrepreneurial subjects and their economical, legal and moral limits. The graduate will successfully perform as a personnel or finance manager on various levels of management in larger, medium-sized and smaller companies, in agencies and in both governmental/non-governmental and profit/non-profit organisations. S/he is well prepared to become a highly competent member of management in lower organisational structures, including the field of financial management.

MASTER PROGRAMMES (MSc./ Eng.)

Teaching Specific Engineering Subjects
The graduate is well familiar with job profiles and activities in the related field, is able to participate in the development of teaching methodology manuals and is aware of social, moral, legal, economic and environmental aspects of his/her profession. S/he is prepared to design the stages of life-long education of adults and to implement them in practice, to adapt educational programmes for a particular type of educational institution and particular groups of students, and to communicate pedagogical and professional knowledge effectively to a wider professional and lay communities. The graduate is ready to perform as a teacher of vocational subjects, a teacher-trainer in the field, or an instructor in the governmental administration and the institutions of further education and education of adults.

POSTGRADUATE PROGRAMMES (PhD.)

Didactics of Technical Professional Subjects
The graduate is able to identify, analyse and solve the demanding issues of an empirical and conceptual character, as well as to plan, organise and evaluate the research in the related field. The graduate can either lecture didactics of professional subjects at teacher-training faculties preparing the teachers for secondary technical schools, or work for research and development and methodology centres requiring ISCED 7 (level in international classification of education), as well as for governmental administration and educational institutions as an expert in the fields of methodology, research and development and programme concepts.

LIST OF SUBJECTS GUARANTEED WITH THE INSTITUTE

Bachelor Project
Bachelor Thesis
Biological Fundamentals of Evolution
Biology of Teenagers
Current Trends in Education
Didactics of Engineering Subjects
Didactics of Professional Training
Diploma Project
Diploma Thesis
Dissertation project
Dissertation project - methodology of pedagogical research
Dissertation thesis
Engineering Pedagogy
English for Specific Purposes
English Language
Ethics
European integration processes
Fundamentals of Communication
Fundamentals of Ethics
Fundamentals of Law Education
Fundamentals of Law Education Recovery
Fundamentals of Law for Technologists
Fundamentals of Law for Technologists and Managers
Fundamentals of Philosophy, Methodology and Logic
General Economic Theory
German for Specific Purposes
Handling Labour Conflicts
Handling Work Problems
History of Economic Theories
History of Science and Technology
History of Technology and Vocational Education
ICT in Education
Industrial Psychology
Industrial Sociology
Introduction to Research Methodology
Introduction to Scientific Work
Introduction to University Study
Management of Secondary School
Master Thesis
Material Didactics Resources
Mental Hygiene
Outstanding Personalities of Slovak Science
Pedagogical Practice
Pedagogy
Philosophy of Technology
Physical Education and Sports - optional
Physical Education and Training
Practice
Production Practice
Prognostics
Psychology
Psychology in Managerial Jobs
Psychology of Health
Psychology of Occupational Safety
Recreational Physical Education and Sports
Research
Selected Chapters of Andragogics
Selected Chapters of Evolutionary and General Psychology
Selected Chapters of General and Evolutionary Psychology
Selected Chapters of Labour Psychology
Selected Chapters of Pedagogical Psychology
Selected Chapters of Pedagogy
Selected Chapters of Social Psychology
Semester Project
Seminar on Pedagogical Practice
Slovak Language for foreigners
Social and Personal Counselling
Social Ecology
Social Communication
Social Policy
Sociology
Sociology of Education
Sociology of Management
Sociology of Work
Synergetic
Theory of Education
Total Quality Management
Winter training camp for students
Leading to enterpreneurship

GRADUATE THESES

BACHELOR THESES

Bacigalová, Petra:	The personal growth of employees and their career in company PSA Peugeot Citroën Slovakia
Baďura, Dušan:	Proposed measures for improving the system of evaluation and compensation of employees in the company JMT SK sro
Bajkai, Ľudovít:	The collective agreement in ZSSK CARGO Inc.
Bányiová, Terézia:	Solving personal problems in Ikar, Inc.
Bašová, Jaroslava:	Appreciation of the working environment
Bobák, Ján:	Development analysis of unemployment in district of Puchov
Bordášová, Katarína:	Allocation of labour and adaptation of employees in the company Samil Balenie Ltd.
Boros, Ádám:	Project of the measures for bettering the care of the employees at the Medzičilizie JSC
Bubáková, Martina:	Recruitment and selection of employees in the company JAVYS, a.s.
Bysterská, Jana:	Training of employees in an industrial enterprise
Cabanová, Dagmara:	Attitude of secondary school students towards regular sports activities except for lessons of physical education
Csóka, Barbara:	Proposed measures to improve the education and development of employees in company SK – CONT, JSC
Csontos, Dávid:	Educational system of employees in Sauer - Danfoss. a. s. Považská Bystrica
Červeňanová, Dana:	System of personnel operations in a selected firm
Deckárová, Martina:	Analysis of corporate culture and proposed solutions for improving Recruitment
Domaracká, Petra:	Recruitment, selection and receiving of employees in company Foxconn Slovakia, spol. s r.o.
Dubcová, Jana:	Recruitment, selection and recruitment in the enterprise Stakotra Manufacturing, s. r. o.
Duchoňová, Jarmila:	Collective agreement in the Zlievareň Trnava, Ltd.
Ďurišová, Lucia:	Selection and recruitment of employees in the industrial company
Dúšalová, Monika:	Educational system of employees in Sauer - Danfoss. a. s. Považská Bystrica
Fábiánová, Eva:	System training and staff development in business SLK ELEKTROs.r.o.
Feketová, Mária:	Analysis of internal communication in the workplace ŽOS Trnava a. s
Gaňová, Zuzana:	The Manager´s Education in Intermediate Enterprises
Gašparíková, Klaudia:	Proposal of employee education system in the company
Holíčková, Miroslava:	Proposal for improving the learning process and rating by employees
Hollá, Janka:	Suggestion of arrangements how to make staff evaluation more effective in ZVS holding, a. s. company, Dubnica nad Váhom
Hovančíková, Marcela:	Recruitment, selection and hiring of new employees
Hudáková, Martina:	Intercultural communication in Samsung Electronics Slovakia, Inc
Ivašková, Zuzana:	Students' autonomy, responsibility and teamwork
Jamrichová, Silvia:	Innovation in human resources management system
Janečková, Vladimíra:	Inproving the system of motivation in undertaking JAMP
Jereová, Michaela:	System design evaluation and compensation of employees in organization Research Institute of Water Management Bratislava
Kadlecová, Martina:	Proposal for improving the education of employees
Kamhalová, Renáta:	System training and staff development in Machintec Trade Company, Ltd.
Kaprálik, Roman:	Adaptation of employees in POWER ONE, Ltd in Dubnica nad Váhom
Klimičková, Ľubomíra:	Proposal for a system of selection and admission of employees for the company
Kliský, Matej:	Analysis of unemployment in the Roma district of Komarno
Kňazíková, Dáša:	Testing and evaluation of students in secondary vocational schools
Kolenová, Monika:	Job interview and proposal to recording sheet from the interview in the company PSA Slovakia
Koníčková, Jana:	Evaluation of e-learning´s exploitation in companies
Košťálová, Martina:	Proposals to increase the efficiency of the admission procedure in the company STAKOTRA MANUFACTURING, Ltd. Piešťany
Kovács, Pavel:	Collective agreement in industrial company
Kozáková, Monika:	Recruitment, selection and receiving of employees in the company MEDEKO CAST s.r.o
Kubajdová, Lucia:	Personality and status of the principal worker
Kubaláková, Barbora:	Analysis of a system of education and evaluation of the ŽELEZO HRANICE s.r.o. employees
Kubek, Jozef:	Education of employees in company as part of personal work
Kuchár, Jozef:	Educational system and development of the employees
Kulichová, Eliška:	Desing solutions of unemployment in facility Jazmin n.o. in Handlová
Kutyiková, Gabriela:	Motivation incentives of employees in ICOPAL
Lipták, Peter:	Search, Selection and Recruitment of Employees
Liptáková, Jana:	Collective Labor Agreement in Industrial Company
Liptáková, Jana:	Dress Code as a considerable factor of company culture
Lyšová, Katarína:	Incentive stimuli of employees
Makuková, Anna:	Incentive stimuli of employees
Marčeková, Lucia:	Proposal to improve the state of unemployment in the district of Trenčín
Martiniaková, Erika:	Suggestion for improvement in evaluation of emplayees

Mináriková, Daniela: Proposal of employee education system in the company
Modrovská, Monika: Recruitment, selection, employment
Mutňanská, Kristína: Corporate culture
Nedorost, Lukáš: Quality improvement in employee education system in the company Semikron, s. r. o.
Pauločíková, Petra: Recruitment, selection and admission employees in company Yazaki Wiring Technologies s.r.o.
Petrovičová, Mária: Recruitment, selection and adoption new employees
Plevzová, Miriama: Social Programme of ŽOS Trnava, a. s company
Pobočková, Natália: Recruitment and shortlisting of new employees
Pompurová, Lenka: Recruitment, selection and employing of new employees
Predná, Katarína: Proposals to increase the effectiveness of the admission procedure in the company INA SKALICA, s.r.o.
Pučkovicová, Jana: Staff training as a part of personal work
Reves, Matúš: Individual work in teaching on SVS
Rigová, Gabriela: Interview to Fremach, s. r. o. and to TRW Automotive Italia s. r. l., Body Control system Europe and Emerging Markets
Sitnianská, Miriam: Human resources management in KONTROLTECH, Ltd
Skalošová, Dominika: Evaluation and education of employees in company Železiarne Podbrezová, a.s.
Smoleková, Miroslava: Job interview in company Vaillant Industrial Slovakia s.r.o.
Soványová, Timea: Measure submission to improve the human resources development in the company Nefab Packaging Slovakia, s.r.o
Staňová, Monika: Corporate culture in Matador Industries a.s.
Szabová, Mária: System of personnel operations in a selected firm
Šellingová, Katarína: Suggestion of measures to improve the system of evaluation and remuneration of workers
Školárová, Miroslava: Education and development of employees in Schnellecke Slovakia Ltd.
Španielka, Marek: Methods and forms of creative problem soving
Šutiaková, Michaela: Use of didactics tools in the learning process performed at secondary automotive technical school in Trnava
Topoľská, Veronika: Application of measure for innovation of evaluation of employees
Žiačková, Zuzana: Personal resources, development and its import in Power-One, s. r. o.

MASTERS THESES

Andrýsek, Milan: The importance of educational technology in the teaching process
Aschengeschwandtnerová, Martina: The Teacher - Student Communication in Classes
Balážová, Beáta: Managing of school burden of secondary school students
Balog, Ján: Creating a didactic test in the subject Informatics
Bartek, Anton: Pedagogical communication in the classroom
Báž, Michal: Utilization of secondary school pupils' leisure
Bednárová, Martina: A relationship of underage youth to their health in the right nourishment question
Bělohoubková, Andrea: Social and character profile of teachers at secondary vocational school
Beňa, Jozef: The role of classroom teacher in high schol
Beňová, Viera: Modern concepts of the teaching process
Boško, Miroslav: Improving the quality of education process at secondary school
Brigantová, Dagmar: Leisure time and its importance in life of adolescents
Bullová, Zuzana: Information and communication abilities of secondary school students
Čičmanec, Peter: Proposed measures to improve the processes leading to a vocational training school
Dubravická, Beáta: Educational problems in secondary vocational schools
Dunajská, Anna: Family cooperation and secondary vocational school
Ďuržo, Pavol: Verbal aggression secondary school students in the learning process
Forrová, Ľudmila: The presentation technologies in the teaching of technical
Gbelec, Peter: Approach of the students toward health and sport activities
Grajcaríková, Anna: The issue of bullying at schools
Grigláková, Eva: Pedagogy of free time and its roles in education of children and youth
Hančin, Marián: Managing of employees education in manufacturing companies and evaluation of its effectiveness
Holbová, Petra: Secondary school students' autonomous work level identification
Homolová, Martina: Utilization of film about bullying in teacher training
Hrdý, Juraj: The relationship between technics and the environment
Chrvalová, Lujza: Creation of didactic test in the subject accounts
Iskra, Marián: Analysis of the possibilities of eliminating aggressive behavior of students in Secondary school in Dubnica nad Váhom
Jungová, Renáta: The negative tendencies in family education
Juríček, Tomáš: Management of education of employees in the INA Skalica Company and evaluation of its effectivity
Kissová, Jana: Brachial aggression of secondary school students during their school-time
Kodajová, Monika: Vocational School Senica 1948 – 2011
Kohútová, Martina: Planning of teachers' work
Košťáliková, Michaela: Preferred learning style and academic success rate in high schol
Koštialiková, Iveta: Natural science after-school activity at secondary vocational schools
Kováčiková, Alena: Leisure activities in schools
Kováčiková, Jana: Today's family and its future development
Krivosudská, Ivana: Attitudes of secondary school students to handicapped individuals and their integration

Lošonská, Marcela:	The life problems of the elementary and secondary school student
Lukačovičová, Lucia:	Teacher's personality and its impact on the effectiveness of the teaching process
Lupták, Peter:	The pedagogical situations in secondary specialized schools and solution possibilities
Máčadiová, Renáta:	Career growth teacher specialized objects in Slovakia
Máčayová, Miroslava:	The quality of the educational process at secondary school
Maňák, Martin:	Lifestyle of teachers at secondary technical schools
Masárová, Zlatica:	Creativity in pedagogical process
Matiašková, Jana:	Importance of pedagogical training in preparation of future teachers
Michaličková, Beáta:	Pathologic expressions of high school teenagers – the present state, prevention in schools and families
Mikšovský, Stanislav:	Communication and bullying in school
Moravská, Iveta:	Reasons and solution of the truancy problems on secondary vocational schools
Mušková, Adriana:	Assertivity in the Educational Process
Nagyová, Diana:	Morning and evening type of student and preferred time of learning and its academic success
Omastová, Mária:	Teacher as a natural authority
Ondriška, Ľuboš:	Use of ICT in the process of acquiring key skills pupils SOS
Ovečková, Mária:	Study text and specialized high school students
Palková, Blanka:	Project technical and vocational teaching
Pepich, Milan:	Communication between pedagogue and student
Plaštiak, Ľubomír:	Health status, physical activity and physical fitness students
Prekopová, Jana:	Secondary school teachers point of view for quality of life
Puckallerová, Gabriela:	Activating and complex teaching methods at secondary vocational schools
Rosa, Branislav:	The Vocational School in Senica 1948 – 2011
Rumanová, Enikő:	Mentoring of beginning teachers in practice
Rybnikárová Jánová:	Improving the quality of the teaching process
Skokánková, Radka:	Stereotypes and prejudices in the minds of high school students
Sládek, Miroslav:	Relationship of high school youth to health and physical activity
Sláviková, Denisa:	The problem of students' aggressive behavior and the possibility of eliminating
Sopúšek, Aleš:	Sport-educational and interest activities of secondary school students
Szakál, Peter:	Causes and solutions to the truancy problem of high school students
Szakálová, Eva:	Negative tendencies in the family nurture
Šariská, Mária:	The communication between the pedagogue and the student
Šestáková, Marianna:	Teacher and his work during tuitional process at vocational school
Tóthová, Andrea:	Attitude of adolescents to their health in terms of appropriate nutrition
Turis, Ľubomír:	The sports and educational activities of interest of the secondary youth
Vargová, Monika:	Presentation tecniques and their use in preparation of future engineers
Varmužová, Ivana:	Coping with stress in school students of secondary schools
Vatrtová, Zuzana:	Communication teacher´s competence in teaching vocational subjects in secondary schools
Vršanská, Jozefína:	The reflection of the continual pedagogical practice in secondary technical school by training teachers and adepts of teaching
Záhumenský, Richard:	Design of the teaching aid "Model of an injection pump for aircraft engines"
Zbořil, Martin:	Spare Time Activities at Schools as Drug Use Prevention
Zimanová, Stanislava:	The way of living of secondary specialized schools students

PhD THESES

Jurča, Robert:	Project teaching in the technical vocational subjects
Klaučo, René:	Teaching efficiency in technical science
Kmecová, Iveta:	Didactic effeciency of the textbooks of technical education
Kučerka, Daniel:	The development of the information competence via e-learning
Kvasnica, Ondrej:	E-learning in Professional Technical Subjects
Mezei, Jozef:	E-learning teaching is realized through e-learning courses compared to traditional lessons with a teacher and to compare the results with similar studies
Oravec, Miroslav:	The use of ICT for teaching technical vocational subjects in secondary school
Paška, Peter:	Introduction and application of quality management at SPS, SOU
Šimurdová, Lucia:	Development of key competences and teaching of technical subjects
Uhráková, Eva:	Plagiarism at universities of technology

RESEARCH AT THE INSTITUTE

Area of research

- engineering pedagogy and psychology
- key competencies of students
- complementary teacher training and its experimental verification in educational practice
- humane science in technology
- foreign language curriculum improvement based on the needs analysis of the faculty graduates and undergraduates in the field of international professional communication
- investigation of methodological aspects of foreign language teaching and implementation of the research results into educational processes
- physical culture and fitness

Research characteristics

The expertise goal of research activities of the Institute of Engineering Pedagogy and Humanities at MTF STU stems from the profile of the Institute and faculty in the area of pedagogy, and it is in accordance with the long-term aim of the development of the Slovak University of Technology in Bratislava and it covers a full range of the Institute's educational activities. The content of the Institute's research activities is directed mainly at research in the area of humanities and social sciences with an emphasis on the development and innovation of methods and forms of education under the conditions of technical intelligence preparation. The specialty of the Institute's research lies in its division into two research areas: Research Area No. 1: "Pedagogy". This area includes research assignments concerned with engineering pedagogy, preparation of high school teachers, advancement of personality, history of the technical educational system, body culture and language skill development. Research Area No. 14: "Engineering". This area includes research assignments concerned with personnel work and preparation of e-learning courses for personnel officers.
The Institute's research activities take the form of Scientific and scientific-pedagogical projects solved within the scope of selection and subsequent support by the grant agencies VEGA and KEGA, projects solved within the scope of selection and subsequent support by the grant agency APVV, and projects solved within the scope of international programs. The transfer of the outcomes of the Institute's research into practice can be accomplished by special and expert activities. Members of the Institute work out practical training at enterprises such as the Bohunice Nuclear Power Plant, VUJE Trnava, and ŽOS Trnava to the extent of their expertise. The regular organization of scientific and expert colloquiums is an important part of the Institute's research and its outcome presentation. The Institute organizes the international scientific conference SCHOLA on a regular basis which takes place under the auspices of the International Society for Engineering Education – IGIP.
Student scholarly activities and the student scientific conference are a stable part of the Institute's care for talented and gifted students. The Institute regularly organizes the conference in the section of humanities and foreign languages.

PROJECTS OF THE INSTITUTE

PROJECT OF TECHNOLOGY TRANSFER

Title of the project	Development of pedagogical skills of the PhD students of the MTF STU
Type of the project	OPV
Number of the project	ITMS 26110230023
Main investigator	Roman Hrmo, Assoc. Prof. PhD.
Time period of the project	2010-2013
Annotation of the project	The agency of the Ministry of Education of the Slovak Republic, administering the Structural Funds of the EU in the frame of the Operational Programme for Education, accepted a project led by Roman Hrmo, Assoc. Professor, PhD. called Teaching Skills Development of PhD Students at The Faculty of Materials Science and Technology in Trnava. The goals of the project are to develop teaching skills and to support academic growth of PhD students of both full-time and part-time formats of their study. The goals will be reached by promotion of teaching skills of PhD students through direct educational activities and by coordination of their mobility.

NATIONAL PROJECTS

Title of the project	Model of quality assessment of vocational education and training at secondary vocational schools in Slovakia.
Type of project	KEGA
Project number	026STU-4/2011
Main investigator	Roman Hrmo, Assoc. Professor, PhD.
Time period of project	2011-2013
Project annotation	The project compares individual methods and new trends in quality managing of the specific education in the Slovak Republic and abroad. The main focus is on design creation of model of education quality evaluation on the middle vocational schools and its first testing on the selected middle vocational schools.

Title of the project	Models of projekt-based learning at secondary vocational schools
Type of project	KEGA
Project number	031-035STU-4/2010
Main investigator	Katarína Tináková, PhD.
Time period of project	2010-2011

Project annotation The concept of education development in the Slovak Republic in the next 15-20 years highlights a need for school orientation modification from traditional provision of knowledge to methods of absorption and application of knowledge by students. Project education is based on solving of complex theoretical or practical problems with activity of students. The main aim of the project is to scan the contemporary state in project education at SOŠ in the Slovak Republic and form a structured educational text as a methodological material for teachers of technical subjects.

VISITS OF STAFF MEMBERS TO FOREIGN INSTITUTIONS

Employee	State
Horňáková Veronika	Norway
Hrdličková Zuzana	Italy
Hrmo Roman	Brazil, Austria, Slovenia, Czech Republic, Portugal and Azures, Norway
Chmelíková Gabriela	Italy
Kadnár Jozef	Portugal and Azures, Ireland, Norway
Klierová Martina	Norway
Kováč Karol	Czech Republic
Krištofiaková Lucia	Austria, Czech Republic, Norway
Krpálková-Krelová Katarína	Czech Republic
Mironovová Emília	Czech Republic
Petnuchová Jana	Norway
Podařil Martin	Norway
Ridzoňová Zuzana	Poland, Norway
Sablik Jozef	Czech Republic
Strakoš Jozef	Norway
Štúr Milan	Norway
Tkáč Lukáš	Poland, Czech Republic, Romania, Norway
Záhorcová Erika	Norway
Záň Michal	Poland, Norway

MEMBERSHIP IN SLOVAK PROFESSIONAL ORGANISATIONS

Slovak Pedagogy Society at Slovak Academy of Sciences
Katarína Krpálková Krelová, PhD.
Katarína Tináková, PhD.
Ľubomír Holkovič, PhD.
Roman Hrmo, Assoc. Prof. PhD.
Viliam Končal, Assoc. Prof. PhD.
Ing. Jan Kostelník, Assoc. Prof. PhD.
Ing. Lucia Krištofiaková, PhD.

Slovak Swimming Federation
Rastislav Hlavatý, PhD.

Physical Education Union SUT Trnava
Rastislav Hlavatý, PhD.
Marián Merica, Assoc. Prof. PhD.

Swimming Club SUT Trnava
Rastislav Hlavatý, PhD.

Association for History of Science and Technology
Katarína Tináková, PhD.
Roman Hrmo, Assoc. Prof. PhD.

Slovak Scientific Society for Physical Education and Sport
Soňa Novotná, PhD.
Rastislav Hlavatý, PhD.
Marián Merica, Assoc. Prof. PhD.

Information Society for Education ZSVTS
Katarína Tináková, PhD.
Katarína Krpálková Krelová, PhD.
Roman Hrmo, Assoc. Prof. PhD.
Jan Kostelník, Assoc. Prof. PhD.
Eva Tóblová, PhD.

ASR Association of Russian Teachers in Slovakia
Dagmar Rusková, PhD.

SUNG – Association of German Teachers in Slovakia
Anna Reháková, PhD.
Dušan Fedič, PhD.

Territorial Board of Education TTSK
Roman Hrmo, Assoc. Prof. PhD.

Scientific Commision for Permission to Defend Dissertation Theses in the Field of Study – Sports Kinanthropology
Marián Merica, Assoc. Prof. PhD.

Association of Process Oriented Psychotherapy
Silvester Sawicki, PhD.

Association of School Psychologists
Silvester Sawicki, PhD.

MEMBERSHIP IN INTERNATIONAL PROFESSIONAL ORGANISATIONS

Internationale Gesellschaft für Ingenierpädagogik – IGIP (International Society of Engineering Pedagogy)
Roman Hrmo, Assoc. Prof. PhD.
Katarína Tináková, PhD.
Katarína Krpálková Krelová, PhD.
Lucia Krištofiaková, PhD.
Eva Tóblová, PhD.

CASAJC – Czech and Slovak Association of Foreign Language University Teachers
Dagmar Rusková, PhD.
Emília Mironovová, MSc.
Dušan Fedič, PhD.
Gabriela Chmelíková, PhD.
Anna Reháková, PhD.
Jana Green, MSc.

National consortium for the European network of reference and expertise in vocational education and training, Slovakia-CEDEFOP
Roman Hrmo, Assoc. Prof. PhD.
Katarína Krpálková Krelová, PhD.
Silvester Sawicki, PhD.

International Society of Sport Kinetics
Marián Merica, Assoc. Prof. PhD.

The Editorial Board of Research Journal Studia Sportiva of the Faculty of Sports Studies Masaryk University in Brno
Marián Merica, Assoc. Prof. PhD.

PUBLICATIONS

Journals

[1] Bilčík, Alexander - Kadnár, Jozef: Self-evaluation in managerial work within educational institutions. In: Materials Science and Technology [online]. - ISSN 1335-9053. - Vol. 11, No. 3 (2011), p. 1-4.

[2] Chmelíková, Gabriela: Company education management with ICT support. In: Enterprise management. - ISSN 1338-4104. - Vol. 1, No. 1 (2011), p. 28-31.

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DIVISION

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DIVISION OF PERSONNEL AND ORGANISATIONAL ACTIVITIES

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Departments

- Department of Personnel
- Department of Work Economy
- Department Wages and Salaries
- Department of Safety and Health Protection at Work, Civilian Protection, Fire Safety
- Department of Security System

Staff: 11

- Dean's secretariat: 3
- Department of Personnel: 2
- Department of Work Economy: 2
- Department Wages and Salaries: 2
- Department of Safety and Health Protection at Work, Civilian Protection, Fire Safety: 1
- Department of Security System: 1

Priority of the Division of Personnel and Organisational Activities

1. The Division of Personnel and Organisational Activities is the administration-service unit of the faculty. It is responsible for securing all administrative and service activities connected with hiring and rewarding of the faculty employees, social and health insurance of employees, recording and processing of income issues, activities of the dean's secretary office and the security system of the faculty.
2. The Division of Personnel and Administration Activities is responsible for:
   a) the personnel records of the faculty employees,
   b) preparing a list and the structure of obligatory documentation which is processed by the central Division of Personnel and Organisational Activities and particular divisions and workplaces of the faculty it has a right to control,
   c) operation of an information system for personnel work including administration of a system of the workplaces at the faculty,
   d) processing a system for remuneration of employees including preparation of documents for the wage policy of the faculty,
   e) preparation and organization of interviews for the work positions of leading employees at the faculty and pedagogical employees at institutes,
   f) activities according to the law on protection of personal data, operation of the dean's office
   g) Organization of Safety and Health Protection at Work, Civilian Protection and Fire Safety

Activities of the Division of Personnel and Organisational Activities in year 2011:
Meeting of former faculty employees with faculty management
Management of the attendance system ESED

DIVISION OF ACADEMIC ACTIVITIES

Contact

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Departments

- Registrar's Department
- Department of Research and International Relations

Staff: 15

- Registrar's Department: 10
- Department of Research and International Relations: 4

Priority of the Division of Academic Activities

1. The Division of Academic Activities is the administrative-service division of the faculty which provides administrative and service activities connected with the study and research activities of the faculty, the foreign relations of the faculty and the system of quality in the pedagogical process.
2. The Division of Academic Activities is responsible for:
   a) recording the student life cycle and related activities for all three study degrees (Bc., Eng., PhD.),
   b) processing and administration of admission procedures in all three study degrees,
   c) preparing of publicity materials directed to applicants for study,
   d) processing of a complex agenda for motivational and social scholarships,
   e) recording of research projects and grant activities,
   f) organizing of business and study travel for the faculty employees and students abroad,
   g) organization of development support for the international contacts of faculty employees and students with universities and other foreign institutions, and support of their participation in international programs,
   h) organization of growth in the complex scientific academic qualification of the faculty employees – including habilitation and inauguration procedures,
   i) organizing and administration of agendas related to activity of commissions for defense of dissertation theses, habilitation and inauguration commissions,
   j) provision of a complex agenda for meetings of the faculty Scientific Board,
   k) organization and administration of the accreditation process and implementation of a system of quality,
   l) administration of agendas connected with awards for faculty and memberships in scientific communities,
   m) organization of faculty academic ceremonies.

Projects of the Division of Academic Activities:

Head of the Division, Jana Štefánková, MSc. Eng., contributes to the project by Faculty of Materials Science and Technology Slovak University of Technology on **Diversity: Improving Gender Diversity Management in Materials Research Institutions.**

Head of the Division, Jana Štefánková, MSc. Eng., contributes to the project **Knowledge management system of monitoring instruments of the graduates' employment within the integration into the EU.**

Activities of the Division of Academic Affairs in year 2011:

- Organisation of the International Doctoral Seminar 2011
- Organisation of the Students Research Conference at the faculty 2011
- Organisation of the "Open-house Day at MTF STU"
- Organisation of promotional activities, presentation events and preparation of propagation materials for study
- Participation at the education trade fairs
- Organisation of the questionnaire on student satisfaction with study (study conditions, level of teachers – study conditions, teacher qualifications, quality of education process, etc.)
- Cooperation in organising of the "New-year's meeting of employees"
- Care of the web page including information for faculty and students, throughout the year
- Care of the academic information system AIS

Membership in slovak professional organisations

The Slovak Academy of Management – Jana Štefánková

Membership in international professional organisations

SEFI- European Society for Engineering Education – Jana Štefánková

Publications

Proceedings

Svetský, Štefan - Moravčík, Oliver - Štefánková, Jana - Schreiber, Peter: An experiment with enhanced learning in engineering education. In: Annals of DAAAM and Proceedings of DAAAM Symposium. - ISSN 1726-9679. - Vol. 22, No. 1. Annals of DAAAM for 2011 & Proceedings of the 22nd International DAAAM Symposium "Intelligent Manufacturing & Automation: Power of Knowledge and Creativity", 23-26th November 2011, Vienna, Austria. - Vienna: DAAAM International Vienna, 2011. - ISBN 978-3-901509-83-4, s. 0293-0294

Štefánková, Jana: Quality improvement of university institution. In: Manažment podnikania a vecí verejných : Zborník vedeckých prác. I. ročník, 2011. - Bratislava: Slovenská akadémia manažmentu, 2011. - ISBN 978-80-970759-0-3. - S. 200-206

Cagáňová, Dagmar - Moravčík, Oliver - Štefánková, Jana - Čambál, Miloš - Gialampouki, M - Lekka, Ch.E.: Gender Diversity from the Slovak and Greek Perspective. In: EAEEIE 2011: Proceedings of the 22nd EAEEIE Annual Conference - EAEEIE 2011, Maribor, Slovenia, June 13-15, 2011. - Maribor: Faculty of Electrical Engineering and Computer Science, 2011. - ISBN 978-961-248-281-7. - S. 89-92

Moravčík, Oliver - Cagáňová, Dagmar - Štefánková, Jana: The University Institution's Improvement of Quality from a Knowledge Management Point of View. - abstrakt príspevku uverejnený v ECKM 2011Booklet of Abstracts, s. 64. In: Proceedings of the 12th European Conference on Knowledge Management - ECKM 2011: University of Passau, Germany, 1-2 September 2011. - Passau: University of Passau, 2011. - ISBN 978-1-908272-10-2. - 676-686, vol.1

Svetský, Štefan - Moravčík, Oliver - Schreiber, Peter - Štefánková, Jana: Informatic Tool Development and Testing for Active Learning. - článok publikovaný v časopise: Journal: Lecture Notes in Engineering and Computer Science Year: 2011 Vol: 2193 Issue: 1 Pages/record No.: 265-268, ISSN 2078-0958. In: WCECS 2011: World Congress on Engineering and Computer Science. Proceedings. Volume I. San Francisco, USA, 19-21 October, 2011. - Hong Kong: International Association of Engineers, 2011. - ISBN 978-988-18210-9-6. - S. 265-268

Šujanová, Jana - Čambál, Miloš - Cagáňová, Dagmar - Štefánková, Jana - Mudriková, Ivana: Gender Diversity in Research System in the Slovak Republic. In: TEAM 2011: Proceedings of the 3rd International Scientific and Expert Conference with simultaneously organised 17th International Scientific Conference CO-MAT-TECH 2011, 19th - 21st October 2011, Trnava Slovakia. - Slavonski Brod: University of Applied Sciences of Slavonski Brod, 2011. - ISBN 978-953-55970-4-9. - S. 428-431

Moravčík, Oliver - Janovec, Jozef - Horňák, František - Štefánková, Jana: Progress in the Teaching of Materials Science at the Faculty of Materials Science and Technology. In: 3rd International Materials Education Symposium: Murray Edwards College, University of Cambridge, UK. April 7-8, 2011. - Cambridge : University of Cambridge, 2011. - S. 48

Compilation work

Rešetová, Kvetoslava - Štefánková, Jana: DVD about STU MTF. - Trnava: STU v Bratislave MTF, 2011. Trnava, F. Hulík – Plus+, 2011.

DIVISION OF KNOWLEDGE MANAGEMENT

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Departments

- Academic Library
- Publishing House
- Department of Public Relations

Staff: 13

- Academic Library : 7
- Publishing House : 2
- Department of Public Relations: 3

Priority of the Division of Knowledge Management

1. The Division of Knowledge Management is the technical-administrative and service unit of the faculty which provides faculty activities and functions in the field of the academic library, publishing and public relations.
2. The Division of Knowledge Management is responsible for:
   a) processing and functions of the academic library which:
      - is the research-information, bibliographic, coordination and advisory workplace of the faculty,
      - stores and registers qualification theses,
      - is a workplace for central evidence of faculty publications and their references,
      - provides and processes information funds according to the faculty profile and offers bibliographic-information services on the basis of user categorization,
      - administrates bibliographic- information databases related to the academic activity of the faculty and participates by creating and accessing file catalogues,
      - fulfills the function of a specialized research library for the specific fields of the faculty,
   b) operating the faculty publisher according to the accepted articles which provide editorial activity of the faculty,
   c) public relations of the faculty,
   d) contacts of the faculty to the foundation Alumni.

PROJECTS OF THE DIVISION OF KNOWLEDGE MANAGEMENT IN YEAR 2011:

Title of Project	Centre of knowledge organisation of intellectual property
Type of Project	OPVaV
Number of Project	ITMS 26220220054
Responsible Supervisor	Kvetoslava Rešetová, PhD.
Time Period of Project	2010-2012

Project Annotation The project was approved in the frame of the call of the agency Ministry of Education Slovak Republic - for Operation program Research. The aims of the project is the creation of a centre with the functions of a virtual library and digital archive, complex care of rights of intellectual properties, expert research and education workplace for intellectual property. The project will be the result of globalisation trends for knowledge faculty as a knowledge society centre. It will be a model of knowledge management which is defined on the basis of information surveys, information behaviour, knowledge organisation, interaction and access to information.

Title of Project	Knowledge management system of monitoring instruments of the graduates' employment within the integration into the EU
Type of Project	OPV
Number of Project	ITMS 26110230024
Responsible Supervisor	Kvetoslava Rešetová, PhD.
Time Period of Project	2010-2012

Annotation of Project The project was approved in the frame of a call by the agency Ministry of Education Slovak Republic for Operation program Education. The strategic aim of the project is focused on the support of quality increase and flexibility of the tools for observation of graduates' careers as an output of adaptation of the education system to the needs of a knowledge society via innovative forms of development of faculty intellectual capital. It is based on the long-term aim to increase responsibility of knowledge transfer and development of a knowledge society. The quality of intellectual and knowledge institution potential and intensity of its development is connected with knowledge management. The transfer of knowledge presents a revision of the position of knowledge in the organisational value hierarchy. The project presents educational integrity - innovations and knowledge.

Activities of the Division of Knowledge Management in year 2011:

- care for a library system
- regulation of the evaluation system of publishing
- evidence and archiving of publications of faculty employees
- preparation of the project – digitalization of library
- complete responsibility for editorial activity at the faculty
- editorial of monographs and workbooks
- issuing of faculty journals : Research Papers MTF STU and Materials Science and Technology
- organising of events for the 25. anniversary of MTF STU
- creation of banners for monthly events at MTF STU
- faculty history in five thematic blocks
- communication with media
- organising the new-year's meeting of employees
- organising of the Day of the Faculty of Materials Science and Technology
- year long exposition of posters and gallery of the faculty
- year long management of the web page of the faculty
- cooperation in organising the IDS 2011
- organising the Thursday afternoon sessions Dies ioviss occursus
- preparation of various additional activities (Annual Report, propagation materials on the faculty – Welcome, Bulletin of FMST, DVD of FMST,

Membership in slovak professional organisations

Slovak Association of libraries – membership of the whole Academic Library

Membership in international professional organisations

Knowledge Management Professional Society (KMPro) – Kvetoslava Rešetová, PhD.

Publications

Journals

Rešetová, Kvetoslava: Center of knowledge organisation of intellectual property. In: Intellectual property. - ISSN 1335-2881. - Vol. XV, No. 2 (2011), pp. 23-24.

Proceedings

Rešetová, Kvetoslava: Evaluation of tools in for an academic library in the area of knowledge transfer. (http://www.inforum.cz/pdf/2011/resetova-kvetoslava.pdf) In: INFORUM 2011: 17. conference o profesional informations quelle. - Praha: Albertina Icome, 2011. - ISSN 1801-2213

Rešetová, Kvetoslava: Application of information sources of academic library. In: Library of Contemporary time 2011: Proceeding. - České Budějovice: Sdružení knihoven ČR, 2011. - S. 117-123

Rešetová, Kvetoslava: Contribution of EU project solving for forming of faculty knowledge map. In: UNINFOS 2011 : University information systems. Proceeding.- Prešov: Prešovská univerzita, 2011. - ISBN 978-80-555-0411-7. - S. 131-136

Compilation work

Rešetová, Kvetoslava: Bulletin MTF STU for industry practice and industrial environment. - Trnava: MARTICO, 2011. - 142 s. - ISBN 978-80-970830-0-7

Rešetová, Kvetoslava - Štefánková, Jana: DVD on STU MTF. - Trnava: STU v Bratislave MTF, 2011. – Trnava, V.Hulík-Plus+, 2011.

Activity on Internet

Rešetová, Kvetoslava: Publishing at MTF STU [online July 2011]. - Trnava: STU v Bratislave MTF, 2011. (http://opom.mtf.stuba.sk/)

DIVISION OF ECONOMIC AND ESTATE ACTIVITIES

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Departments

- Department of Operation and Maintenance
- Department of Estate Management
- Student Hostel and Canteen
  - Facility: Student Hostel
  - Facility: Student Canteen

Staff: 120

- Department of Operation and Maintenance: 61
- Department of Estate Management: 8
- Student Hostel and Canteen
  - Facility: Student Hostel: 38
  - Facility: Student Canteen: 12

Priority of the Division of Economic and Estate Activities

1. The Division of Economic and Estate Activities is the economic-administration unit of the faculty which provides economic, operative, administrative, and other services related to the proper faculty and division operation.
2. The Division of Economic and Estate Activities is responsible especially for:
   a) preparation, securing and implementation of economic, administrative and operative faculty logistics,
   b) logistical and controlling functions of the faculty,
   c) maintenance of the registry system of the Slovak University of Technology at the faculty,
   d) organization of the implementation of civil defense, fire protection and safety and health protection at work.

Activities of the Division of Economic and Estate Activities in year 2011

- implementation of new service of catering at the faculty
- securing of technology for maintenance of the water regime
- processing of reconstruction and solution of accidents
- implementation of control system for using work phone lines
- verification of agreements connected with the faculty maintenance
- provision of a complete economic agenda of the faculty's student dormitories
- co-organising of faculty events

DIVISION OF COMMUNICATION AND INFORMATION SYSTEMS

Contact

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Departments

- Department of Information Systems Operation
- Department of System and Technical Services

Staff: 10

- Department of Information Systems Operation: 5
- Department of System and Technical Services: 5

Priority of the Division of Communication and Information Systems

1. The Division of Communication and Information Systems is a technical-administrative and service faculty unit which provides procedural, consultative and informational services in the area of communication and information technology to other organizational units of the faculty. This division prepares documents for acquisition, maintenance and repairs of the faculty information technology.
2. The Division of Communication and Information systems is responsible for:
   a) processing and administration of faculty computer systems,
   b) provision of casual maintenance and repairs of devices of the faculty information technology and infrastructure,
   c) provision of consultation services for the system and selected application program equipment,
   d) development, innovation and implementation of technical and program means for the faculty's information technology,
   e) organization of training and short-time courses for users of information technology, training of application program equipment and operation of the computer network,
   f) creation, development, innovation and distribution of the faculty's computer network and its connection to the university network,
   g) provision of IT devices to the faculty workplaces in cooperation with directors of institutes and heads of divisions,
   h) casual repairs of technical devices reached with the Division of Communication and Information Systems,
   i) support for cooperation with the Center of Information Technology STU and other information workplaces at STU,
   j) suggestions for short-term and long-term plans of implementation of information technology and preparation of documents for decisions made by the management of the faculty,
   k) entrepreneurship activity,
   l) issuance of permissions for connection of devices to the faculty computer network,
   m) administration of faculty servers and components of the faculty information system.

PROJECTS OF THE DIVISION OF COMMUNICATION AND INFORMATION SYSTEMS IN YEAR 2011

Title of Project	Support of university infrastructure to improve the conditions of education.
Type of Project	OPVaV
Number of Project	5.1.2 and 5.1.3
Responsible Supervisor	Jaroslav Otčenáš, MSc. Eng.
Time Period of the Project	2010-2012
Project Annotation	The aim of project is to create the university infrastructures and modernisation of their internal equipment to improve the conditions of the education process. The project results will be modernisation of computer networks, a data center building on Bottova and Botanicka streets, improvement of the printing system, and modernisation of classrooms. In the classrooms there will be data projectors and other modern education tools. In the faculty buildings there will be additional Internet places for the students. Next, multimedia classrooms will be created and the number of connection points to Internet WiFi will be increased. The next important step is creation of information faculty security, especially by network monitoring, firewall solutions for all LAN MTF, and provision of computers for students in the dormitory.

The Head of the Division, Jaroslav Otčenáš, MSc. Eng., contributes to the project **Knowledge management system of monitoring instruments of the graduates' employment within the integration into the EU.**

Activities of the Division of Communication and Information Systems in year 2011

- active help in organising SANET – connection of secondary and elementary schools to the central node of the Internet, which is located at the faculty
- reconstruction of the organisation of information communication technologies at the faculty
- implementation of new mobile data centre as a storage server of the faculty
- work for securing the network against attacks from external areas
- installation and upgrade of servers
- preparation of web portals for faculty needs (www.idssmolenice.sk, dokumenty.mtf.stuba.sk, foto.mtf.stuba.sk, etc)
- central system for maintenance of WiFi Access points
- implementation of system for net points regulation (LMS)
- installing of central storage sources (UPS) into server centres at Bottova and Paulínska street

Membership in slovak professional organisations

SANET – Slovak Academic Network

CENTRE FOR TECHNOLOGY TRANSFER

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Staff: 7

Priority of the Center of Technology Transfer

1. The Center of Technology Transfer is a technical-administrative, service workplace for preparation and management of projects and technology transfer directed toward praxis.
2. The tasks of the Center of Technology Transfer are especially:
   a) preparation and administration of projects,
   b) transfer of the results of the faculty's research into entrepreneurship activities,
   c) marketing research of praxis requirements for solution of research tasks,
   d) mediation and coordination of research and scientific events of the faculty,
   e) certification and patent support and service to the faculty institutes,
   f) records and entrepreneurship activity of the faculty on the basis of commercial agreements.

PROJECTS OF THE CENTER OF TECHNOLOGY TRANSFER:

Head of the Centre, Peter Halada, MSc. Eng., contributes to the project: Faculty of Materials Science and Technology Slovak University of Technology in Diversity: **Improving Gender Diversity Management in Materials Research Institutions.**

Activities of the Center of Technology Transfer in year 2011

- coordination of public procurement projects
- new contacts with domestic and foreign research and education organisations
- coordination of bidding processes and creation of methods for bidding processses at the faculty, supervision of plans for bidding processes at the faculty
- monitoring of project acquisition according to the faculty profile
- processing of the agenda for faculty enterpreneurship activity

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