

ANNUAL REPORT '96

FACULTY OF MATERIALS SCIENCE AND TECHNOLOGY

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FOREWORD

The Faculty of Materials Science and Technology in Trnava was established on 1 January 1986 by decree of the Czechoslovak Government. It was originally named the Faculty of Machine Technology. However, the history of this Faculty is much older than the date of its establishment shows. Its history is closely connected with the technological branches of machine construction, the foundations of which were laid at the Department of Mechanical and Electrical Engineering in the forties.

In February 1991 the Academic Senate of the Faculty suggested a new name for this institution - the Faculty of Materials Science and Technology - which is its present official name. Faculty of Materials Science and Technology is one of the six faculties of the Slovak University of Technology, the oldest and the largest technical university in Slovakia.

In the academic year 1996-1997 the Faculty comprises the following departments:

- Department of Information Technology and Automation
- Department of Applied Mechanics
- Department of Physics
- Department of Humane Sciences
- Department of Engineering Pedagogy and Psychology
- Department of Management and Quality Engineering
- Department of Mathematics
- Department of Materials Engineering
- Department of Machining and Assembly
- Department of Languages
- Department of Industrial Ecology
- Department of Physical Education and Sports
- Department of Forming
- Department of Foundry
- Department of Welding
- Detached workplaces in Brezno, Trenčín, Dubnica, Partizánske and Komárno

The educational and research activities of the Faculty are aimed at training the experts and solving research tasks in the field of industrial (partially mechanical engineering) production, where issues related to engineering materials, technological processes, production management and quality control, information technologies and automation processes in production plants, together with ecological and humane aspects of production processes are being dealt with.

Following the requirement for diversification of all forms of study and graduate profiles, the Faculty provides Bachelor's degree courses (BSc), Master's degree courses (MSc), and postgraduate doctoral (PhD) degree courses. In the academic year 1995 - 1996 over 3,800 students studied at the Faculty in various courses.

It is possible to study the following majors within the below mentioned types of courses:

1. Bachelor's degree courses (3 years)

- Information Technology and Systems
- Industrial Management
- Industrial Ecology
- Industrial Technologies
- Industrial Management
- Social Sciences and Work Safety
- Technical Materials
- Machine Engineering

2. Master of Science degree courses (5 years)

- Information Technology and Automation in Industry
- Production Quality Engineering
- Management of Industrial Plants
- Materials Engineering
- Technological Devices and Systems
- Machine Production Technology
- Environmental Engineering

3. Postgraduate doctoral degree courses (4 years)

- Automation in Industry
- Production Quality Engineering
- Materials Engineering
- Production and Application of Non-Metal Materials
- Machine Technologies
- Theory of Technical Subjects Training

4. Complementary Teacher Training (2 years)

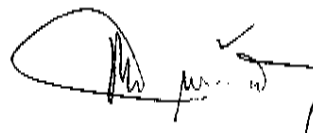
- Teaching the Technical Subjects

The scientific research of the Faculty of Materials Science and Technology, Slovak University of Technology, respects the scientific and pedagogic profile of the Faculty and is carried out in the following forms: grant research, institutional research, research within the framework of programmes of international scientific and research cooperation, research within the framework of entrepreneurial Faculty activities. The basic organizational units promoting the scientific research programme at the Faculty are the departments and other workplaces.

In organizing the activities the Faculty builds upon its traditional and long-term relations with foreign partner universities and foreign enterprises. The most important are: Technische Universität Wien Austria, Technische Hochschule Darmstadt Germany, Fachhochschule Darmstadt Germany, University of Plymouth Great Britain, Technische Universität Cottbus Germany, Fachhochschule Koethen Germany, Technical University of Sofia Bulgaria, Kyjevskij politechničeskij institut Kyjev Ukrajina, Gosudarstvennyj techničeskij universitet Iževsk Russia, DELCAM Birmingham Great Britain, GBM Berlin Germany, Institut für Festkörper-und Werkstoffforschung Dresden Germany.

Foreign cooperation programmes concentrate especially on cooperation in curriculum development and innovation, professional growth of the Faculty staff and the exchange of students, pedagogic documentation and other information. A significant form of the updating of our foreign activity is represented by TEMPUS programmes in cooperation with partner universities in Germany, Belgium and Ireland.

February 1997

A handwritten signature in black ink, appearing to read 'Milan Turňa', with a stylized flourish extending to the right.

Milan Turňa, PhD, Professor
Dean of the Faculty

Presidium of the Faculty

Dean: Milan Turňa, PhD, Prof.
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Scientific Board

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DEPARTMENT OF INFORMATION TECHNOLOGY AND AUTOMATION

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I. STAFF

Professors - 1
Assoc.Professors - 5
Senior Lecturers -10
Lecturers - 10

Research Officers - 0
PhD Students - 6
Technical Officers - 3

II. EQUIPMENT**II. 1 Teaching and Research Laboratories**

- CAD/CAM laboratory - 7 sun and 3 HP workstations
- Automation and Control Laboratory
- Unix Laboratory - 16 alpha numeric terminals
- PC Laboratory
- Robotics Laboratory
- X-terminal Laboratory

II. 2 Special Measuring Instruments and Systems

- PCL system

III. TEACHING**III.1 Bachelor Study**

<i>Name of subject</i>	<i>semester</i>	<i>hours per week</i> <i>lectures- seminars</i>	<i>reader's</i> <i>name</i>
Theory of Automatic Control	3	3 - 2	Moravčík
Data Models	3	2 - 2	Mišút
Information Technology Basics	3	2 - 2	Schreiber
Software Technologies I,II	3,4	0 - 3	Baranovič
Software Engineering	4	3 - 3	Moravčík
Computer Architecture	4	2 - 2	Pohlmüller
Operation Systems	4	2 - 2	Velicsányi
Computer Graphics	5	3 - 3	Vasky
Database Systems	5	3 - 3	Mišút
System Programming	5	2 - 2	Velicsányi
Computer Networks	5	2 - 2	Petrík
Automation in Industry	6	3 - 3	Božek
Information Systems	6	3 - 3	Mišút

III. 2 Graduate Study

Information Technology Basics I,II,III,IV	1 - 4	1 - 2	Doskočil, Schreiber
Theory of Automatic Control	5,7	2 - 2	Vrban, Pecko, Pohlmüller
Software Engineering	5	2 - 2	Moravčík
Computer Graphics	6	2 - 2	Tanuška
Computer Architecture	6	2 - 2	Pohlmüller
System Programming I,II	7,8	2 - 2	Velicsányi, Baranovič
Artificial Intelligence	7	2 - 3	Schreiber
Graphical Systems I,II	7,8	2 - 3	Vaský
Means of Automatic Control	8	3 - 3	Michalčonok
Database Systems	8	3 - 3	Mišút
Modelling and System Simulation	8	2 - 2	Važan
CIM	7	3 - 3	Važan
NC Programming	7	3 - 3	Božek
Production System Planning	8	3 - 2	Mišút
Information Systems	9	2 - 4	Mišút
Computer Networks	9	3 - 3	Velicsányi
Production Systems Design	9	2 - 3	Doskočil
Production Systems Control	9	3 - 3	Važan
CAD / CAE	9	3 - 3	Vaský

IV. RESEARCH TARGETS

- office automation
- Client-server Architecture Systems (Design, Tuning, Data Management, Data Security, Applications)
- Artificial Computers Networks
- Modelling and Simulation of Systems (Discrete-event deterministic Systems, Petri-Nets)
- Computer Graphics and CAD/CAM

V. RESEARCH PROJECTS

- Analysis and design of Project-Management Systems
- Objects-oriented client-server applications
- Departure automation
- Laboratory for Automated Control Systems
- CIM equipment

VI. COOPERATION

- IFW e.V. Dresden

- TEMPUS JEP 7413 - Short Cycle Degree in Environmental Science, Safety and Waste Management (Belgium, Ireland, Germany)

VII. THESES

VII. 1 Graduate Theses

- Verification of application INNOVATOR CASE-system
- Information system of the department
- Implementation of adaptive controllers into a PCD-PLC
- Register and statistical module of programming system for storage economy administration little or intermediate commercial company
- Design of electronic interconnection employment exchanges
- Design of trial system in architecture client/server
- Design of method and valuation criteria of complex information systems
- Management of flexible manufacturing systems by using SIMFACTORY II .5 simulator
- Processing, classification and data storage recovered from repeating experiments
- Verification of integration resources in AutoCAD R12 graphics system and 3D Studio R4 programming system
- Design of information system for the guidance and consultation center
- Design of management for automated tester stand
- Solution of selected problems at neuron network
- Applications computer -on-a-chip microcomputers in automated measured and controlled
- Design of information system for the monitoring and management projects
- Automated wire for manufacturing of scaffolding coupler TL
- Administration of flexible manufacturing systems illustrated on FISCHER module
- Load analysis and exploitation design of personal cards at PPS state enterprise Detva
- Programming the system for storage of economy administration in a small and medium-size commercial company
- Exploitation of SIMFACTORY II.5 simulator in simulation control of manufacturing flexible system
- Design of information system for the supplies at Nuclear Power Station
- Software security
- Solution of selected questions concerning neuron network
- Application of Petri nets at simulation of flexible manufacturing cells
- Implementation of adaptive controllers on a PCD-PLC
- Design of system for heat and temperature measurement
- Administration of storage economy in manufacturing systems illustrated on FISCHER module
- Automation of recording the parameters measured at car manufacturing
- Design for enhancement responsibility of the 5-step conversion device
- Strategy for checking the flexible manufacturing cells using SIMFACTORY II.5 simulator
- Creation of testing programme oriented into MS DOS

- Control system design and application for plant of demercurization waste water
- Analysis, design and implementation of select information system module at the department
- Software for debtors register, debt calculation and debtors' administration
- Designing a form modulus of programming system for administration in a commercial company
- Process automation for inject of plastic injection mould
- Project of system solution of laboratory for information technology training at the Department of management and quality
- Solution of selected problems concerning neuron network
- Design of direct numerical control system by one-way engine

VIII. OTHER ACTIVITIES

- 15 study stay about 3 week in Germany, Ireland, Belgium
- 5 visiting professors from EU
- Commercial cooperation with Research Institute of Nuclear Power Supply Trnava

IX. PUBLICATIONS

- [1] MORAVČÍK, O. - MIŠÚT, M. - VAŽAN, P.: Simulation of a RFC Control. In: Proceedings of the second ECPD International Conference on Advances Robotics and Intelligent Automation. Wiena 1996.
- [2] MIŠÚT, M. - MORAVČÍK, O.: Decision Support Systems in Manufacturing Systems Management. In: Management and Control of Manufacturing Systems. London, Springer Verlag 1996.
- [3] BOŽEK, P. - DRAGŮN, D.: System provision quality subduable in automated engineering production. In: CO-MAT-TECH '96. Proc. Vol. 2. Bratislava, SUT 1996, pp. 307-311.
- [4] DRAGŮN, D.: Organization, control and automation of engineering production - current situation. In: CO-MAT-TECH '96. Proc. Vol. 2. Bratislava, SUT 1996, pp. 311- 315.
- [5] FULEK, R. - VANDEN BERGHE, G. - KAHO SINT LIEVEN: Scheduling in Constraint Logical programming. In: CO-MAT-TECH 96. Proc. Vol. 2. Bratislava, SUT 1996, pp. 315-319.
- [6] HALAMA, J.: General purpose of modular system for development application on computer -on-a-chip. In: CO-MAT-TECH '96. Proc. Vol. 2. Bratislava, SUT 1996, pp. 319 - 321.
- [7] KLAČO, M. - HRENÁK, J.: Implementation of information system in conditions of the Department of informatics and automation. In: CO-MAT-TECH '96. Proc. Vol. 2. Bratislava, SUT 1996, pp. 323 - 327.
- [8] PETRÍK, D. - VELICSÁNYI, L.: Application information technologies at the Departments of applied information technology and automation. In: CO-MAT-TECH '96. Proc. Vol. 2. Bratislava, SUT 1996, pp. 327 - 331.
- [9] PETRÍK, D.- MORAVČÍK, O.: Warehouse-technology EDA and FOCUS systems. In: CO-MAT-TECH '96. Proc. Vol. 2. Bratislava, SUT 1996, pp. 331-335.

- [10] TANUŠKA, P.: Knowledge of artificial intelligence used in constructed elements of winch type. In: CO-MAT-TECH '96. Proc. Vol. 2. Bratislava, SUT 1996, pp. 335-339.
- [11] VASKÝ, J.: Decision development of application software by internal functions calling of graphic system. In: CO-MAT-TECH '96. Proc. Vol. 2. Bratislava, SUT 1996, pp. 339-343.
- [12] VAŽAN, P. - MIŠÚT, M. - MORAVČÍK, O.: Creation process of manufacturing systems simulation models. In: CO-MAT-TECH '96. Proc. Vol. 2. Bratislava, SUT 1996, pp. 343-346.
- [13] MIKSA, F. - NEMLAHA, E.: Resistance of selected materials against abrasive and erosive waste. In: CO-MAT-TECH '96. Proc. Vol. 2. Bratislava, SUT 1996, p. 89.
- [14] MORAVČÍK, O. - VASKÝ, J. - MIŠÚT, M.: Software engineering. Bratislava, SUT 1996.
- [15] MIKSA, F. - NEMLAHA, E.: Tensions and deformation in a weld from tenuous materials. In.: Spawanie w energetike '96. Poľsko 1996.
- [16] MIKSA, F. - NEMLAHA, E.: Choice of surface welding materials from the aspect of condition wear. In.: TECHRENO '96. Žilina 1996.
- [17] VAŽAN, P. - MIŠÚT, M. - MORAVČÍK, O.: Simulation of the management strategy. In.: Scientific works of the FMST. Vol. 4. Bratislava, SUT 1996.
- [18] PETRÍK, D. - VELICSÁNYI, L.: Application of information technologies at FMST. In: UNINFOS '96. Nitra 1996, pp. 81 - 83.
- [19] FULEK, R. - BERGHE, G. VANDEN: Constraint Logic programming by the scheduling problem solving. In.: Second scientific conference Academic Dubnica. Trnava, FMST 1996.
- [20] MORAVČÍK, O. - MIŠÚT, M. - FULEK, R.: TEMPUS Project as a base of design information technologies at the Department of ITA FMST. In.: TEMPUS Workshop. Bratislava 1996.
- [21] KOVÁČ, J. - FULEK, R.: Industrial ecology - bachelor study at FMST. In.: TEMPUS Workshop. Bratislava 1996.

DEPARTMENT OF APPLIED MECHANICS

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I. STAFF

Professors - 0
Assoc.Professors - 6
Senior Lecturers - 11

Research Officers - 0
PhD Students - 3
Technical Officers - 4

II. EQUIPMENT

II. 1 Teaching and Research Laboratories

- mechanical laboratory
- tribological laboratory
- computational laboratory
- specialized CAD laboratory
- manufacturing workshop

II. 2 Special Measuring Instruments and Systems

- equipment for testing of tribological material properties
- SYSTUS, ANSYS computational systems
- equipment for noise measurements
- equipment for strain gauges measurements

III. TEACHING

III.1 Bachelor Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week</i> <i>lectures- seminars</i>	<i>reader's</i> <i>name</i>
Technical Documentation	1	1 - 2	Rusnák
Work Safety	1	0 - 2	Sabo
Hydro-Thermomechanics	3	4 - 2	Taraba
Strenght of Materials	3	2 - 2	Jelemenský
Degradation Processes in Materials	4	1 - 1	Ulrich
Fracture Mechanics	4	2 - 1	Ulrich
Computer Supported Design	3	1 - 3	Muráň
Applied Mechanics	3	2 - 2	Mudrik
Safety of Technological Processes	3	2 - 2	Sabo
Noise and Vibration	4	2 - 2	Mudrik
Theory of safety and Reliability	4	2 - 2	Čačko

Biomechanics	3	0 - 2	Koudelka
Power Machines	6	2 - 1	Taraba
Hydraulic and Pneumatic Mechanisms	6	2 - 2	Behúlová
Safety Technology	3	2 - 2	Sinay
European Standards of Work Safety	3	2 - 2	Koreň
Manipulation with Materials	3	2 - 2	Jánský
Sources and Reasons of Explosions and Crashes of Manufacturing Systems	4	2 - 2	Skarba
Organization and Control of Work Safety	4	2 - 1	Sabo
Prediction of Safety	3	0 - 2	Starek
Fire Prevention Technology	4	0 - 2	Balogh
Safety Analysis	4	0 - 2	Bály
Work Safety	5	2 - 1	Sabo

III. 1 Graduate Study

Basics of Engineering Design	1	2 - 3	Rusnák
Strength of Materials	3	3 - 2	Jelcenský
Mechanics I	4	2 - 3	Mudrik, Peká- rek, Stareček, Nadř
Mechanics II	4	2 - 2	Taraba, Behúlová
Thermodynamics	5	2 - 2	Behúlová
Mechanisms and Machine Parts	5	2 - 2	Muráň
Computer Supported Design	6	2 - 2	Muráň
Mechanics III	5	2 - 2	Mudrik
Fracture Mechanics	5	2 - 1	Ulrich
Finite Element Method	6	2 - 1	Jelcenský
Mechanics of Manipulation Mechanism	7	2 - 2	Mudrik
Tribology	8	2 - 2	Rusnák
Mechatronics	8	2 - 2	Mudrik
Organization and Control of Work Safety	7	2 - 1	Sabo
Diagnostics and Maintenance of Technical Plants	8	2 - 1	Sabo
European Standards of Work Safety	8	2 - 1	Sabo

IV. RESEARCH TARGETS

- investigation of tribological properties of new friction materials - plasma spraying materials

- numerical analysis and simulation of technological processes and engineering structures
- investigation of mechatronical problems of machinery dynamics
- investigation in field of theoretical and applied mechanics

V. RESEARCH PROJECTS

- Applications of special FEM codes for analysis and simulation of constructions an technological processes
- Analysis of tribological properties of advanced materials
- Mechatronical problems of machinery dynamics
- Analysis of rotationally - normally - translational general body motion in E3
- Summary specification and teaching methods for subjects in study branch "Safety of Technological Systems and Processes".

VI. COOPERATION

- International scientific - technical programme "New generation of motion and power transmission"
Partners:
 - Institute of Mechanics, Izhevsk State Technical University, Russia
 - Mechanical Engineering Research Institute, Russian Academy of Science
 - Institute of Mechanics and Biomechanics, Bulgarian Academy of Sciences
 - Technical University Brno
 - University Miskolc
 - Institute of Design of Precise and Optical Instruments, Warsaw Technical University
 - Institute of Mechanics and Metal-Polymeric Systems, Belorussia Academy of Sciences
 - Technical University of Cluj-Napoca
 - Nottingham Trent University
 - Center for NIS Studies, California State University, Los Angeles

VII. THESES

VII. 1 Graduate Theses

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VII. 2 PhD Theses

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VIII. OTHER ACTIVITIES

- "Mechatronic problems in drive dynamics" (Mudrik) - International Symposium Theory and practice of gearing, Izhevsk 1996
- "Basic of strenght of materials" (Jelemenský) - Courses for postgraduate students Euro Weld Engineer, Euro Weld Technology 1996

- Main organizer of seminar: "Problems of the dynamics of machine aggregates".
III. International seminar Trnava 1996.

IX. PUBLICATIONS

- [1] JURČO, I. - TURZA, J. - MURÁŇ, M.: Contact stresses of support rollers. In: Academic Dubnica. II. scientific Conference 1996.
- [2] Pekárek, F.: Yerk of point. In: Proceedings of scientific works of FMST SUT Trnava. Vol. 4. Bratislava, SUT 1996.
- [3] BEHÚLOVÁ, M. - GRGAČ, P. - KABÁT, E.: Numerical simulation of nucleation temperature influence on rapid solidification process of undercooled hypereutectic iron alloy droplets. In: Engineering mechanics '96. Brno 1996.
- [4] LABAŠ, V. - TRNOVCOVÁ, V. - MINÁRIK, S. - TARABA, B.: Analysis of residual stresses in anisotropic systems. In: Computational mechanics '96. Pernink 1996.
- [5] MUDRIK, J. - KRÁL, Š. - LABAŠOVÁ, E. - GOLDFABR, V. I.: Dynamics of machine aggregates with gearing. In: Engineering mechanics '96. Brno 1996.
- [6] MUDRIK, J. - KOSORIN, D. - LABAŠOVÁ, E. - LIPTÁK, N.: Dynamical loading by PC cotrolled mechanical device. In: Theory and practice of gearing. Izhevsk 1996.
- [7] TARABA, B. - PÁLKA, V.: Inverse problem of heat transfer of moving Ar+H2 plasma into plate. In: Engineering mechanics '96. Brno 1996.
- [8] MUDRIK, J. - GOLDFABR, V. I.: Contribution of machine aggregates to the theory of machines and mechanisms. In: Problems of the Dynamics of Machine Aggregates. III. International seminar. Trnava 1996.
- [9] RUSNÁK, J. - ULÍKOVÁ, M.: Some remarks on testing the tribological material properties, plasma sprayed surface layers. In: Intertribo '96. VI. International symposium 1996.
- [10] SABO, M.: HAZOP method and hazard analysis for design and service of machines and devices. In: FIRECO '96. II. International conference Bratislava 1996.
- [11] BEHÚLOVÁ, M. - GRGAČ, P. - KABÁT, E.: The heat transfer during rapid solidification of undercooled hypereutectic Fe-C-X alloy droplets. In: Rapidly Quenched and Metastable Materials. Ninth International Conference. Book of Abstracts Bratislava 1996.

DEPARTMENT OF PHYSICS

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I. STAFF

Professors - 3
Assoc. Professors - 6
Senior Lecturers - 16

Research Officers - 1
PhD Students - 3
Technical Officers - 5

II. EQUIPMENT

II. 1 Teaching and Research Laboratories

- Laboratory of Physics I-II, teaching of the mechanics and electromagnetism
- Laboratory of Physics III, teaching of the quantum mechanics and the nuclear physics
- Laboratories of Electrotechnics, teaching of the elementary electrotechnics
- Laboratory of Interferometry techniques, applications of interferometry to elastic and elastic - plastic properties investigations
- Laboratory of electron beam, processing specific system and unique techniques enabling the welding of large samples by the electron beam in the high vacuum
- Laboratory of advanced materials, effect of the process technology on microstructure, conductivity, dielectric response, mechanical and dilatation properties of ceramics, glasses, nanocomposites and superionic fluoride eutectic composites may be investigated

II. 2 Special Measuring Instruments and Systems

- The impedance spectroscopy in the temperature range 20-600 °C
- The modular spectroscopy in the frequency range 1 - 10⁶ Hz, up to 300 °C
- Flow Sorb, fy. Micromeritics, determination of the surface of the powder systems, accuracy 0.5 - 3%
- electron beam welding apparatus FL 7.5 (high vacuum 10⁻⁵ Pa, power required 7.5 kW)

III. TEACHING

III. 1 Bachelor Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week lectures- seminars</i>	<i>reader's name</i>
Physics I	2	4 - 2	Kozik
Physics II	3		Garaj

III. 2 Graduate Study

Physics I	2	3 - 3	Kozík, Garaj
Physics II	3	4 - 2	Kalužný, Garaj
Physics III	4	2 - 3	Ožvoldová, Čerňanský
Electrotechnics	4	3 - 2	Kosorin
Introduction to Engineering			
Physics	1	1 - 2	Ožvoldová
Physics of Continuum	5	2 - 1	Čerňanský
Electronics	5	2 - 2	Kosorin
Solid State Physics	6	2 - 2	Čerňanský
Physical Methods of Measuring I	4	0 - 2	Gášparík
Physical Methods of Measuring II	5	0 - 2	Gášparík

IV. RESEARCH TARGETS

The investigation of the relations between preparation conditions, microstructure and physical properties of ceramics (based on ZrO_2 , YBaCuO, basalt and caolin), ceramic composites, superionic fluoride composites and glasses (system As-S, As-Ge-S, As-Ga-S, etc.) are the main topics in research area. The aim of this research area is to contribute to the fundamental understanding of materials. This is realised by the investigation of materials structure, modelling and simulations, and finally by the development of characterisation methods with the main topics improved quantification and in situ materials manipulations. The structure and phase formation of chosen materials were investigated by X-ray diffractometry and by EDAX.

Results on mechanical properties of superionic fluoride composites were obtained by the simulation of residual thermal stresses. The Finite Element Method model was compared and correlated with experiments on toughness of these materials by the indentation method.

The development of materials characterisation methods is focused on improved spectroscopic methods (UV-VIS, absorption and luminescence) especially on analysing the chemical bondings and their structure.

Electronic and ionic transport properties are investigated by the modular spectroscopy and/or the impedance spectroscopy in correlation with the structural properties and the process technology.

Simple method for sintered oriented YBaCuO material was developed. Preferred orientation of crystallographic axes was obtained by means of acoustical excitations of powder in gravitational field.

V. RESEARCH PROJECTS

- Relationship of physical and mechanical properties of ceramic materials and superconducting systems to their process technologies (grant VEGA)

- Constructing of the holographic apparatus for the investigation of selected materials properties
- Mass, charge and energy transport in superionic conductors (grant VEGA)

VI. COOPERATION

- Mass, charge and energy transport in superionic conductors, (Grant VEGA) in cooperation with Institute of Physics of the Slovak Academy of Sciences
- Model and numerical simulation of technology, structure and properties of advanced materials, in cooperation with the Department of Applied Mechanics, FMST SUT

VII. THESES

VII. 1 Graduate Theses

- Microstructure and physical properties of superionic fluoride composites
- Technological conditions of injection moulding of natural basalt
- Morphology of textured superconductive ceramic materials
- Influence of mechanical vibrations, pressure and temperature on the texture of superconductive ceramic materials

VII. 2 PhD Theses

- Relation between structure and properties of basalt composites
- Optimization of the process technology of basalt mixture
- The holographic method of elastic constants establishing
- Analysis of residual stresses in anisotropic systems
- Two-dimensional structure formation inside the powder systems exposed to sound waves propagation.

VIII. OTHER ACTIVITIES

- Physics, 24 hours/semester, Postgraduate study lectures
- Electrotechnics in welding, Postgraduate study lectures
- Cooperation in organizing the distance study at FEEIT SUT
- Cooperation in organizing the regional Physics Olympiad

IX. PUBLICATIONS

- [1] MINÁRIK, S. - KOZÍK, T. - KALUŽNÝ, J. - KRABBES, G. - SCHLAFER, D.: Acoustical excitations of $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ powders in a gravitational field, *Ceramics*, 40, 4 (1996) pp. 121- 129.
- [2] MINÁRIK, S. - LABAŠ, V. - KALUŽNÝ, J. - KOZÍK, T.: Elastic hysteresis simulation in coarse grained HTC ceramics, In.: *Proceedings of FMST SUT Bratislava*, (1996) pp. 273 - 280.

- [3] OŽVOLDOVÁ, M.: Impact of alkali metals on the optical properties of aluminium phosphate glasses doped with uranium, Proceeding of FMST SUT Bratislava, (1996) pp. 287 - 291.
- [4] KUBLIHA, M. - KALUŽNÝ, J. - KOZÍK, T. - RIEDLMAJER, R.: Electrical modulus of basalt mixtures. In. Proc. CO-MAT-TECH '96. 4 th. conference, Trnava, FMST SUT (1996) pp. 65 - 68.
- [5] LABAŠ, V. - TRNOVCOVÁ, V. - MINÁRIK, S. - TARABA, B.: Analysis of residual stresses in anisotropic systems, In.: Computational mechanics '96, Pernik, (1996) pp. 127 - 134.
- [6] LEŽAL, D. - MARIANI, E. - KALUŽNÝ, J.: Chalcogenide fibres for Er: YAG and CO laser energy delivery, In.: CO-MAT-TECH '96, 4-th conference, Trnava, FMST SUT (1996) pp. 79 - 82.
- [7] MUDRIK, J. - KOSORIN, D. - LABAŠOVÁ, E. - LIPTÁK, N.: Dynamical loading by a PC controlled mechanical device, In.: Theory and Practice of Gearing, Izhevsk, IGTU (1996) pp. 79 - 84.
- [8] OŽVOLDOVÁ, M.: Luminiscence properties of zirconia ceramics, In. Proc. Didmattech '96, Olomouc, University of Palacky (1996) 69 - 74.
- [9] TRNOVCOVÁ, V. - FEDOROV, P. P. - LABAŠ, V.: Physical properties of superionic composites based on rare earth trifluorides. In. Proc. Solid States Ionics - new development, Kandy, ASSSIS, (1996) pp. 585 - 592.
- [10] MCHARO, J. - TURŇA, M. - OŽVOLDOVÁ, M.: Solar Energy application in technological processes. In. Proc. Energy transformations in industry, Košice (1996) pp. 448 - 497.
- [11] TRNOVCOVÁ, V. - FEDOROV, P.P. - LABAŠ, V.: Electrical dielectric and mechanical properties of inorganic fluoride and/or oxide superionic crystals or directionally solidified eutectic composites, Balatonfured, ESF (1996) p. 7.

DEPARTMENT OF HUMANE SCIENCES

Head of the Department:
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Fax :

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I. STAFF

Professors - 2
Assoc. Professors - 3
Senior Lecturers - 5

Research Officers - 0
PhD Students - 0
Technical Officers - 1

II. EQUIPMENT

II. 1 Teaching and Research Laboratories

-

II. 2 Special Measuring Instruments and Systems

-

III. TEACHING

III.1 Bachelor Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week lectures- seminars</i>	<i>reader's name</i>
History of Technology	2	0 - 2	Chyba
Enterpreneurial Law	2	0 - 2	Indrišek
Design	4	2 - 2	Polívka
Psychology of Work	5	2 - 1	Sawicki
Business and Civil Law	5	2 - 2	Indrišek
Laws, Regulations and Organization of State Administration	5	2 - 1	Tomana
Recruitment, Training and Requalification of Staff	5	2 - 2	Holkovič
Methods of Sociological Research	5	2 - 2	Csampa
Education and Diagnostics of Adults	6	2 - 2	Kačáni
Evaluation and Remune- ration of Staff	6	2 - 2	Šimo
Solving the Work Conflicts	6	2 - 2	Gajdošová
Planning the Personnel and Social Development	6	2 - 2	Šíma

Social Roles Training	6	0 - 2	Kozoň
Thesis	6	0 - 1	Holkovič
Industrial Sociology	5	2 - 1	Csampa
Social Pedagogy	5	2 - 1	Končal
General Economic Theory	6	2 - 1	Botik
Management	6	2 - 1	Šíma

III. 2 Graduate Study

History of Technology	1	0 - 2	Chyba
History of Philosophy	1	0 - 2	Cako
Philosophy of Technology	2	0 - 2	Skalský
Rhetoric	2	0 - 2	Cako
Sociology	3	2 - 1	Csampa
General Economic Theory	3	2 - 1	Mrvová
Politology	4	0 - 2	Končal
International Economic Relations	4	0 - 2	Mrvová
Humane Ecology	5	0 - 2	Kusin
History of Technology	5	0 - 2	Chyba
History of Philosophy	5	0 - 2	Kusin
Industrial Sociology	6	0 - 2	Csampa
Rethoric	6	0 - 2	Patáková
Social Work II.	5	2 - 1	Šíma
Psychology of Personality	6	0 - 2	Kačáni
Extra-Work Social Environ- ment and Conditions for Staff	6	0 - 2	Kačani
Introduction into Research Work	8	1 - 1	Skalský
Fundamentals of Law for Managers	7	2 - 1	Indrišek
Prognostics	7	1 - 2	Fogelová
Introduction into Law for Technicians	7	2 - 1	Indrišek
Design	7	2 - 1	Polívka
Synergetics	8	0 - 2	Dubnička
Industrial Sociology	8	0 - 2	Csampa
Methods of Sociological Research	8	2 - 2	Csampa
Social Politics	8	3 - 1	Šíma
Business and Civil Law	7	2 - 1	Indrišek
Criminal and Family Law	8	0 - 2	Indrišek
Introduction into Research Work	9	0 - 2	Skalský

IV. RESEARCH TARGETS

- Humane Sciences
- Social Sciences
- Philosophy
- Cosmology
- Physics

V. RESEARCH PROJECTS

- Social sciences participation on the form of graduate of the FMST

VI. COOPERATION

-

VII. THESES

VII. 1 Graduate Theses

-

VIII. OTHER ACTIVITIES

- Special lectures for postgraduate students in „Philosophy of Technology“

IX. PUBLICATIONS

-

DEPARTMENT OF ENGINEERING PEDAGOGY AND PSYCHOLOGY

Head of the Department:
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I. STAFF

Professors - 1
Assoc.Professors - 2
Senior Lecturers - 10

Research Officers - 0
PhD Students - 24
Technical Officers - 3

II. EQUIPMENT

II. 1 Teaching and Research Laboratories

-

II. 2 Special Measuring Instruments and Systems

-

III. TEACHING

III.1 Bachelor Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week lectures- seminars</i>	<i>reader's name</i>
Psychology	1	0 - 2	Boroš

III. 1 Graduate Study

Communication in Management	9	9	Borošová
Psychology in Managerial Work	8	14	Kováč
Leadership		2 - 2	Schuller
Psychology of Personality		0 - 2	Boroš

IV. RESEARCH TARGETS

-

V. RESEARCH PROJECTS

- Bajčík, V. et al: Life Orientation and Selfsatisfaction of Bachelor and Doctoral Students at the Faculty of Materials Science and Technology
- Hambalík, J. et al: Identification of Factors Influencing the Study Deve-lopment of Students at FMST

- Kostelník, J. et al: Asserting of Graduates from FMST in Practice.
- Turek, I.: Transformation of Educational Process in Secondary Schools in the Slovak Republic according to Requirements of Community Development
- Driensky, D. et al: Lifelong Education of Engineers under Conditions of Technological, Economic and Social Changes. Grant task 1996.

VI. COOPERATION

-

VII. THESES

VII. 1 Graduate Theses

-

VII. 2 PhD Theses

- Hambalík, A.: Identification of Computer Aided Education Process in Electrotechnical Subjects. Dissertation Work. Bratislava, SUT FMST 1996. 257 p.
- Tináková, K.: Didactic Principles of Computer Aided Training in Electro-technical Laboratory Exercisses. Dissertation Work. Bratislava, SUT FMST 1996. 298 p.

VIII. OTHER ACTIVITIES

- Complementary Teacher Training

<i>Name of subject</i>	<i>semester</i>	<i>hours per week lectures- seminars</i>	<i>reader's name</i>
Pedagogy I	1	2 - 0	Budinec, Kostelník
Psychology I	1	2 - 0	Borošová, Bustinová
Pedagogy II	2	1,2 - 0,8	Budinec, Kostelník
Psychology II	2	1,2 - 0,8	Borošová, Bustinová
Didactics of Special Technical Subjects I	2	1,2 - 0,8	Mesárošová, Hr- mo, Kundrátová, Hambalík, Tiná- ková, Koláriková
School Youth Biology	1	1,3 - 0	Broniš
History of Engineering	1	1,3 - 0	Chyba
Didactics of Special Technical Subjects II	1	2 - 0	Mesárošová, Hr- mo, Kundrátová, Hambalík, Tiná- ková, Koláriková

Seminar on Pedagogical Practice	2	0 - 01,3	Mesárošová, Hrm- mo, Kundrátová, Hambalík, Tiná- ková, Koláriková
Pedagogical Practice	2		Mesárošová, Hrm- mo, Kundrátová, Hambalík, Tiná- ková, Koláriková
Adult Education	1	1,3 - 0	Kostelník
Mental Hygiene	1	1,3 - 0	Bajčík
Basics of Legal Education	1	1,3 - 0	Kopšová
Didactic Engineering	1	1,3 - 0	Hambalík
Pedagogy I	1	2 - 0	Budinec, Kostelník
Psychology I	1	2 - 0	Borošová, Bustinová
Pedagogy II	2	2 - 0	Budinec, Kostelník
Psychology II	2	2 - 0	Borošová, Bustinová
Special Technical Subjects	2	2 - 0	Mesárošová, Hrm- mo, Kundrátová, Hambalík, Tiná- ková, Koláriková
School Youth Biology	2	1,3 - 0	Broniš
Didactics of Special Technical Subjects	1	2 - 0	Mesárošová, Hrm- mo, Kundrátová, Hambalík, Tiná- ková, Koláriková
Seminar to Pedagogical Practice	1	0 - 1,3	Mesárošová, Hrm- mo, Kundrátová, Hambalík, Tiná- ková, Koláriková, Bajčík
Mental Hygiene	1	1,3 - 0	Bajčík
Didactic Engineering	1	1,3 - 0	Hambalík
Pedagogical Practice	1		Mesárošová, Hrm- mo, Kundrátová, Hambalík, Tiná- ková, Koláriková

IX. PUBLICATIONS

- [1] BUSTINOVÁ, L. - BOROŠOVÁ, Z.: Personality of the University Teacher from the Point of View of University Students. In: CO-MAT-TECH '96. Proc. Tmava, SUT 1996, pp. 131-133.

- [2] DRIENSKY, D.: Humanisation of Engineering study in Slovakia. In: Education by Communication. Report from 25 International Symposium of Engineering Pedagogy '96. Budapest, Leuchtturm Verlag 1996, pp. 588- 593.
- [3] DRIENSKY, D.: Slovak Republic - Higher Education, Education of Engineers, Science and Research. In: European Engineering Yearbook. London, KMIL 1996, pp. 237- 241.
- [4] DRIENSKY, D.: Preparation of Engineers for European Standard - RURING. In: Technological Engineering. Almanach from International Conference. Trnava, FMST SUT 1996, pp. 45-48.
- [5] HRMO, R.: Video - for and against. In: CO-MAT-TECH '96. Proc. Trnava, SUT 1996, pp. 145-147.
- [6] MESÁROŠOVÁ, A.: Employment of Hypermedia in Teaching Chemical Subjects. In: CO-MAT-TECH '96. Proc. Trnava, SUT 1996, pp. 183-186.
- [7] TUREK, I.: On Some Present Concepts of Education. In: CO-MAT-TECH '96. Proc. Trnava, SUT 1996, pp. 193-197.

DEPARTMENT OF MANAGEMENT AND QUALITY ENGINEERING

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I. STAFF

Professors - 3
Assoc. Professors - 8
PhD Students - 15

Research Officers - 2
Senior Lecturers - 18
Technical Officers - 3

II. EQUIPMENT

II. 1 Teaching and Research Laboratory
- Computer Laboratory

II. 2 Special Measuring Instruments and Systems

III. TEACHING

III. 1 Bachelor Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week</i> <i>lectures- seminars</i>	<i>reader's</i> <i>name</i>
Enterprise Economy	1	3 - 2	
Statistical Methods	1	2 - 2	
Enterprise Management	1	2 - 2	
Accounting	1	2 - 3	
Marketing	2	2 - 2	
Information System	2	2 - 3	
Operational Research	2	2 - 3	
Industrial Technologies	2	3 - 2	
Production Management	2	2 - 2	
Personnel and Social Programme	3	3 - 1	Sablik
Computer Aided Management	3	1 - 3	Šrubařová
Logistics	3	2 - 2	Červeňan
Economical Analysis	3	3 - 3	Doubková
Investment Development	3	3 - 3	Sablik
Ergonomy	4	2 - 2	Sablik
Information Systems Automation	4	2 - 4	Dobrotka
Engineering Metrology	4	2 - 2	Maduda
Value Analysis	4	2 - 2	Molnár

Machines and Equipment			
Maintenance	4	2 - 2	Buroč
Final Project	4		
Plant Information System	4	2 - 1	
Taxation			

III. 2 Graduate study

Management of Enterprise			
Development	7	3 - 2	Molnár
Accounting	7	2 - 1	Mulíková
Information Systems Automation	7	2 - 3	Dobrotka
Operational Research	7	3 - 3	Štrpka
Marketing	7	3 - 1	Brezník
Production Management	8	3 - 3	Čambál
Management and Banking	8	3 - 2	Červeňan
Taxation	8	2 - 2	
Final Project		0 - 5	
Accounting in Enterprise			
Activities		0 - 3	
Economical Analysis	9	2 - 2	Doubková
Finances and Banking	9	2 - 2	Červeňan
Quality Management	9	3 - 2	Linczényi
Final Project		0 - 5	
Operational Research	7	3 - 3	Štrpka
Management of Enterprise			
Development	7	3 - 2	Molnár
Quality Management	7	3 - 2	Linczényi
Tools and Techniques			
of Quality Management	7	2 - 2	
Logistics in Quality Assurance	8	2 - 2	
Marketing in Quality			
Management	8	3 - 2	Jedlička
Production Management	8	3 - 3	Čambál
Statistical Methods			
of Quality Inspection	8	2 - 3	Kučerová
Final Project	8	0 - 5	
Information Systems	7	2 - 2	
Computer Operating	8	0 - 2	
Taxation	8	2 - 1	
Certification of Products, Quality			
Control System and Personnel	9	1 - 1	Linczényi
Statistical Methods of Quality			
Inspection	9	2 - 3	Kučerová
Computer Aided Quality Control	9	2 - 2	Dobrotka
Logistics	9	2 - 2	Červeňan
Final Project	9	0 - 5	

IV. RESEARCH TARGETS

- quality control in industrial enterprises
- quality control in service enterprises
- value management application
- advanced information technologies implementation

V. RESEARCH PROJECTS

- Quality Assurance in Public Services Oriented on Power and Gas Industry
- Value Management Application in Designing the Programmes for Engineering Companies Conversion
- Research into Theory and Practice of Designing the Model for Quality Control Organisation in Medium-size Enterprises
- Managerial Training in the Conditions of Economics Transformation
- Implementation of Information Technologies into Management Training/ Teaching and into Organisations
- Evaluating the Value Management in Companies Quality Control

VI. COOPERATION

Agreement on cooperation between the Department of Work Science, Brandenburg Technical University, Cottbus and the Department of Management and Quality, FMST SUT

VII. THESES

VII. 1 Graduate Theses

- field of quality control systems
- costs analysis
- value analysis application
- company organisational models
- enterprises marketing management
- operational research application
- controlling application

VII. 2 PhD Theses

- Quality Assurance in Software Design, Supply and Maintenance (Linczényi, A.)
- Application of Statistical Methods in Quality Assurance (Linczényi, A.)
- Quality Costs (Linczényi, A.)
- Verifying Products Quality in Quality System (Linczényi, A.)
- Quality Control in Nuclear Power Supply (Linczényi, A.)
- Marketing and Quality Control (Linczényi, A.)
- Designing a Model for Organisation of Quality Control System in an industrial Enterprise (Jedlička, M.)
- Organisation of Quality Control in Medium-size Enterprises (Jedlička, M.)

- A Contribution to the Methodology of Evaluating the Quality of Products in Pre-Production Stage (Šalgovičová, J.)
- Human Element in Quality Management (Molnár, P.)
- Tools and Techniques of Quality Management in Pre-Production Stages (Molnár, P.)
- Supplier-Customer Relations in Quality System (Molnár, P.)
- System of Quality Management in Jaslovské Bohunice Nuclear Power Plant (Molnár, P.)
- CAQ Systems (Zabojník, J.)

VIII. OTHER ACTIVITIES

- specialized course in the field of work rationalization

IX. PUBLICATIONS

- [1] LINCZÉNYI, A.: Quality Control, SUT Bratislava, 1996.
- [2] MOLNÁR, P.: Tools and techniques of quality assurance in the field of products and services. Piešťany 1996, p. 46.
- [3] MULÍKOVÁ, D.: Enterprise accounting & information system. In Academic Dubnica proc., Trnava, FMST SUT 1996.
- [4] SABLÍK, J.: Risk-management as a specific function of controlling. In.: Scientific works of FMST SUT Trnava, Volume 4, Bratislava SUT 1996, pp. 205-211.
- [5] ŠALGOVIČOVÁ, J.: Synergetic effect of quality control and marketing aimed at consumers benefit. In: Annotation proc. from XXI International Colloquium: Work Organisation - a factor of quality improvement and plants and firms prosperity. Trenčianske Teplice 1996, p. 9.
- [6] LINCZÉNYI, A.: Quality Control in nuclear power plants in Slovak Republic. The Eleventh International Conference of the Israel Society for Quality, Israel 1996.
- [7] ČAMBÁL, M. - SABLÍK, J.: Possible applications of controlling principles in the field of strategic investment planning. Proc. from International Scientific Conference: New Methods in Economics, Organisation and Management in Furniture Industry '96, Poznaň 1996.
- [8] ČAMBÁL, M. - JEDLIČKA, M.: Strategy of organisation development - a basis for improving the results of economic organisations. Proc. from International scientific Conference: New Methods in Economics, Organisation and Management in Furniture Industry 96, Poznaň 1996.
- [9] ČAMBÁL, M. - HÁJOVSKÁ, A. - HRADLOVSKÁ - HUDÁK, I.: Change - a chance for the company staff. In proc. from Management and Qualification Conference, Bratislava 1996.
- [10] MOLNÁR, P.: Value management - an effective technique in quality management, In proc. from Value management - Value analysis Conference. Estoril; Portugal 1996, p. 7.
- [11] MOLNÁR, P.: Value management - re-discovery of value analysis in new conditions of Slovak companies. In: Annotation proc. from XXI International Colloquium. Trenčianske Teplice 1996, p. 1.

DEPARTMENT OF MATHEMATICS

Head of the Department:
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I. STAFF

Professors - 1
Assoc.Professors - 7
Senior Lecturers - 18

Research Officers - 0
PhD Students - 6
Technical Officers - 0

II. EQUIPMENT

II. 1 Teaching and Research Laboratories
- 2 special teaching rooms

II. 2 Special Measuring Instruments and Systems
- 13 computers

III. TEACHING

III.1 Bachelor Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week</i> <i>lectures- seminars</i>	<i>reader's</i> <i>name</i>
Mathematics I	1	3 - 2	Hricišáková
Mathematics II	2	3 - 2	Rovder

III. 1 Graduate Study

Fundamentals of Computer Graphics	2	3 - 2	Zámožík
Mathematical Statistics	5	3 - 2	Halabrin
Applied Mathematics	5	2 - 2	Halabrin
Mathematics I	1	5 - 4	Červeňanský, Dillingerová
Mathematics II	2	3 - 4	Červeňanský, Dillingerová
Mathematics III	3	3 - 3	Híc, Rovder
Applied Mathematics III	5	2 - 2	Rovder
Applied Mathematics I	5	2 - 2	Híc
Fundamentals of Computer Graphics	5	2 - 2	Zámožík
Introduction into Engineering			
Mathematics	5	1 - 2	Trubenová

Numerical Mathematics	5	2 - 2	Dillingerová
Partial Differential Equations	5	2 - 1	Rovder
Discrete Mathematics	5	2 - 1	Hic
Mathematics on PC	5	1 - 2	Trubenová
Theory of Experiment	6	2 - 1	Halabrn
Complex Function Theory	6	2 - 1	Palumbiny
Theory of Planned Experiment	6	2 - 1	Halabrn
Statistical Analysis	6	2 - 2	Tóthová
Insurance and Financial Mathematics	6	2 - 1	Urbaníková

IV. RESEARCH TARGETS

- Properties of solutions of ordinary differential equations
- Metrics and topological properties of real functions
- Computer graphics - geometry problems
- Fractal and chaos
- Graph theory - special types of graphs
- Geometric interpolation of massives
- Image processing - algorithms

V. RESEARCH PROJECTS

- Functional analysis and quantitative theory of ordinary differential equations
- Geometric and related structures used in computer techniques

VI. COOPERATION

-

VII. THESES

VII. 1 Graduate Theses

-

VII. 2 PhD Theses

- Bare classification of real functions (Kostyrko, PhD. Assoc. Professor)
- Dense allocation of objects (Božek, PhD. Assoc. Professor)

VIII. OTHER ACTIVITIES

- Distance Education Courses
- 2 Courses in Mathematics
- Mathematics for Engineers
- Seminar: Teaching of Mathematics in Bachelors' Courses
- Pre-studies Courses of Mathematics
- Computational Geometry and Related Problems

IX. PUBLICATIONS

- [1] HALABRÍN, M. - ČERVEŇANSKÝ, J.: Mathematics I, II, III - textbook for distance education.
- [2] ZÁMOŽÍK, J. et al.: Fundamental of Computer Graphics.

DEPARTMENT OF MATERIALS ENGINEERING

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I. STAFF

Professors - 4
Assoc. Professors - 6
Senior Lecturers - 21

Research Officers - 4
PhD Students - 7
Technical Officers - 10

II. EQUIPMENT

II.1 Teaching and Research Laboratories:

- X-ray Diffraction Laboratory
- Electron Microscopy Laboratory
- Light Microscopy Laboratory
- Laboratory of Physical Measurement
- Vacuum annealing, sintering
- Applications for heat treatment under vacuum
- Chamber furnaces

II. 2 Special Measuring Instruments and Systems:

- Transmission Electron Microscope
- Scanning Electron Microscope
- X-ray Diffractometer
- Light Microscope
- Induction Magnetometer
- Image Analyzer
- FPZ 100/I Direct stress testing machine
- EDZ 40 dyn Direct stress Testing machine
- HPO 3000 Hardness tester
- HPO 250 Hardness tester
- Wilson Hardness tester
- Charpy 300 J Pendulum impact testing machine

III. TEACHING

III.1 Bachelor study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week lectures- seminars</i>	<i>reader's name</i>
Materials I	3	3 - 2	Hrivňák

Materials II	3	2 - 2	Grgač
Engineering Materials and Technology of Heat Treatment	3	3 - 1	Šimkovič
Heat Treatment and Surface Preparation	5	2 - 2	Grgač
Metallurgy	5	3 - 3	Grgač

III.2 Graduate study

Materials and Technology	2	2 - 3	Lipa, Makovník
Materials Science	4	3 - 2	Martinec
Engineering Materials	6	3 - 2	Šimkovič
Methods of Material Structure and Properties Research	6	2 - 2	Čaplovič
Vacuum Technology	8	3 - 2	Žitňanský
Heat Treatment Processes	8	2 - 2	Čaplovič
Experimental Methods of Material Research I	8	1 - 2	Čaplovič
Plastics and Plastics Technology	8	2 - 2	Martinec
Materials Science	3	3 - 2	Hrivňák, Hazlinger
Technology of Heat Treatment and Surface Preparation	7	2 - 2	Grgač
Processes of Heat Treatment and Sintering	7	2 - 2	Grgač
Theory of Phase Transformation	7	2 - 1	Hrivňáková
Physical Chemistry	7	2 - 2	Pinkavová
Vacuum Technology	7	3 - 2	Žitňanský
Plasma and Vacuum Metallurgy	7	1 - 1	Žitňanský
Ceramic Materials	9	2 - 2	Kozík
Composite Materials	9	2 - 2	Šebo
Experimental Methods of Material Research II	9	1 - 3	Čaplovič
Physical Metallurgy	5	3 - 2	Hrivňáková
Degradation Processes and Time Life Prediction	9	2 - 2	Puškár

IV. RESEARCH TARGETS

- vacuum metallurgy, metal refinement, crystallization of metals, materials science
- tool materials of ledeburitic type
- rapidly solidified powders
- diffusion chromising

Governmental research contract: Weldability of high strength steels.

V. RESEARCH PROJECTS

The preparation of the supermaterials with higher corrosion resistance on the base of intermetallics and composite intermetallics

- Primary and secondary structures of the rapidly solidified powders of eutectic type

VI. COOPERATION

- Within PROJECT: There are the following cooperation partners universities:
 - Slovak University of Technology in Bratislava,
 - Faculty of Electrical Engineering and Information Technology,
 - Technical University Košice,
 - Faculty of Mining,
- Study and development of tool materials on the base of Fe-C-Cr-V system prepared by rapid solidification of atomised melt (SVUM Praha).
- Laser marking on bearing steel (AVANTEK Nové Mesto nad Váhom).

VII. THESES

VII.1 Graduate Theses

- Kinetics of grow carbide layers at chromium plate tools steels and their properties.
- Morphology of oxide superconductors based on copper oxides from the aspects of preparation $YBa_2Cu_3O_{7-x}$ anisotropy sintered materials
- Analysis of rapidly solidified powders CH12MF4 ledeburitic type tool steels
- Technological conditions of injection casting of basalt mixtures
- Investigation of structural changes in maraging steels by thermal processes
- Analysis of structure and phase compositions of thermofriction quenching steels
- Preparation of YBaCuO superconductive materials by controlled crystallization
- Qualitative evaluation of carburization and nitrocarburizing layers details prepared in furnaces without controlled atmosphere and project of possibility of improved quality layers preparation
- Acoustic excitations of $YBa_2Cu_3O_{7-x}$ powders in gravitational field as means of shape anisotropy technologic utilization of individual particles
- Treatment's parameters influence on Cr-Ni-Mo-V steel properties
- The study of failure mechanism "in situ" of Cu - Al_2O_3 material
- Precipitation processes and their influence on intergranular corrosion resistance of 17247 steel welds
- Preparation, structure and mechanical properties of eutectic / - composite
- Microstructure and physical properties of fluoride composites with rapid ion conductance.

VII. 2 PhD. Theses

- The improvement of nickel base superalloys CMSX-3 - Marcel Žitňanský, PhD, Professor

- The preparation of carbidic layers by diffusion chroming and study of their properties - Peter Grgáč, PhD. Assoc. Professor
- Preparation and study of rapid solidified powders and compacts of Fe-C-Cr-V system - Peter Grgáč, PhD. Assoc. Professor

VIII. OTHER ACTIVITIES

- Project CEEPUS

IX. PUBLICATIONS

- [1] HRIVŇÁK, I.: Proceedings of the International Conference on Welding Science and Technology. Monograph. Metalurg Hotel, the High Tatras, 5-7 March 1996. Košice, HF TU 1996, p. 366.
- [2] HRIVŇÁK, I. - MATSUDA, F.: The M-A constituent and its decomposition products in HSLA welds. Metalurg Hotel, the High Tatras, 5-7 March 1996. Košice, HF TU 1996, pp. 55 - 59.
- [3] HRIVŇÁK, I. - YASUDA, Y. - SHIGA, CH.: The effect of PWHT on precipitation processes in 2L/4CrMo and 2L/4Cr Mo enhanced welds. *ibid*, pp. 59-65.
- [4] HRIVŇÁKOVÁ, D. - HRNČIAR, V. - DEMIAN, Š.: Properties of High Performance Permanent Magnets and their Applications. Proceedings "New Technologies and Materials Used for Production and Repairing of Military Technology". Trenčín, 3.-4. 10. 1996, pp. 121-123.
- [5] MARTINKOVIČ, M. - ŽITŇANSKÝ, M. - PINKE, P. - HAZLINGER, M. - EMER, Š.: Developing processes of properties improvement of nickel based superalloys. 5th International Scientific Conference, Achievements in mechanical and materials engineering, Glivice - Wisla, Poland, 4 - 6 December, 1996.
- [6] MARTINKOVIČ, M. - ŽITŇANSKÝ, M. - PINKE, P. - HAZLINGER, M. - EMER, Š.: Developing processes of properties improvement of nickel based superalloys. 5th International Scientific conference Achievements in mechanical and materials engineering, Glivice - Wisla, Poland, 4 - 6 December, 1996, pp., 197 - 201/ Faculty of Materials Science and Technology, Slovak University of Technology in Bratislava, Faculty of Mechanical Engineering, Slovak University of Technology in Bratislava.
- [7] HAZLINGER, M. - PINKE, P. - ZRNÍK, J. - ŽITŇANSKÝ, M. - MARTINKOVIČ, M.: Microstructural aspects of nickel based superalloy influenced by production technology, heat treatment and creep exposition, FEMS abstracts, Junior EUROMAT 96, p. 133/ Slovak University of Technology in Bratislava, Faculty of Materials Science and Technology, Pavlínska 16, 917 24 Trnava, Slovak Republic/ Technical University Košice, Faculty of Metallurgy, Slovak Republic.
- [8] PINKE, P. - HAZLINGER, M. - ZRNÍK, J. - ŽITŇANSKÝ, M. - MARTINKOVIČ, M.: HEAT TREATMENT OF NICKEL BASE SUPERALLOY PRODUCED BY DIRECTIONAL SOLIDIFICATION, FEMS abstracts, Junior Euromat 96, p. 221/ Slovak University of Technology in Bratislava, Faculty of

Materials Science and Technology, Pavlínska 16, 917 24 Trnava, Slovak Republik/
Technical University Košice, Faculty of Metallurgy, Slovak Republik.

- [9] BEHÚLOVÁ, M. - GRGÁČ, P. - KABÁT, E.: The heat transfer during rapid solidification of undercooled hypereutectic Fe-C-X alloy droplets. In: RQ 9 - Ninth International Conference on Rapidly Quenched and Metastable Materials. Book of Abstracts. Bratislava, 1996, p. 55. (to be published in Materials Science and Engineering A).

DEPARTMENT OF MACHINING AND ASSEMBLY

Head of the Department
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I. STAFF

Professors - 3
Assoc.Professors - 3
Senior Lecturers - 9

Research Officers - 1
PhD Students - 2
Technical Officers - 3

II. EQUIPMENT

II. 1 Teaching and Research Laboratories

- Measurement Laboratory
- Assembly Laboratory
- Mechanical Engineering Laboratory

II. 2 Special Measuring Instruments and Systems

- DKM1-3000 DP coordinate measurement apparatus fy Zeiss
- Zeiss length gauge 1 m
- Zeiss universal microscope
- Zeiss universal length gauge
- Hilger Wats autocollimator + mirror polygon
- Zeiss collimator + telescope

III. TEACHING

III.1 Bachelor Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week lectures- seminars</i>	<i>reader's name</i>
Industrial Technologies and Equipment	1	3 - 2	Velišek
Practical Metrology	2	0 - 2	Görog
Industrial Technology I	3	3 - 2	Baránek
Industrial Technology II	5	2 - 2	Baránek
Production Machines	4	3 - 2	Velišek
Tools and Fixtures	4	3 - 2	Baránek

III. 2 Graduate Study

Machining Technology	6	2 - 2	Kicko,Lipa
Metrology	6	2 - 2	Maduda
Fundamentals of Assembly	6	2 - 1	Valentovič

Tools and Fixtures	6	2 - 1	Velíšek, Baránek
Cuttings Tools	6	2 - 1	Baránek
Machining Theory	7	3 - 2	Janáč, Peterka
Designing of Production Processes and Systems	8	2 - 3	Kucháriková
Machines and Equipment for Production	8	2 - 2	Velíšek
Assembly Technology	7	2 - 1	Valentovič
NC Machine Programming	8	1 - 2	Peterka
Exercise in Metrology	7	0 - 4	Borovička
Progressive Machining Methods	9	3 - 2	Hrubeč, Lipa
Production Planning	7	2 - 2	Békés, Peterka
Mechanisation and Automation	7	3 - 2	Potocký, Velíšek
Final Project	7	0 - 5	Janáč
Finishing Machining Methods	7	2 - 1	Lipa
Progressive Methods of Products Engineering	7	2 - 1	Valentovič, Kucháriková
Assembly Computer Controlled Production	7	2 - 1	Peterka
Experimental Machining Methods	7	2 - 1	Lipa
CAD/CAM Systems	7	1 - 2	Peterka
Introduction into Machinery Technologies	7	2 - 1	Kicko
Technological Procedures and Production Planning	7	2 - 2	Békés
Design of Manufacturing	7	2 - 1	Kicko
Design of Production Systems	7	2 - 4	Kucháriková
NC Machining II	7	0 - 4	Peterka
Design of Automated Production Systems	7	2 - 1	Baránek
Design of Assembly Systems	7	2 - 1	Kucháriková

IV. RESEARCH TARGETS

- theory of machining, parts manufacturing, measurement and assembly,
- CIM, CAD/CAM, CAPP, CAQ, CAA,
- 3D art engraving,
- manufacturing of dies.

V. RESEARCH PROJECTS

- Grant
Theory of parts production.
Experimental CAD/CAM system at the Faculty of Materials Science and Technology.

- Faculty project
Machining of metal and ceramics depositions created by fire-splutter plasma and by other techniques.
- Copernicus Tash SP4
Analysis of vibration and internal sources of friction in grinding of internal front surfaces of tapered roller bearings.
- International USA - Slovak project
Research Programme of Development and Production of Platinum Resistance Thermometer by Directed Crystallisation. (93 016)

VI. COOPERATION

- Copernicus Tash SP4
Faculty of Mechanical Engineering, Slovak University of Technology, Bratislava, Slovakia
Analysis of vibration and internal sources of friction in grinding of internal front surfaces of tapered roller bearings.
- International USA - Slovak project
National Institute of Standard and Technology, Gaithersburg, USA
Research Programme of Development and Production of Platinum Resistance Thermometer by Directional Crystallisation. (93 016)
- International Austria - Slovak project
Faculty of Mechanical Engineering, Technical University of Vienna, Austria.
Problem of Uncertainty et High accuracy Measurement of Complex Part.

VII. THESES

VII. 1 Graduate Theses

- Proposal of universally compounded angular-contact bearing production technology.
- Production for container glass in glass moulds.
- Proposal of a tensiometer force sensing element production technology.
- Analysis of CNC machine programming possibilities.
- Simulation of cutting tools wearing.
- Design of semi-products of manufacturing (forgings, castings, weldments, rolled products, pressed pieces).
- Construction and technological limiting states of sintered carbide, high-speed steel and ceramic cutting tools.
- Using the ArtCAM software in cutlery decoration.
- Application of a "DUCT" CAD/CAM system in cutlery production
- Bank of technological data for cutting tools.
- Quality of superfinished surface.
- Fixturing conception, location and clamping.
- Machining a set of surfaces.
- High-speed reaming of holes.
- Design of a school robotized workplace.
- Design of 084-45-008 airscrew shaft manufacturing.

- Making a mould cavity for soap.
- Using the coated tools in turning 14109 and 14209 bearing steel on hexaspindle automatic machines.

VIII. OTHER ACTIVITIES

- Course of NC machine programmig.
- PRAMET '96 Conference - tool materials and tools.
- Conference: Systems agents of increasing the complete ability of engi-neering plants '96.

IX. PUBLICATIONS

- [1] BÉKÉS, J. - AHMAD, N.: How to position, clamp and grasp? In.: DAAAM International. Proc. 7th International DAAAM Symposium. Vienna, TU 1996, pp. 29 - 30.
- [2] BÉKÉS, J. - KICKO, J. - ŠUGÁR, P.: Simulation in machining as a tool of verification. In.: DAAAM International. Proc. 7th International DAAAM Symposium. Vienna, TU 1996, pp. 31 - 32.
- [3] JANÁČ, A. - BÉKÉS, J.: Theorie für die Planung der Werkstückherstellung (Theory of parts production planning). In.: DAAAM International. Proc. 7th International DAAAM Symposium. Vienna, TU 1996, pp. 179 - 180.
- [4] PETERKA, J. - JANÁČ, A. - ŠUGÁR, P.: The aspects of CAD/CAM system workplace at the Department of Machining and Assembly. In.: DAAAM International. Proc. 7th International DAAAM Symposium. Vienna, TU 1996, pp. 329 - 330.
- [5] VELÍŠEK, K. - KUCHARIKOVÁ, E.: Influence of technological parameters on workpiece fixturing. In.: DAAAM International. Proc. 7th International DAAAM Symposium. Vienna, TU 1996, pp. 457 - 458.
- [6] KURIC, I. - JANÁČ, A.: Intelligent Systems in CAPP. In.: Proc. International Conference on Computer Integrated Manufacturing. Volume 3. Zakopane, B.v.ú. 1996, pp. 247 - 252.
- [7] PETERKA, J. - JANÁČ, A.: The questions of CAD/CAM system usage for manufacturing of forming tools in cuttlery manufacturing. In.: Proc. International Conference on Computer Integrated Manufacturing. Volume 2. Zakopane, B.v.ú. 1996, pp. 287 - 292.
- [8] ŠUGÁR, P. - JANÁČ, A.: A training laboratory for programming of CNC machine tools. In.: Proc. International Conference on Computer Integrated Manufacturing. Volume 2. Zakopane, B.v.ú. 1996, pp. 375 - 378.
- [9] VELÍŠEK, K. - BARÁNEK, I.: Bau und Einsatz der Vorrichtungen in Hinsicht auf CIM (Using fixture constructions from the CIM point of view). In.: Proc. International Conference on Computer Integrated Manufacturing. Volume 2. Zakopane, B.v.ú. 1996, pp. 385 - 389.
- [10] AHMAD, N.: Processing of Titanium/Nickel Based Alloys. In.: Junior Euromat '96. European Conference. Switzerland, Lausanne B.v.ú., 1996 p. 177.

DEPARTMENT OF LANGUAGES

Head of the Department:
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I. STAFF

Professors - 0
Assoc. Professors - 0
Senior Lecturers - 7

Research Officers - 0
PhD Students - 0
Technical Officers - 1

II. EQUIPMENT

II. 1 Teaching Language Laboratory
- Audio/Video Workshop

II. 2 Special Measuring Instruments and Systems
-

III. TEACHING

III. 1 Bachelor Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week lectures- seminars</i>	<i>reader's name</i>
English	1 - 4	0 - 2	Cagaňová Mironovová Miština Rusková
German	1 - 4	0 - 2	Reháková Tandlmajerová
Russian	1 - 4	0 - 2	Bujnová
French	1 - 4	0 - 2	Matúš Bubáková

III. 2 Graduate Study

English	1 - 4	0 - 2	Cagaňová Mironovová Miština Rusková
German	1 - 4	0 - 2	Reháková Tandlmajerová
Russian	1 - 4	0 - 2	Bujnová
French	1 - 4	0 - 2	Matúš Bubáková

III. 3 Postgraduate study

English	0 - 2	Mironovová
German	0 - 2	Reháková
Russian	0 - 2	Bujnová

IV. RESEARCH TARGETS

- Analysis of the current state of teaching ESP at FMST
- ESP syllabus design and course design
- New phenomena in Russian vocabulary implemented in teaching

V. RESEARCH PROJECTS

- Theoretical, Methodological and Practical Tasks in teaching LSP (Languages for Specific Purposes) at FMST

VI. COOPERATION

- The British Council Bratislava
- The Pushkin Institute in Moscow
- The Goethe Institute in Bratislava

VII. THESES**VII. Graduate Theses**

-

VII. 2 PhD Theses

-

VIII. OTHER ACTIVITIES**A. Seminars and workshops organized by the department**

- Workshop on ESP in cooperation with Language Department of FEEIT SUT (January 1996, L. Rovanova, Z. Robinson)
- Workshop on Business writing in cooperation with the British Council (March 1996, S. Yeo)
- Seminar New Trends in Teaching Foreign Languages (June 1996, E. Bujnová, D. Cagaňová, E. Mironovová, A. Reháková, D. Rusková, A. Tandlmajerová)
- Workshop on ESP in cooperation with the British Council (December 1996, S. Yeo, B. Robinson)
- Big Ben Book Display (December 1996)
- Workshop for teachers of German at SUT (April 1996, A. Reháková, A. Tandlmajerová)

B. Other Conferences and Seminars

- Teacher Training
 - E. Bujnová, September 1996 for Methodology Centers in Trnava and Turčianske Teplice, November 1996 in Prešov
 - E. Mironovová, March 1996, The British Council in Bratislava, June 1996, Faculty of Natural Science in Bratislava and Budmerice
 - D. Cagaňová, D. Rusková, September 1996, FEEIT SUT Bratislava
 - J. Miština, May 1996, the British Council in Bratislava
- 2nd International ESP Conference in Košice (May 1996, D. Cagaňová, E. Mironovová, D. Rusková)
- International Conference LATEFL (May 1996, J. Miština)
- SAUA/SATE Conference (October 1996, J. Miština)
- Seminar at LD FEEIT SUT (June 1996, E. Mironovová, A. Reháková)
- International workshop on presentations in Romania (March 1996, E. Mironovová)
- Workshop for teachers of German within Tempus Project (October 1996, Trnava University, A. Reháková, A. Tandlmajerová)

IX. PUBLICATIONS

- [1] BUJNOVÁ, E.: The changes in contemporary Russian vocabulary. In Proc. of CO-MAT-TECH Conference, FMST SUT, volume 4, 1996, pp. 331-335.
- [2] MIŠTINA, J.: The Saltcity reminiscence, SAUA/SATE Newsletter N 1-2, 1996, pp. 34-35.
- [3] RUSKOVÁ, D., et al.: Plymouth, ESP Spectrum, N 12, 1996, p. 26.

DEPARTMENT OF INDUSTRIAL ECOLOGY

Head of the Department:
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Fax:
E-mail:

I. STAFF

Professors - 1
Assoc.Professors - 2
Senior Lecturers - 0

Research Officers - 1
PhD Students - 0
Technical Officers - 2

II. EQUIPMENT

II. 1 Teaching and Research Laboratories

- teaching laboratory for chemistry, basic equipment
- for metal analysis , BOD, COD, equipment for N
- analysis, organic compounds, water analysis
- (ph-meter, termostat, kieldhal, conductometer, spectrophotometer)

II. 2 Special Measuring Instruments and Systems

- Polaro ECOR 626 Metrohm Ltd Swiss
DC polarography /voltammetry
DP polarography (voltammetry)
- PHOTOMETER SQ 118 Merck Germany
- HPLC Hitachi system Hitachi Belgium

III. TEACHING

III.1 Bachelor Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week</i> <i>lectures- seminars</i>	<i>reader's</i> <i>name</i>
Introduction into Environmental Studies	1	3	Wittlinger
Chemistry I.	3	5	Baran
Ecology of Working Environment	3	4	Žiaran
Physics of Nuclear Reactors	3	4	Kováč
Sanitation Technology and Equipment	3	4	Polívka
Basis of Biological Systems	3	4	Eliáš
Regional Geology and Geography	3	3	Seko
Pedology	3	2	Vidovič
Chemistry II	4	3	Baran

Industrial Technologies and Environment	4	8	Polívka, Murgaš, Šilhár
Dosimetry and Protection of Radiation	4	4	Morávek
Quality Control	4	3	Polívka
Monitoring of Emissions	4	4	Đúran

III. 2 Graduate Study

General Ecology	6	4	Eliáš
Dosimetry and Radiation Protection	6	4	Morávek
Technology and Environment	5	2	Križan
Basis of Biological Systems	5	4	Eliáš
Ecology	7	2	Baran
Chemical Technologies and Environment	7	6	Šilhár
Engineering and Environment	7	6	Murgaš
Environmental Aspects of Quality Management	7	3	Polívka
Regional Geography and Geology	7	3	Seko
Industrial Toxicology	7	4	Miadoková
Ecology of Working Environment	7, 8	3	Ferstl
Power Engineering and Environment	6	3	Wittlinger
Food Technology, Biotechnology and Environment	8	5	Polívka
Structure of Data and Databasic Systems	8	6	Moravčík
Hazard Minimisation in Environment	8	6	Hutta
Monitoring of Emissions	8	4	Đúran
PC Software for Ecology	7	4	Moravčík
Physics of Nuclear Reactors	8	3	Kováč

IV. RESEARCH TARGETS

- problem of wastes of cutting fluids, cooling emulsion their life cycle prolongation, changes of composition during microbial contamination
- potential decomposition of grinding, brushing sludges and utilisation of me-tal parts.

V. RESEARCH PROJECTS

- present situation in manipulation of wastes from special engineering technologies and alternative methods for their liquidation

- Influence of design and material of recuperator heat exchanger on intensity of heat transmission.

VI. COOPERATION

- VUJE (Nuclear power station research institute) Trnava: training the experts in industrial ecology, research development, development of information system

VII. THESES

VII. 1 Graduate Theses

-

VIII. OTHER ACTIVITIES

- Environmental management in food industry in connection with HACCP application (Žilina 1996 - Polívka)
- Concept of manipulation nuclear wastes management in Middle and East European Countries (Trnava - Húščava)
- Energy and sustainable development (Trnava - Wittlinger)
- Association of Industrial Ecology in Slovakia Bratislava - education and projects
- Food Research Institute Modra; cooperation in the field of microbial analysis of cooling fluids
- VW Bratislava; in the field of organisation of environmental training of employees and managerial staff.

IX. PUBLICATIONS

- [1] POLÍVKA, E. - ŠILHÁR, S. - KINTLEROVÁ, A.: Aronia concentrate: application in industry and probiotic properties. In: Symposium on Polyphenols and Anthocyanins as Food Colourants and Antioxidants. Vienna, FF Europe 1996.
- [2] POLÍVKA, E. - RUŽIČKOVÁ, A.: Influence of organic spoilage on disinfection of stainless steel materials. In: Trends in Food Industry, 3, 1996, N.3, pp. 3-4.
- [3] BARAN, P. - SABOVÁ, M.: Possibilities of utilisation of coordinated compounds for solving the environmental problems. In: Scientific Works of the Faculty of Materials Science and Technology, Vol. 4, 1996, pp. 315 - 319.

DEPARTMENT OF PHYSICAL EDUCATION AND SPORT

Head of the Department:
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I. STAFF

Professors - 1
Assoc. Professors - 0
PhD Students - 0

Research Officers - 0
Senior Lecturers - 12
Technical Officers - 6

II. EQUIPMENT

II. 1 Teaching and Research Laboratories

- Gymnasium
- Fitness Centre
- Swimming Pool
- Tracks and Fields
- Tennis Courts

II. 2 Special Measuring Instruments and Systems

- Dynamometers
- Bicycle-ergometer

III. TEACHING

III.1 Bachelor Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week lectures- seminars</i>	<i>reader's name</i>
Physical Education and Sports	1 - 6	2 - 1	Adamec

III. 2 Graduate Study

Physical Education and Sports	1 - 8	2 - 1	Adamcová
Olympism	1	2 - 1	Glesk, Merica

IV. RESEARCH TARGETS

- Physical Culture and Fitness of People

V. RESEARCH PROJECTS

- Physical fitness and performance of students
- The optimizing of exercise habits and the development of physical fitness as the condition of the health improvement of citizens of the Slovak Republic
- The meaning of Proprioception in specific swimming performance

VI. COOPERATION

VII. THESES

VII. 1 Graduate Theses

- The Olympic Education

VIII. OTHER ACTIVITIES

- Winter training camp for students
- Summer training camp for students

IX. PUBLICATIONS

- [1] MACEJKOVÁ, Y. - HLAVATÝ, R.: Biomechanics and technique of the swimming strokes. Bratislava, Comenius University and Slovak Swimming Federation 1996, pp. 55.
- [3] GLESK, P. - MERICA, M.: The efficiency of children's swimming training. Physical education and sport of the youth. PRAGUE, 1996, No 8, pp 43-44.
- [4] GLESK, P.: Power-walking as a basic human locomotion. In: Scientific theses of Slovak University of Technology (SUT) in Trnava. Bratislava, SUT 1996, pp. 321-326.
- [5] GLESK, P. - ČERCHLANOVÁ, J.: A model of the specific endurance development in women's 800-meter-run. In: Theoretical and methodological problems of the up-to-date athletics. Bratislava, Slovak Athletic Union 1996, pp. 29-40.
- [6] MERICA, M.: The effect of a semester swimming training on the swimming performance of the university students. In: Scientific theses of Slovak University of Technology in Trnava. Bratislava, SUT 1996, pp. 327-330.
- [7] ČERCHLANOVÁ, J.: Swimming-the most successful Slovak sport in the paralympic games in Atlanta, In: Swimming at the Slovak universities after the Olympic Games in Atlanta. Trnava, FMST 1996, pp. 21-29.
- [8] GÁLIK, K.: Physical activities of students at FMST challenged by tennis. In: Problems of competitive games in the Slovak Republic. Trnava, FMST 1996, pp. 38-40.
- [9] GLESK, P.: A contribution to the development of the educational programmes in swimming. In: Swimming at the Slovak universities after the Olympic games in Atlanta. Trnava, FMST 1996, pp. 3-4.

- [10] GLESK, P.: A profile of competitive games. In.: The problems of the competitive games in the Slovak Republic. Trnava, FMST 1996, pp. 9-19.
- [11] GLESK, P.: Low-impact exercises and their effect on metabolic handicaps due to obesity and diabetes. In.: Low-impact exercises at the Slovak universities. Trnava, FMST 1996, pp. 10-16.
- [12] HLAVATÝ, L.: The evaluation of the sports preparation of the Slovak Olympic swimming team members - M. Moravcova and M. Machovic in the training period 1995-96. In.: Swimming at the Slovak universities after the Olympic Games in Atlanta. Trnava, FMST 1996.
- [13] HLAVATÝ, R.: The arm-stroke cycle of the elite swimmers in particular swimming strokes in the Olympic Games in Atlanta. In.: Swimming at the Slovak universities after the Olympic Games in Atlanta. Trnava, FMST 1996, pp. 14-18.
- [14] MERICA, M.: A basic swimming course and the attitude of the children and their parents towards swimming. In.: Swimming at the Slovak universities after the Olympic Games in Atlanta. Trnava FMST 1996, pp. 45-48.
- [15] MERICA, M.: The effect of smoking on the university students performance in underwater swimming. In.: Low-impact exercises at the Slovak universities. Trnava, FMST 1996, pp. 22-27.
- [16] MERICA, M.: The attitude of the university students towards competitive games in the Slovak Republic. In.: The problems of the competitive games in the Slovak Republic. Trnava, AMST 1996, pp. 27-30.
- [17] RAFAJ, D.: The health of students-first priority. In.: The health physical education at the universities in SR. Trnava, SUT 1996, pp. 28-30.
- [18] BLAŠKOVIČ, J. - MORVAY, A.: Testing the fitness of university students by a "2 km walking" test. In.: "CO-MAT-TECH '96. Proceedings. Vol. 3. Bratislava, SUT 1996, pp. 217-221.
- [19] GÁLIK, K. - MIKULÁŠ, S. - RAFAJ, D.: Investigation of body mass influence on the functioning of heart-arterial system of the third and fourth-year SUT students. In.: CO-MAT-TECH '96. Proceedings. Vol. 3. Bratislava SUT 1996, pp. 243-248.
- [20] GLESK, P.: 12 minute swimming test of university students. In.: International scientific conference. Nitra. Scientific Society of Physical Education and Sport 1986, pp. 284-288.
- [21] GLESK, P.: Olympism - the educational subject at the University, its forms content and direction. In.: CO-MAT-TECH '96. Proceedings. Vol. 3. Bratislava, SUT 1996, pp. 249-252.
- [22] GLESK, P.: Two km walking test of primary school pupils, aged 9-10. In: The physical education and health. Ceske Budejovice, PF JU 1996, pp. 49-53.
- [23] MERICA, M.: The attitude of the university students towards competitive games in the Slovak Republic. In.: The problems of the competitive games in the Slovak Republic. Trnava, FMST 1996, pp. 27-30.
- [24] KOUDELKA, M. - GLESK, P. - ŽÁK, R.: The possibilities and the application of biomechanical knowledge in chosen sports. In.: Proceedings from CO-MAT-TECH '96. Vol. 3. Bratislava, SUT 1996, pp. 263-266.

- [25] MERICA, M.: Physical performance and sports activities of the children and the attitude of their parents towards physical activities. In.: New ways of physical and sports activities of children and the youth. Proceedings from the second international conference. Nitra 1996, pp. 207-209.
- [26] MERICA, M.: Changes in the sports performance of the university basketball players. In.: Proceedings from CO-MAT-TECH '96. Vol. 3. Bratislava, SUT 1996, pp. 285-291.
- [27] MERICA, M.: Increasing the efficiency of the swimming training of the primary school pupils. In.: Physical education and health. Ceske Budejovice 1996, pp. 121-123.

DEPARTMENT OF FORMING

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I. STAFF

Professors - 1
Assoc.Professors - 2
Senior Lecturers - 5

Research Officers - 0
PhD Students - 4
Technical Officers - 3

II. EQUIPMENT

II. 1 Teaching and Research Laboratories

- eccentric presses, hydraulic presses, spindle press
- squaring shear
- pneumat - hydraulic hammer
- lathe, milling machine, grinding machine
- high-speed instrument for shooting

II. 2 Special Measuring Instruments and Systems

- acoustical emission
- EU40 and TIRATEST tearing machine
- hardness tester
- pendulum impact
- tool - makers microscope
- profile projector

III. TEACHING

III. 1. Bachelor Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week lectures- seminars</i>	<i>reader's name</i>
Regulating and Automating Technology	6	2 - 2	Zachar
Exercises in Machine Technology	6	0 - 2	Selčan
Final Project	6	0 - 4	Bilik
Technology of Forming	3	3 - 3	Kotras

III. 2. Graduate Study

Technology of Forming	6	2 - 1	Bača, Kotras, Ulík
Theory of Forming	7	3 - 2	Polák
Volum Forming	9	2 - 2	Bača
Flat Forming	9	2 - 2	Kotras
Projection of Manufacturing Processes and Systems in Forming Machines and Equipment for Forming	9	2 - 1	Polák
Final Project	10	2 - 2	Ulík
Experimental Methods for Forming	9	0 - 4	Selčan
Automation of Forming	8	2 - 1	Žatkovič
Automation of Forming	8	2 - 1	Bača
Automation of Forming	9	3 - 2	Ulík

IV. RESEARCH TARGETS

- Research of new materials forming
- Formability of new materials
- High parametrical forming
- Hardening of surface layer
- Experimental methods for forming
- Computer Simulation

V. RESEARCH PROJECTS

- Research of new materials forming
- Optimisation of technologic parameters for forming
- Shaping by explosion application

VI. COOPERATION

- Bendis and Kierulf v.o.s.

VII. THESES**VII. 1 Graduate Theses**

-

VII. 2 PhD Theses

- Increasing the die life by mechanical hardening of surface layer - Bača
- Fabrication of cavity bimetallic instruments by high parametric shaping - Bača
- Forming possibility by use of infirm surroundings - Bača

VIII. OTHER ACTIVITIES

- seminar - Technological Engineering, Trnava 1996
- seminar - Rotation Forming, Žiar nad Hronom 1996
- seminar - Accurate cutting

IX. PUBLICATIONS

- [1] POLÁK,K.: Interantikor '96. Košice, 1996.
- [2] POLÁK,K.: Aviation of the Future. Košice, 1996.
- [3] POLÁK,K.: Rotation Forming. Žiar nad Hronom, 1996.
- [4] BÍLIK,J.: Acta Metallurgica Slovaca. Košice, 1996.
- [5] ŽATKOVIČ,J. - MARIASSY,M. - ALBRECHTOVA,I. - DUBNIČKA,S.: Contribution to Solution of Metrological Security of Narkotic Dosing for Anaesthesiological Practice. In: Proceedings. CERM '96. Liptovský Ján, 1996.
- [6] BAČA,J.: THER-TECH-FORM, Acta Metallurgica Slovaca. Košice, 1996.
- [7] POLÁK,K.-TURŇA,M.: Cumulative plastic strains. In.Proceedings of the Hanoi University of Technology. Hanoi, 1996.
- [8] BAČA,J.: Possibility of cavity instruments regeneration by use of nontra-ditional shaping methods. In: TECHRENO '96. Žilina, DT ZSVTS 1996.
- [9] POLÁK,K.: Teoretical and Technological Aspects of Forming. In: EURO-METALWORKING '96. Bratislava, DT ZSVTS 1996.
- [10] ULÍK,A.: Fabrication of bearing shaft by transversal rolling. In: CO-MAT-TECH '96. Trnava, 1996.

DEPARTMENT OF FOUNDRY

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Senior Lecturers - 3

Research Officers - 2
PhD Students - 0
Technical Officers - 5

II. EQUIPMENT

II. 1 Teaching and Research Laboratories

- Laboratory of foundry theory
- Laboratory of powder metallurgy
- Laboratory of plasma-electrolytic technology
- Laboratory of molten metal
- Laboratory of electromagnetic method and magnetohydrodynamics

II. 2 Special Measuring Instruments and Systems

- The vertical electromagnetic caster for the small profiles
- The high-frequency generator - 400 MHz for the levitation melting
- The medium-frequency induction furnaces 40/100 kg
- The vacuum induction furnace 50 l

III. TEACHING

III.1 Bachelor Study

-

III. 1 Graduate Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week lectures- seminars</i>	<i>reader's name</i>
Technology of Casting and Powder Metallurgy	8	2 - 2	Pokusa
Materials and Technologies	2	2 - 3	Makovník
Processes of Heat-Treatment and Sintering	7	2 - 2	Pokusa
Foundry Technology	5	2 - 1	Makovník
Tools and Jigs	7	2 - 2	Makovník
Selected Technologies of Mechanical Engineering	7	3 - 2	Podhorský

Equipment and Tools in Casting and Heat-Treatment	7	2 - 2	Murgaš
Technology of Casting and Welding	7	4 - 2	Pokusa
Engineering Technologies and Ecology	7	4 - 2	Murgaš
Technology of Metallic Powder Material Processing	9	3 - 2	Pokusa
Theory of Metallic Powder Material Preparation	9	2 - 2	Pokusa
Preparation and Processing of Ceramic and Friction Materials	9	2 - 1	Makovník
Foundry Metals and Alloy and their Preparation	9	2 - 2	Murgaš
Special Production Method in Foundry	9	2 - 2	Makovník
Projecting of Manufacturing Processes and Systems in Foundry	9	2 - 2	Makovník
Automation of Casting Processes	9	2 - 2	Mäsiar
Theory of Foundry	7,8	2 - 2	Mäsiar
Final Project	9	0 - 4	Mäsiar

IV. RESEARCH TARGETS

- Foundry - preparation of the molten metal
- Preparation of moulding materials
- Powder metallurgy - technology of the powder processing
- Plasma-electrolytic technology-surface treatment of the metals
- Magnetohydrodynamics
- Continuous casting

V. RESEARCH PROJECTS

- Grant Vega - Electromagnetic methods for effecting on the solidification of the molten metal materials
- Grant Vega - Plasma-electrolytic treatment of the metal surfaces
- Application of polyethylenoxide and some other polymers in foundry
- Investigation of creative methods of management in the field of foundry practice using of computers
- Special sintering methods for the metal powder materials
- Magnetohydrodynamics and electromagnetic methods for effecting the solidification of the molten metal materials

VI. COOPERATION

VII. THESES

VII. 1 Graduate Theses

- Technology of plasma-electrolytic treatment of metallic surfaces

VII. 2 PhD Theses

- Application of polyethylenoxide and some other polymers in foundry (Harold Mäsiar, PhD. Assoc. Professor)
- The electrolytic-plasma treatment of the metal surfaces (Marián Murgaš, PhD, Professor)
- The surface treatment of the press moulds for glass by electrolytic - plasma technology (Marián Murgaš, PhD. Professor)
- The method of effecting the solidification process for the continuous casting (Marián Murgaš, PhD. Professor)

VIII. OTHER ACTIVITIES

- New trends in foundry production, Dubnica 1996
- Partnership in the special teaching and research activities between foundries and schools in Slovakia, Levice 1996

IX. PUBLICATIONS

- [1] MURGAŠ, M.: Renovation technologies. Bratislava, STU 1996. p. 80.
- [2] MURGAŠ, M. - POKUSOVÁ, M - POKUSA, A. - VOZÁR, P.: The method for the improvement in continuous cast steel quality. In: Scientific works of the FMST. Vol. 4. Bratislava, SUT 1996, pp. 93 - 99.
- [3] MURGAŠ, M. - POKUSOVÁ, M.: The determination of the ductile iron chemical composition. In: Academic Dubnica. Proc. Trnava, FMST SUT 1996, pp. 21 - 24.
- [4] PODHORSKÝ, Š. - PÚČIK, V.: Stability of plasma-electrolytic process. In: Scientific works of the FMST. Vol. 4. Bratislava, SUT 1996, pp. 107 - 115.
- [5] POKUSA, A. - POLÁK, K.: The electrocontact sintering of metal powder. In: Scientific works of the FMST. Vol. 4. Bratislava, STU 1996, pp. 101 - 106.
- [6] MURGAŠ, M. - POKUSA, A. - POKUSOVÁ, M.: The production of the semiproducts for the forging tools and glass moulds by the electroslag casting. Proc. Trenčín, SOaPK 1996, pp. 52 - 59.
- [7] MURGAŠ, M. - PODHORSKÝ, Š. - POKUSA, A. - POKUSOVÁ, M.: The electrolytic-plasma treatment of the tools surface. Proc. Trenčín, SOaPK 1996, pp. 60 - 64.
- [8] POKUSA, A.: The audit and its place in the quality system. Proc. Žilina, DT ZSVTS 1996, pp. 13 - 18.
- [9] MURGAŠ, M. - BERTA, I.: The metal surface properties treated by the electrolytic-plasma technology. Proc. Žilina, DT ZSVTS 1996, pp. 100 - 105.
- [10] PODHORSKÝ, Š.: Know-how form the development and the construction of the technological equipment for the plasma - electrolytic surface treatment. Proc. Žilina, DT ZSVTS 1996, pp. 106 - 111.

- [11] MĀSIAR, H. - KASHIF, M.: The influence of polyethylenoxide additive on the binding properties of the bentonite molding mixtures. In: CO-MAT-TECH '96. Proc. Vol. 1. Bratislava, SUT 1996, pp. 255 - 258.
- [12] MURGAŠ, M. - POKUSA, A. - VOZÁR, P.: The conductive method of stirring for the continuous cast steel. In: Metal '96. Proc. Vol. 2. Ostrava, 1996, pp. 163 - 170.
- [13] MURGAŠ, M.: The properties of the cast iron with globular graphite produced by various methods. In: CO-MAT-TECH '96. Proc. Vol. 1. Bratislava, SUT 1996, pp. 265 - 269.
- [14] POKUSA, A.: New possibilities in the production of the sprayed reduced iron powders. In: CO-MAT-TECH '96 Proc. Vol. 1. Bratislava, SUT 1996, pp. 287 - 291.
- [15] POKUSOVÁ, M.: The analysis of the internal movements in the electromagnetic caster. In: CO-MAT-TECH '96. Proc. Vol. 1. Bratislava, SUT 1996, pp. 293 - 297.
- [16] ZÁTURA, M.: The production of castings from the ductile iron. In: CO-MAT-TECH '96. Proc. Vol. 1. Bratislava, SUT, 1996, pp. 341 - 344.
- [17] PODHORSKÝ, Š. - PÚČIK, V.: New technology of the surface treatment. In: Proc. Bratislava, DT ZSVTS 1996, pp. 124 - 129.
- [18] MURGAŠ, M. - BERTA, I.: The surface finishing using the plasma - electrolytic technology. Proc. Zlaté Moravce, CALEX 1996, pp. 49 - 50.
- [19] MĀSIAR, H.: Some questions of the ecology from the foundry productions point of view. Proc. Trnava/Košice, SZS 1996, pp. 87 - 94.
- [20] PÚČIK, V. - KOVAČÓCY, P. - ADAMKA, J. - PODHORSKÝ, Š.: The cutting of the CzNi steels used in the power industry by air and Ar/H₂plasma arc. Proc. Opole, Wydawnictwo Instytutu Slaski 1996, pp. 229 - 237.
- [21] PODHORSKÝ, Š. - PÚČIK, V.: The Cause of the Smoothing and Polishing Effect of the Plasma-Electrolytic Process. In: Junior Euromat '96. European Conference. Switzerland, 1996, p. 443.
- [22] MĀSIAR, H. - PODHORSKÝ, Š.: The cleaning of the steel castings and forgings using plasma - electrolytic technology. In: In: Metal '96. Vol. 1. Ostrava, 1996, p. 67.
- [23] POKUSA, A. - POKUSOVÁ, M.: The horisontal electromagnetic caster for the continuous casting of the AlSn₂₀ strip. In: In: Metal '96. Vol. 1. Ostrava, 1996, p. 200.
- [24] MURGAŠ, M. - PODHORSKÝ, Š. - POKUSOVÁ, M.: The technological utilization of the turbulent phenomena in steam-plasma envelope generated by high voltage in the electrolytic circuit. In: The Eight Beer-Sheva International Seminar on MHD Flows and Turbulence '96. Jerusalem, Center for MHD Studies Ben-Gurion University of Negev 1996, p. 109.
- [25] MURGAŠ, M. - POKUSOVÁ, M. - ŠUJANOVÁ, J.: The analysis of phenomena caused by the application of magnetic field for electroslag remelting process. In: The Eight Beer-Sheva International Seminar on MHD Flows and Turbulence '96. Jerusalem, Center for MHD Studies Ben-Gurion University of Negev 1996, p. 97.

- [26] POKUSOVÁ, M. - MURGAŠ, M.: Method of computation of horizontal electromagnetic caster. In: The Eight Beer-Sheva International Seminar on MHD Flows and Turbulence '96. Jerusalem, Center for MHD Studies Ben-Gurion University of Negev 1996, p. 98.

DEPARTMENT OF WELDING

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Professors - 3
Assoc.Professors - 3
Senior Lecturers - 6

Research Officers - 0
PhD Students - 5
Technical Officers - 5

II. EQUIPMENT

II.1 Teaching and Research Laboratories

- Welding school for gas welding, welding with covered electrode and GMAW
- Resistant welding laboratory
- Plasma welding laboratory

II.2 Special Measuring Instruments and Systems

- Krautkrämer USK 7D Ultrasonic testing equipment
- Welding current detector for resistant welding

III. TEACHING

III.1 Bachelor Study

-

III.2 Graduate Study

<i>Name of subject</i>	<i>semester</i>	<i>hours per week</i> <i>lectures- seminars</i>	<i>reader's</i> <i>name</i>
Welding Technology	5	2 - 2	Hudák, Benk
Theory of Welding	8	3 - 2	Adamka, Ryban
Special Welding Methods	10	2 - 2	Turňa
Weldment Design and Production	10	2 - 2	Jasenák
Projecting of Manufacturing Welding Processes and Systems	10	2 - 3	Monček
Control and Computer Technology in Welding	10	2 - 2	Marônek
Final Project	10	0 - 4	Jasenák, Marônek
Welding Machines and Fixtures	10	2 - 2	Jasenák

Technology Procedures and Production Preparation in Welding	6	2 - 2	Jasenák
Quality Control of Welding Joints	7	2 - 1	Hudák
Computer Technology in Welding	7	1 - 2	Hudák
Management in Welding	7	2 - 1	Marônek
Tribology, Surface Engineering	7	2 - 1	Blaškovič
Elasticity and Strength of Welded Constructions	8	2 - 1	Chladný
Quality Control of Welding Joints	8	1 - 2	Hudák
Metalography and Fractography of Welding Joints	8	2 - 3	Bernasovský, Bošanský
Technical English in Welding	9	0 - 2	Marônek
Technical Writing	9	2 - 0	Marônek
Weldability of Metals and Alloys	9	PTS	Ryban
Mechanization and Automation of Welding	9	PTS	Ondrejček
Algorithmization and Simulation of Technical Subjects	11	PTS	Jasenák
Welding Machines and Equipment	11	PTS	Jasenák
Industrial Robots and Manipulators for Welding	11	PTS	Jasenák

IV. RESEARCH TARGETS

- Explosive welding
- Ultrasonic testing
- Weldability of steels
- Welding of plastic materials

V. RESEARCH PROJECTS

- Software for design and control of explosion welding parameters
- Solid state welding
- Joining of dissimilar materials

VI. COOPERATION

- NOVOP Lučenec
- Design of bus chassis
- Bus chassis welding fixture design

VII. THESES

VII. 1 Graduate Theses

- Electroslug surfacing of worn machine parts
- Microplasma welding of Cr-Ni steels

- Renovation of shaft of chemical equipment by electroslug welding

VII. 2 PhD Theses

-

VIII. OTHER ACTIVITIES

- All forms of basic welding classes
- Postgraduate class for European welding engineers
- Member of Slovak Welding Society board
- Certification board directorship
- Welding Normalisation Committee member
- Member of IIW

IX. PUBLICATIONS

- [1] POLÁK, K. - TURŇA, M.: Cumulative plastic strains. In: Proceedings of the Hanoi University of Technology, Hanoi, TU 1996, pp. 26-31.
- [2] TURŇA, M. - MOLNÁR, J. - MARÔNEK, M.: Manufacturing and application of Hadfield steel-carbon steel bimetal. In: Symposium on Joining of materials, Tiruchirappali, India 1996.
- [3] HUDÁK, J. - MARÔNEK, M. - PŮČIK, V. - TURŇA, M.: Quality of welding joint fabricated by explosion, its life time at higher temperatures. In.: Proceedings. Opole, Wydawnictwo Institut Slasky 1996, pp. 223-229.
- [4] MARÔNEK, M.: Bimetallic instruments fabricated by explosion welding. In.: Eurometalworking '96. Bratislava, DT ZSVTS 1996, pp. 119-122.
- [5] NOVÁK, I. - JASENÁK, J.: Renovation adhesives based on epoxide resins. In.: Proceedings. Opole, Wydawnictwo Institut Slaski 1996, pp. 238.
- [6] PŮČIK, V. - KOVAČOČY, P. - ADAMKA, J. - PODHORSKÝ, Š.: Cutting of CrNi steels used in power industry by Ar/H₂ plasma arc. Proceedings. Opole, Wydawnictwo Institut Slaski 1996, pp. 229-237.
- [7] RYBAN, D.: Manufacturing of welded recuperator. Proceedings. Opole, Wydawnictwo Institut Slaski 1996, pp. 142 - 146.
- [8] VOTOUPAL, J. - JASENÁK, J.: Material and welding equipment choice by computer. Proceedings. Opole, Wydawnictwo Institut Slaski 1996, pp. 199 - 205.
- [9] RYBAN, D.: Weldability of Maraging Steels. In.: Welding Science and Technology. Japan-Slovak Welding Symposium. Košice, TU 1996, pp. 266 - 270.

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