

DEPARTMENT OF ANALYTICAL CHEMISTRY

Head of Department:

Prof. Jozef Lehotay, PhD, DSc

Telephone: ++421252926043

Fax: ++421252926043

E-mail:

jozef.lehotay@stuba.sk

Full Professors:

Dušan Bustín, PhD, DSc; Ján Krupčík, PhD, DSc; Ján Labuda, PhD, DSc; Jozef Lehotay, PhD, DSc; Eva Matisová, PhD, DSc; Ján Mocák, PhD, DSc;

Associate Professors:

Ernest Beinrohr, PhD; Eva Benická, PhD; Miroslav Čakrt, PhD; Drahomír Oktavec, PhD; Miroslav Rievaj, PhD; Jana Sádecká, PhD; Viktor Vrábek, PhD;

Assistant Professors :

Tatiana Buzinkaiová, PhD; Andrea Hercegová, PhD; Elena Korgová (till 31.5.2004), PhD; Pavol Májek, PhD; Alena Manová, PhD; Pavol Tarapčík, PhD; Mária Vaníčková, PhD;

Research Fellows:

Adriana Ferancová, PhD; Katarína Hroboňová, PhD; Svetlana Hrouzková, PhD; Tatiana Rojkovičová (since 1.12.2004 PhD); Ivan Skačáni, PhD; Ivan Špánik, PhD; Peter Tomčík, PhD;

PhD Students:

Eva Blahová (till 30.9.2004); Zuzana Dovalovská (since 1.10.2004); Milena Dömötörövá; Andrea Fedurcová; Pavlína Jenčušová (since 1.10.2004); Gabriela Karasová; Michal Kirchner; Damián Meričko (since 1.10.2004); Janka Mydlová; Renáta Ovádeková (since 1.10.2004); Milan Střepec;

Technical staff:

Marta Benešová; Anna Chalupková (since 15.9.2004); Ľubica Zajacová; Juraj Žemlička (till 31.7.2004)

II. TEACHING AND RESEARCH LABORATORIES

A. Teaching laboratories:

Laboratory of capillary gas chromatography

Laboratory of high performance liquid chromatography

Laboratory of capillary isotachopheresis

Laboratory of electroanalytical methods

Laboratory of molecular spectrometry

Clean laboratory for trace analysis with atomic spectrometry (AAS, OES-ICP)

Laboratory of electrochemical pre-concentration for atomic spectroscopy

Laboratory of organic elemental analysis

Laboratory of fluorescence analysis

Laboratory of chemometry

Laboratory of bioanalytical chemistry

B. Research laboratories:

Laboratory of organic synthesis

Laboratory of capillary gas chromatography

Laboratory of high performance liquid chromatography

Laboratory of capillary isotachopheresis

Laboratory of electroanalytical methods

Laboratory of molecular spectrometry

Laboratory of atomic spectroscopy

Laboratory of organic elemental analysis

Laboratory of fluorescence analysis

Laboratory of chemometry

Laboratory of bioanalytical chemistry

III. TEACHING

A. Undergraduate Study:

4. semester (Bc)	Analytical Chemistry I	2/2/0/0	Beinrohr, Vrábel
	Laboratory Practice AC I	0/0/0/4	Hercegová
5. semester (Bc)	Analytical Chemistry II	2/2/0/0	Bustin, Čakrt
	Laboratory Practice AC II	0/0/0/4	Manová
	Testing and Quality Control	1/1/0/0	Čakrt
6. semester (Bc)	Semester Project	0/0/0/4	Rojkovičová
1. semester (MSc)	Analytical Chemistry of Complex Inorganic Mixtures	2/0/0/0	Oktavec
	Anal. Chemistry of Complex Organic and Biol. Mixtures	2/0/0/0	Sádecká
	Analytical Spectrometry	2/0/0/0	Beinrohr
	Laboratory Practice I	0/0/0/10	Sádecká
1. semester (MSc)	Computer Evaluation of Analytical Measurement	2/0/0/0	Májek, Mocák
	Biosensors	2/0/1/0	Labuda
2. semester (MSc)	Techniques of Mixtures Separation	2/0/2/0	Matisová, Valigura
	Laboratory Practice II	0/0/0/6	Sádecká
	Electrochemistry and Electroanalytical Chemistry	2/0/1/0	Bustin
	Analytical Separation of Compounds	2/0/1/0	Krupčík
2. semester (MSc)	Trace Analysis and Microanalysis	2/0/0/0	Beinrohr, Čakrt
3. semester (MSc)	Bioanalytical Chemistry	2/0/1/0	Labuda, Mocák
	Identification of Chemical Substances	2/0/1/0	Lehotay, Liptaj
	Laboratory Practice of Specialisation	0/0/0/10	Sádecká
	Automatisation of Analytical Chemistry	2/0/0/0	Rievaj
3. semester (MSc)	Analytical Chemistry of Environment	2/0/0/0	Benická
4. semester (MSc)	Laboratory of Diploma Work	0/0/0/27	Rojkovičová

IV. CURRENT RESEARCH PROJECTS

A. VEGA Project No 1/9128/02 Development and Application of Direct Injection Assays for HPLC Analysis of Some Drugs and Toxic Compounds in Biological Samples (Jozef Lehotay).

The aim of the project was the development and the application of new assays with the possibility of direct injection of biological samples into the HPLC system. SPE (Solid Phase Extraction) precolumn was integrated directly into the HPLC system what improves validation parameter values and minimizes the personal contact with biofluids. Automated HPLC procedures for the analysis of chosen drugs, natural and toxic compounds were compared with applied electromigration methods.

Project duration: from 01.01.2002 to 31.12.2004

B. VEGA Project No 1/9129/02 Elektroanalysis by means of in-electrode coulometric titration and interdigitated array of microelectrodes. Optimization of stages of trace analysis (Dušan Bustin).

The project is oriented to the investigation of in-electrode coulometric titration in porous electrodes for calibrationless determination of trace concentrations of metals and some non-metals and to the application of elaborated procedures for automated process analysis. It also intends to contribute to employment of chronoamperometry with the segments of inter-digitated microelectrode arrays for the calibrationless analysis of electroactive species. Chronoamperograms are to be obtained under redox-cycling or isolated segment conditions. The multivariate statistical data analysis are to be used for authentication and classification of food products, environmental samples as well as for the software aided clinical diagnosis.

Project duration: from 01.01.2002 to 31.12.2004

C. VEGA Project No 1/9127/02 Development of optimum methods for analyses of enantiomers of biologically active chiral substances by high performance liquid, supercritical fluid and gas chromatography (Ján Krupčík).

This project intends to contribute to development of methods for the direct analysis of enantiomers of selected biologically active chiral compounds by high performance liquid (HPLC), supercritical fluid (SFC) and gas (HRGC) chromatography. Following subparts shall be studied in this project: (i) Computer assisted optimum methods shall be developed for direct separations of enantiomers of selected biologically active chiral compounds by HPLC, SFC and GC methods using commercially available modified cyclodextrins (GC) and macrocyclic antibiotics (SFC and HPLC). (ii) Two columns in series and two dimensional HRGC and or HPLC shall be applied for the separation of enantiomers in complex mixtures. (iii) Computer assisted deconvolution of the peak clusters obtained separating the racemic mixtures shall be applied to determine the enantiomerization barrier of the thermally labile enantiomers by dynamic HPLC, SFC and GC. (iv) Principal component analysis and cluster analysis shall be used to classify the enantioselectivity of modified α -, β - and γ -cyclodextrin used in HRGC.

Project duration: from 01.01.2002 to 31.12.2004

D. VEGA Project No 1/9126/02 Large Volume Injection in Conventional and Fast Capillary Gas Chromatography (Eva Matisová).

The aim of the project is the development of the large volume sample injection methods in combination with conventional, fast capillary gas chromatography and GC-MS for trace analysis of volatile and semi-volatile organic compounds in multicomponent model and real environmental samples. A part of the project is connected with the development of comprehensive gas chromatography (GCxGC) and its combination with the large volume sample injection for the analysis of multicomponent samples of trace analytes. A part of the project is devoted to the application of the gained knowledge to the trace and ultra-trace analysis of multicomponent mixtures of organic compounds in environmental matrices including the sample pre-treatment for the large volume sample injection.

Project duration: from 01.01.2002 to 31.12.2004

E. NATO Project No SFP 977983 Minimisation of Pesticide Residues in Processed Products and the Environment (Eva Matisová).

The project refers to pesticide science and more specifically to pesticide chemistry, and analytical methodology of residues. Pesticide residues undergo significant changes in chemical structure and concentration during food processing. The research work in the project is planned to contribute to better understanding of the effects of food processing on pesticide residues. Perfection of the analytical methodologies for detection and determination of pesticide residues at extremely low concentrations allowed in baby foods will be one of the scientific contributions of the project. Existing methods will be modified or new methods will be developed, distinguished by sufficient precision and reliability of determination of residues at or below the concentration level of 0.01 mg/kg, required by the EU directives on baby food. The identification and assessment of the critical points in the food technology processes will be a contribution to food technology.

Project duration: from 01.02.2003 to 31.06.2006

F. Aktion Oesterreich-Slowakei. Project No 45s13: "Chemometrical Classification of Food and Biologically Important Samples" (national coordinator: Ján Mocák).

Bilateral scientific project between (a) Technische Universitaet Graz, Austria, and (b) Slovak University of Technology, Bratislava, Slovakia.

Project duration: from 01.02.2004 to 4.12.2004

G. VEGA Project 1/9253/02: Electrochemical DNA biosensors for the characterization of interactions of the bound DNA, the determination of traces of compounds binding to DNA as well as activators and inhibitors of damage to DNA (Ján Labuda)

New biosensors with a DNA layer of controlled properties attached to screen-printed carbon electrodes have been prepared. Host-guest interactions for dsDNA and small molecules of selected chiral drugs and risk chemicals have been characterized using several voltammetric techniques. DNA structural changes and deep degradation as a consequence of chemical reactions of reactive oxygen radical species as well as DNA protection by selected antioxidants such as flavonoids were investigated. New analytical procedures for the simple and fast determination of trace amounts of chiral drugs were developed. The DNA biosensors were tested as simple and

single-use sensors for the determination of DNA damage as well as the evaluation of antioxidative capacity of plant extracts of food industry interest.

Project duration: from 01.01.2002 to 31.12.2004

H. Project 035/2001 (USA – SK) The HPLC Study of Enantioselective Separations Using Molecular Modelling and Artificial Neural Networks on Macrocyclic Antibiotic Chiral Selectors (Jozef Lehotay).

The objective of this research project is to create a comprehensive method capable of the prediction and optimization of enantioselective separations achieved by the vancomycin chiral selector, VM-CS, in HPLC, CEC and CE. This will be accomplished by: 1) development of QSERRs to describe the retention and enantioselective separations achieved in each chromatographic mode; 2) training ANN to select optimum format and conditions, i.e. to minimize k_1' and k_2' while optimizing k_2'/k_1' , using the independent variables identified by the QSERR studies. A key element in the optimal use of CSs is an understanding of the chiral recognition mechanisms responsible for the observed enantioselective separations. Thus, a second objective is the use of the QSERRs and stopped-flow kinetic studies to construct descriptions of the chiral recognition mechanisms operating in each mode and to correlate these results with molecular modelling studies. The aim of these studies is a better understanding of the fundamental processes involved in chiral recognition.

Project duration: from 01.07.2002 to 01.07.2005

CH. EUREKA Project E!3109: Advanced Portable System for Explosive Agents Sampling, Detection and Analysis (Eva Matisová).

Project relates to the science and technology. The contribution to the science and technology should be the miniaturisation of analytical instrumentation – the development of the portable analyser of the low mass for the detection of explosives in the air and other sources based on the modern technologies in sampling, separation and detection.

Project duration: from 01.04.2004 to 31.03.2007

V. CURRENT EDUCATION PROJECTS

A. CEEPUS Project No PL-0110 04/05: “Development and improvement of modern analytical methods for monitoring the environmental pollution and introduction of the quality systems and accreditation to routine analytical laboratories” (Ján Mocák).

Educational project enables exchange of students and teachers among the following partner universities: (a) The University of Mining and Metallurgy, Cracow, Poland, (b) Karl-Frenzens-University, Graz, Austria, (c) The University of Maribor, Maribor, Slovenia, (d) The University of Pardubice, Pardubice, Czech Republic, (e) Slovak University of Technology, Bratislava, Slovakia.

Project duration: from 01.10.2004 to 30.09.2005

B. CEEPUS Project No PL-0110 03/04: “Development and improvement of modern analytical methods for monitoring the environmental pollution and introduction of the quality systems and accreditation to routine analytical laboratories” (Ján Mocák).

Educational project enables exchange of students and teachers among the following partner universities: (a) The University of Mining and Metallurgy, Cracow, Poland, (b) Karl-Frenzens-University, Graz, Austria, (c) The University of Maribor, Maribor, Slovenia, (d) The University of Pardubice, Pardubice, Czech Republic, (e) Slovak University of Technology, Bratislava, Slovakia.

Project duration: from 01.10.2003 to 30.09.2004

C. CEEPUS Project No PL-0130-03/04: Education in Separation Methods for Organic Environmental Analysis in XXI. Century (Ján Krupčík).

The main objective of this project is to improve the quality of MSc and PhD education in Analytical Chemistry at the cooperating universities, with the emphasis on modern analytical separation methods. This will be accomplished by exchange both of graduated and PhD students as well as teachers between the University of Technology Graz, University of Pardubice, Nicolaus Copernicus University in Toruń, University of Łódź, University of Veszprém, Medical Academy in Gdańsk and the Slovak University of Technology in Bratislava. Special

attention will be paid on the application of hyphenated techniques and on the fitting of the educational process to the needs and settings of the European Community.

Project duration: from 01.01.2003 to 31.12.2004

D. Bilateral project MŠ SR/DAAD No 5/2002, SRN: Investigation/detection of environmental risk species by DNA-based biosensors (Ján Labuda).

The topic of the project is an investigation of interactions of species of environmental interest with deoxyribonucleic acid (DNA). Toxic chemical species interact with living organism by various ways including association and follow-up structural and chemical changes of biological material. Toxic species can be accumulated by DNA and initiate subtle or deep damage to DNA. With respect to body aging and cancer processes, the changes of DNA due to its chemical interactions are of great interest. We aspect to investigate metalorganic and metalloid species as well as metal complexes with organic ligands which are able to intercalate into cavities between DNA bases pairs.

Project duration: from 01.01.2003 to 31.12.2004

E. Grant KEGA No 3/2238/04: The preparation of modern book on analytical separation methods (Jozef Lehotay).

The aim of project is the preparation a new book "Encyclopedia of separation methods for students. The book involved new separation techniques specially in liquid and gas chromatography and electrophoreses.

Project duration: from 01.10.2004 to 30.09.2007

VI. COOPERATION

A. Cooperation in Slovakia

Institution	Type of cooperation	Responsible person	Duration
Faculty of Electrical Engineering and Information Technology (Microelect.) Bratislava	Interdigitated array of microelectrodes	Řeháček V., research fellows, Ilkovičova 3, 841 04 Bratislava	01.01.1994-
Central Agricultural Inspection and Testing, Bratislava	Field experiments for determination of residues of pesticides in fresh and processed products for baby food	Raučinová Ľuba, RNDr., Hanulova 9, 844 40 Bratislava	01.03.2002-31.12.2004
Novofruct, SK, s.r.o., Nové Zámky	Cooperation in the monitoring of pesticide residues in raw materials for baby food production and the fate of pesticides in the process of technology	Henteková M., Ing., technologist Novofruct, SK, s.r.o., Komárňanská cesta 13, 940 43 Nové Zámky	01.01.2004-
Pharmaceutical Faculty, Comenius University, Bratislava	Chiral Separation of some anaesthetics using HPLC method	Čižmárik Jozef, professor, Odbojárov 10, 832 32 Bratislava	01.01.1988-
HB REAVIS MANAGEMENT, s.r.o., B. Bystrica	Analysis of two samples, determination of NaOH and FeCl ₃	Medvec Dobroslav, Ing., Horná 65, 974 01 B.Bystrica	3.3.2004-8.3.2004
ISTRAN, s.r.o., Bratislava	Preparation and chemical analysis of solutions	Beinrohrová Mária, Ing., director of concern, Vígľašská 12, 851 06 Bratislava	1.3.2004-31.12.2004
DUSLO, a.s., Šaľa	Identification and prove of Mancozeb in Novozir MN 80 by termic analyses, röntgen difraction and HPLC	Adamík Roman, RNDr., director, adm.building no. 1236, 927 03 Šaľa	1.8.2004-30.9.2004

Ústredný kontrolný a skúšobný ústav poľnohospodársky, Bratislava	Analyses of Novozir MN 80	Schlosserová, Ing. CSc., Matúšková 21, 833 16 Bratislava	19.8.2004- 23.8.2004
Považský cukor, a.s., Trenčianska Teplá	Determination of the Metals in Sugar	Grežďová Mária, Ing., manager quality, Cukrovarská 311/9, 914 01 Trenčianska Teplá	12.7.2004- 31.8.2004

B. International Cooperation

Institution	Type of cooperation	Responsible person	Duration
UFZ Environmental Research Centre Leipzig, FRG	joint project	Wennrich Reiner, Dr., Head of the Section UFZ Leipzig-Halle, Permoserstr. 15, D-04318 Leipzig, Germany	01.01.2003-
Depart. Anal. Chemistry, Faculty of Natural Sciences, Charles University, Prague, Czech Republic	study stay of students	Barek Jiří, professor, Head of the Laboratory UNESCO Laboratory of Environmental Electrochemistry, Charles University, 128 43 Prague	01.01.2002-
Plant Protection Institute, Bulgaria	Cooperation in pesticide residues analysis	Balinova Anna, professor, Head of Toxicology, Department, PPI Kostinbrod 2230, Bulgaria	01.01.2004-
Department of Chemistry, Gilman Hall, Iowa State University, Ames, Iowa, USA	Chiral separation of optical active compounds by HPLC and HRGC	Armstrong Daniel Wain, professor, Iowa State University/Ames, National Laboratory, Gilman Hall, Ames, IA 50011 USA	01.01.1997-
Department of Organic Chemistry, University of Gent, Gent, Belgium	Chiral separations by HRGC	Sandra Pat, professor, Gent University, Department of Organic Chemistry 9000 Gent, Belgium	01.01.1996-
Nicholas Copernicus University, Toruń, Poland	Trace analysis in GC and HPLC development of new chemical bounded phases	Buszewski Boguslaw, professor, NCU, Faculty of Chemistry, Gagarin Street 7, 87-100 Toruń, Poland	01.01.1995-
School of Chemistry, Monash University, Melbourne, Australia	Electrochemistry. It started during the working stay in Melbourne in 1992-94.	Bond Alan, professor, head of Department, Clayton, Vic. 3800, Australia	01.02.1992 -
Department of Building Materials, University of Mining and Metallurgy, Cracow, Poland	Electroanalytical chemistry and chemometrics, common CEEPUS projects (exchange of students and teachers)	Bobrowski Andrzej, professor, Al. Miczkiewicza, PL-30-059 Cracow, Poland	01.09.2001 -
Department of Analytical Chemistry and Radiochemistry, Technical University, Graz, Austria	Food analysis, bilat. scient. project Austria-Slovakia 37s15 „Chemometrical Classification of Food and Biologically Important Samples"	Lankmayr Ernst, professor, vice-head of Department, Techniker str. 4, A-8010 Graz, Austria	01.03.2002 -
Department of Chemistry, Faculty of Chemistry and Chemical Engineering, University of Maribor, Maribor, Slovenia	Cooperation in food analysis and environmental chemistry	Brodnjak-Vončina Darinka, professor, Smetanova 17, 2000 Maribor, Slovenia	01.01.2004-

Department of
Analytical Chemistry,
University of
Pardubice, Pardubice,
Czech Republic

joint project

Jandera Pavel, professor,
Čsl. légií 565, 532 10
Pardubice, Czech Republic

01.01.2004-

C. Membership in Domestic Organizations and Societies

Name	Organisation or Society	Position	Valid date
Bustin Dušan	Chemical Papers Editorial Board	member	01.01.1991-
Bustin Dušan	Scientific Council of FCHPT	member	01.02.1990-
Krupčík Ján	Analytical Group of SCHS	chairmann	01.01.1992-
Labuda Ján	Academy Senate of FCHPT	member	01.03.2002-
Lehotay Jozef	Union of Slovak Scientific Society, Analytical Chemistry Groupe	chairmann	04.03.2001-
Lehotay Jozef	The Ministry of Education SR, Scientific Agency (VEGA)	member	30.04.2002-
Lehotay Jozef	Commission for air/pollution (TNK 28)	member	01.01.1999-
Lehotay Jozef	Commission for waste managment (TNK 31)	member	01.01.1999-
Lehotay Jozef	Scientific Council of FCHPT	member	01.02.2003-
Lehotay Jozef	Agency for support of science and technique Ministry of education	member of advisory board	10.09.2003-
Matisová Eva	EU Centre of Excellence in Environmental Health Research Institute of Preventive and Clinical Medicine, Bratislava	member of advisory board	01.01.2003-
Mocák Ján	Slovak Medical Society, Bratislava, Slovakia (honorary member)	member	01.10.1998 -
Mocák Ján	Scientific journal "Laboratorna diagnostika" (Laboratory Diagnostics), Bratislava, Slovakia	member of advisory board	01.09.1996-

D. Membership in International Organisations and Societies

Name	Organisation or Society	Position	Valid date
Beinrohr Ernest	Gessellschaft Deutcher Chemiker, Frankfurt, Germany	member	01.06.1990-
Bustin Dušan	IUPAC Fellowship, Switzerland	member	07.03.2002-
Krupčík Jozef	European Commission Science, Research and Developments, expert for the evaluation of proposals, Brussel, Belgium	other	01.01.1999- 31.12.2005
Labuda Ján	Federation of European Chemical Societies and Professional Institutions, the Division of Analytical Chemistry (Delegate of SCHS)	other	06.09.1999-
Labuda Ján	Sensors, Editorial Board of the journal, Basel, Schwitzerland	member	01.01.2001-
Lehotay Jozef	European Commission Science, Research and Developments, expert for the evaluation of proposals, Brussel, Belgium	other	23.02.1999-
Lehotay Jozef	Chemical Analysis, Editorial Board of the journal, Warszawa, Poland	member	07.11.2001-

E. Visitors from abroad

Name	Organisation or Institution	State	Date / Duration
Zebrowski, V.	Nicolas Copernicus University, Torun	Poland	February 2004 (1 month)

Bobrowski, A.	University of Mining and Metallurgy, Crakow	Poland	March 2004 (10 days)
Ligor, M.	Nicolas Copernicus University, Torun	Poland	March 2004 (5 days)
Kriváň, V.	University Ulm, Ulm	Germany	March 2004 (1 days)
Brodnjak-Vončina, D.	University of Maribor, Maribor	Slovenia	March-April 2004 (10 days)
Serdt, K.	University of Maribor, Maribor	Slovenia	March-April 2004 (26 days)
Islamčević, M.	University of Maribor, Maribor	Slovenia	March-April 2004 (26 days)
Mattusch, J.	Environmental Research Centre (UFZ), Leipzig	Germany	July 2004 (10 days)
Serdt, K.	University of Maribor, Maribor	Slovenia	November 2004 (21 days)
Lankmayr, E.	Technical University Graz, Graz	Austria	November 2004 (3 days)

F. Visits of Staff Members and Postgraduate Students in Foreign Institutions

Name	Organisation / Institution / Conference	State	Date / Duration
Benická, E.	International conference Hyphenated techniques in chromatography, University of Gent, Gent	Belgium	February 2004 (7 days)
Blahová, E.	27 th International Symposium on Capillary Chromatography, Riva del Garda	Italy	May-June 2004 (5 days)
Blahová, E.	56 th Congress of Chemical Societies, Ostrava	Czech Republic	September 2004 (4 days)
Dömötörövá, M.	Central Veterinary Examinational Office, Stuttgart	Germany	March-April 2004 (6 days)
Fedurcová, A.	56 th Congress of Chemical Societies, Ostrava	Czech Republic	September 2004 (4 days)
Fedurcová, A.	10 th International Symposium on Separation Science, Opatija	Croatia	October 2004 (5 days)
Ferancová, A.	Environmental Research Centre (UFZ), Leipzig-Halle	Germany	June-July 2004 (1 month)
Hercegová, A.	Central Veterinary Examinational Office, Stuttgart	Germany	March-April 2004 (6 days)
Hercegová, A.	27 th International Symposium on Capillary Chromatography, Riva del Garda	Italy	May-June 2004 (6 days)
Hroboňová, K.	27 th International Symposium on Capillary Chromatography, Riva del Garda	Italy	May-June 2004 (5 days)
Hrouzková, S.	RS Dynamics, Prague	Czech Republic	November 2004 (2 days)
Karasová, G.	56 th Congress of Chemical Societies, Ostrava	Czech Republic	September 2004 (4 days)
Karasová, G.	10 th International Symposium on Separation Science, Opatija	Croatia	October 2004 (5 days)
Kirchner, M.	Central Veterinary Examinational Office, Stuttgart	Germany	March-April 2004 (6 days)
Kirchner, M.	27 th International Symposium on Capillary Chromatography, Riva del Garda	Italy	May-June 2004 (6 days)
Krupčík, J.	University of Tuebingen, Tuebingen	Germany	January 2004 (3 days)
Krupčík, J.	Organizing Committee of Denver Symposium, Denver	USA	July-August 2004 (15 days)
Krupčík, J.	27 th International Symposium on Capillary Chromatography, Riva del Garda	Italy	May-June 2004 (5 days)
Krupčík, J.	10 th International Symposium on Separation Science, Opatija	Croatia	October 2004 (5 days)
Labuda, J.	Faculty of Natural Sciences, Charles University, Prague	Czech Republic	February 2004 (2 days)
Labuda, J.	Environmental Research Centre (UFZ), Leipzig-Halle	Germany	March-April 2004 (15 days)

Labuda, J.	Modern Electrochemical Methods, International Seminar, Jetřichovice	Czech Republic	May 2004 (4 days)
Labuda, J.	Euroanalysis XIII. European Conference on Analytical Chemistry, Salamanca	Spain	September 2004 (8 days)
Labuda, J.	Institute of Biophysics AS, Brno	Czech Republic	June 2004 (1 day)
Labuda, J.	Faculty of Natural Sciences, Charles University, Prague	Czech Republic	August 2004 (4 days)
Labuda, J.	International Workshop on the Application of Nanotechnologies to Biosensors, Institute for Health and Consumer Protection, Joint Research Centre EC, Milano	Italy	December 2004 (4 days)
Lehotay, J.	University of Tuebingen, Tuebingen	Germany	January 2004 (3 days)
Lehotay, J.	Organizing Committee of Denver Symposium, Denver	USA	July-August 2004 (15 days)
Lehotay, J.	27 th International Symposium on Capillary Chromatography, Riva del Garda	Italy	May-June 2004 (5 days)
Lehotay, J.	56 th Congress of Chemical Societies, Ostrava	Czech Republic	September 2004 (5 days)
Lehotay, J.	10 th International Symposium on Separation Science, Opatija	Croatia	October 2004 (5 days)
Májek, P.	27 th International Symposium on Capillary Chromatography, Riva del Garda	Italy	May-June 2004 (6 days)
Matisová, E.	Institute of Technologies and Analytics, Vienna University of Technology, Vienna	Austria	January 2004 (2 days)
Matisová, E.	International Symposium 5 th European Pesticide Residue Workshop, Stockholm	Sweden	June 2004 (7 days)
Matisová, E.	27 th International Symposium on Capillary Chromatography, Riva del Garda	Italy	May-June 2004 (6 days)
Matisová, E.	RS Dynamics, Prague	Czech Republic	November 2004 (2 days)
Mocák, J.	University of Maribor, Maribor	Slovenia	February 2004 (10 days)
Mocák, J.	Seminar Data Analysis 2004/I, Pardubice	Czech Republic	April 2004 (3 days)
Mocák, J.	Technische University of Graz, Graz	Austria	June-July 2004 (9 days)
Mocák, J.	University of Mining and Metallurgy, Krakow	Poland	October 2004 (7 days)
Mocák, J.	Slovenian Chemical Days, Maribor	Slovenia	September 2004 (3 days)
Mydlová, J.	27 th International Symposium on Capillary Chromatography, Riva del Garda	Italy	May-June 2004 (5 days)
Ovádek, R.	International Workshop on the Application on Nanotechnologies to Biosensors, Institute for Health and Consumer Protection, Joint Research Centre EC, Milano	Italy	December 2004 (4 days)
Rojkovičová, T.	Nicolas Copernicus University, Torun	Poland	January-March 2004 (2 months)
Rojkovičová, T.	10 th International Symposium on Separation Science, Opatija	Croatia	October 2004 (5 days)
Střelec, M.	56 th Congress of Chemical Societies, Ostrava	Czech Republic	September 2004 (4 days)
Špánik, I.	27 th International Symposium on Capillary Chromatography, Riva del Garda	Italy	May-June 2004 (6 days)
Tomčík, P.	Physical and Theoretical Chemistry Laboratory, Oxford University	England	January-September 2004 (9 months)

VII. THESES AND DISSERTATIONS

A. Graduate Theses (Bc Degree) for state examinations after three years of study

Name	Title of Thesis	Supervisor
Benisková, Z.	Fast Gas Chromatography Methods in Praxis.	Benická, E.

Čacho, F.	On-line Joint Electrochemical and Photometric Methods to Estimate Toxic Elements in Waters.	Manová, A.
Gardlíková, P.	Application of Capillary Isotachophoresis in Clinical Analysis. The Utilisation of Gas Chromatography and Capillary	Sádecká, J.
Gyöngyová, A.	Electrophoresis for Determination of Origin and Authenticity of Selected Food Commodities.	Špáňik, I.
Hanková, Z.	Determination of Trace Contaminants in Waters by Flow-through Coulometry and Chronopotentiometry.	Beinrohr, E.
Húšková, R.	Analysis of Pesticide Residues by Combination of Matrix Solid Phase Disperzion and Fast Capillary Gas Chromatography.	Matisová, E.
Kujovský, M.	Determination of Trace Contaminants in Waters by Flow-through Coulometry. 1. Determination of Ascorbic Acid by Flow-through Coulometry and Chronopotentiometry.	Beinrohr, E.
Šimková, D.	Analysis of Organic Acids in Food Samples by High Pressure Liquid Chromatography Method.	Hroboňová, K.
Škvarková, L.	New Pesticides and Their Utilization in Practise.	Hercegová, A.
Švorc, L.	Relationships Between Chemical Structure and Biological Activity of Indolizine and 1,4 - Dihydropyridine Derivatives.	Vrábel, V.
Vančová, M.	Interaction Study of Chiral Separation of Some Phenylcarbamic Acid Derivatives by High Pressure Liquid Chromatography Method.	Lehotay, J.

B. Graduate Theses (MS Degree) for state examinations after five years of study

Name	Title of Thesis	Supervisor
Bubničová, K.	Detection of Environmental Risk Substances Using DNA Biosensor.	Labuda, J.
Danková, K.	Chemometric Analysis and Classification of Biochemical and Food Samples Data.	Mocák, J.
Dovalovská, Z.	Application of Microelectrodes in Voltammetric Analysis.	Rievaj, M.
Farkašová, A.	Utilization of the Preconcentration Techniques in Ultratrace Analyse of Pesticide Residues.	Hercegová, A.
Chlebanová, J.	Calculation and Prediction of Electrochemical Signals.	Mocák, J.
Jenčušová, P.	Amperometry on Macro- and Micro-electrodes. Application in Analytical Chemistry.	Bustin, D.
Kovařová, L.	Use of DNA Sensor for the Determination of Risk Substances.	Vaníčková, M.
Meričko, D.	Influence of Chiral Stationary Phase Composition on Separation of Some Enantiomers of Phenylcarbamic Acid Derivatives by HPLC.	Lehotay, J.
Ondrejčka, J.	Dual Column Gas Chromatographic Analysis of Volatile Compounds.	Benická, E.
Otrekal, R.	Utilisation of GC-MS for Utratrace Analysis of Pesticides.	Matisová, E.
Siposová, E.	Using DTC Complexes on Determination of Trace Amounts of Metal Ions after Ion-exchanger Preconcentration.	Oktavec, D.

C. Dissertations (PhD)

Name	Title of Thesis	Supervisor
Blahová, E.	New approaches in sample-handling of complex matrices before HPLC analysis.	Lehotay, J.
Rojkovičová, T.	Enantioseparations of some derivates of organic compounds by HPLC method – interaction study, kinetic study, thermodynamic study.	Lehotay, J.

D. Dissertations (DSc)

E. Habilitation Theses

Name	Title of Thesis	Head of board
Hroboňová, K.	High performance liquid chromatography in analysis of drugs and compounds influence environment.	Bustin, D.
Sádecká, J.	Analysis of complex biological systems by capillary isotachophoresis.	Lehotay, J.

F. Inauguration Theses

VIII. PUBLICATIONS