Prof. Dipl. Eng. Ján Labuda, DSc.

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Teaching Activities

Analytical Chemistry I (1982/83 – 2000/01) Direct Methods for the Determination of the Compounds Structure (1980/81 - 1982/83) Chemical kinetics in Analytical Chemistry (1984/85 – 1991/92) Bioanalytical chemistry (1998/99 – to date) Biosensors (1998/99 – to date)

Research Interests

They include electroanalytical chemistry, sensors and biosensors based on modified electrodes including DNA biosensors.

Total number of journal publications: 99.

Selected Papers

J. Labuda, H. Korgová, M. Vaníčková, Theory and applications of chemically modified carbon paste electrode to copper speciation, Anal. Chim. Acta 1995, 305, 42-48.

J. Labuda, M. Hudáková, The glucose sensor based on a copper complex mediated reduction of hydrogen peroxide, Chem. Anal. (Warsaw) 1997, 42, 435-443.

J. Labuda, M. Bučková, L. Halamová, Sensor-analyte interaction kinetics as a metal speciation criterion, Electroanalysis 1997, 9, 1129-1131.

J. Labuda, A. Meister, P. Gläser, G. Werner, Metal oxide modified carbon paste electrodes and microelectrodes for the detection of amino acids and their application to capillary electrophoresis, Fres. J. Anal. Chem. 1998, 360, 654-658.

J. Labuda, M. Bučková, M. Vaníčková, J. Mattusch, R. Wennrich, Voltammetric detection of the DNA interaction with copper complex compounds and damage to DNA, Electroanalysis 1999, 11, 101-107.

J. Labuda, M. Bučková, S. Jantová, I. Štepánek, I. Surugiu, B. Danielsson, M. Mascini, Modified screen-printed electrodes for the investigation of non-electroactive quinazoline derivatives interaction with DNA, Fres. J. Anal. Chem. 2000 367, 364-368.

A. Ferancová, E. Korgová, T. Buzinkaiová, W. Kutner, V. Štepánek, J. Labuda, Electrochemical sensors using screen-printed carbon electrode assemblies modified with b -cyclodextrin or carboxymethylated b -cyclodextrin polymer films for determination of tricyclic antidepressive drugs, Anal. Chim. Acta 2001, 447, 47-54. M. Bučková, J. Labuda, J. Šandula, L. Križková, I. Štěpánek, Z. Ďuračková, Detection of damage to DNA and antioxidative activity of yeast polysaccharides at the DNA-modified screen-printed electrode, Talanta 2002, 56, 939-947.

Labuda, M. Bučková, Ľ. Heilerová, S. Šilhár, I. Štepánek, Evaluation of redox properties and anti-/prooxidant effects of selected flavonoids by DNA-based electrochemical biosensor, Anal. Bioanal. Chem., 2003, 376, 168-173. Ferancová, Ľ. Heilerová, E. Korgová, S. Šilhár, I. Štepánek, J. Labuda, Anti/pro-oxidant properties of selected standard chemicals and tea extracts investigated by DNA-based electrochemical biosensor, Eur. Food Res. Technol. 2004, 219, 416-420.

Education

1973 Dipl. Eng. (Physical and Analytical Chemistry) Slovak University of Technology in Bratislava

- 1978 Ph.D. (Chemistry) STU in Bratislava
- 2001 DrSc. (Chemical Sciences) STU in Bratislava

Academic Experience

1978 to 1984: Assistent Professor, STU in Bratislava



1984 to 2003: Associate Professor, STU in Bratislava 2003 to date: Full Professor, STU in Bratislava

Special Training

1979: Chemistry of Macrocyclic Compounds, Institute of Physical Chemistry, Ukrainian Academy of Sciences, Kiev, Ukraine (6 months)

1980: Redox Chemistry and Determination of Biological Active Compounds, Zentralinstitut für Ernahrung, Potsdam, Germany (2 months)

1983: Bioinorganic Chemistry and Redox Catalysis by Metal Complexes, Ukrainian Academy of Sciences, Kiev, Ukraine (3 months)

1992: Voltammetric Trace Metal Analysis, University of Mainz, Germany (DAAD, 3 months)

1993: Clinical Trace Analysis, Ionetics Analyzers, Inc., California, USA (2 months)

1996: Chemically Modified Electrodes for Capillary Electrophoresis, University of Leipzig, Germany (DAAD, 2 months)

1997: DNA Based Biosensors, UFZ Centre for Environmental Research, Leipzig-Halle, Germany (3 months) 2000: DNA Based Biosensors, University of Rostock, UFZ Leipzig, Germany (DAAD, 2 months)

Teaching Acitvities

Analytical Chemistry, Bioanalytical Chemistry, Biosensors; garant and co-garant for the study programms Medical Engineering and Analytical Chemistry

Reserch Interests

They include electroanalytical chemistry, sensors and biosensors, particularly those based on DNA modified electrodes.

Total number of journal publications: 105, Science Citation Index: 490

Coordinator of research projects:

INCO-COPERNICUS (1997-2001): Biosensors for direct monitoring of environmental pollutants VEGA, SR (2002-2004): Electrochemical DNA biosensors for characterization of chemical interactions of bound DNA, for the determination of trace species binding to DNA and activators and inhibitors of DNA damage Ministry of Education of SR/DAAD, FRG (2003-2004): Investigation/detection of environmental risk species by DNA-based biosensors

VEGA, SR (2005-2007): Sensor of chemical toxicity - investigation of selected environmental chemical risk factors by biosensors based on DNA and lipids APVV, SR (2005-2007): New biomaterials and biosensors for clinical use

AV, Ministry of Education of SR (2006-2009): Use of biosensors, biomaterials and biosignals in medicine ESF (2006-2008): MediTech - inovation programm of modern biomedical technologies

Others Activities

Delegate of the Slovak Chemical Society at the Division of Analytical Chemistry of the European Association for Chemical and Molecular Sciences, EuCheMS (since 1999),

Titular member of the Analytical Chemistry Division of International Union of Pure and Applied Chemistry, IUPAC (since 2006),

Chairman of the Analytical Chemistry group of the Slovak Chemical Society (since 2005),

Member of Editorial Board of the international journal Sensors (2001 to 2005),

invited editor of the Special Issue of Sensors, Vol. 5, "DNA Biosensors" (2005),

Member of Editorial Board of the journal Chemical Papers (since 2006),

Assessor (1997 to 2001) and head assessor (since 2001) for testing laboratories of the Slovak National Accreditation Service.