

**DEPARTMENT OF MICROELECTRONICS**

<http://www.kme.elf.stuba.sk/kme/>

**Head of Department**

**Prof. Ing. Daniel Donoval, DrSc.**

e-mail: daniel.donoval@stuba.sk

Tel: +421-2-654 23 486

Fax: +421-2-654 23 480

**I. STAFF**

Professors	Prof. Ing. Juraj Breza, PhD., Prof. Ing. Otto Csabay, DrSc., visiting professor of the Technical University in Vienna, Prof. Ing. Daniel Donoval, DrSc., Prof. Ing. Daniela Ďuračková, PhD., Prof. Ing. Jaroslav Kováč, PhD., Prof. Ing. Angelika Ottová, DrSc., Prof. RNDr. Vladimír Tvarožek, PhD., Prof. Ing. František Uherek, PhD.
Associate Professors	Doc. Ing. Ladislav Hulényi, PhD., Doc. Ing. Peter Kordoš, DrSc., Doc. Ing. Róbert Redhammer, PhD., Doc. Ing. Viera Stopjaková, PhD., Doc. Ing. Ľubica Stuchlíková, PhD., Doc. Ing. Alexander Šatka, PhD., Doc. Ing. Marian Veselý, PhD., Doc. Ing. Milan Žiška, PhD., Doc. Ing. Ladislav Harmatha, PhD., Doc. Ing. Ján Janík, PhD., Doc. Ing. Jozef Liday, PhD., Doc. Ing. Ivan Hotový, PhD., Doc. Ing. Rudolf Srnánek, PhD.
Assistant Professors	Ing. Fedor Mika, PhD., Ing. Martin Tomáška, PhD., Ing. Erik Vavrinský, PhD.
Senior Scientists	Ing. Magdaléna Kadlečíková, PhD., Doc. Ing. Rudolf Kinder, PhD., Ing. Juraj Racko, PhD., Ing. Jaroslava Škriniarová, PhD., Doc. Ing. Bedřich Weber, PhD.
Scientific Workers	Ing. Dalibor Búč, PhD., Ing. Martin Florovič, PhD., Ing. Ján Jakabovič PhD., Ing. Alexander Kromka, PhD., Ing. Ivan Novotný, PhD., RNDr. Vlastimil Řeháček, PhD., Ing. Andrej Vrbický, PhD.
Research Workers	Alena Grmanová, Ing. Ľubomír Jánoš, Ing. Milan Kempný, Ing. Michal Konfál, Ing. Libor Majer, Ing. Oľga Valentová, Ing. Radovan Víglaský, Ing. Peter Vogrinčíč, Ing. Marian Vojs
Technical Staff	Božena Harmathová, Jozef Ivan, Jozef Král
PhD. Students	Ing. Peter Benko, Ing. Juraj Brenkuš, Ing. Matin Daříček, Ing. Stanislav Ďatko, Ing. Martin Donoval, Ing. Soňa Flickyngerová, Ing. Aleš Chvála, Ing. Tibor Ižák, Ing. Eva Korecká, Ing. Tomáš Košík, Ing. Jaroslav Kováč, jr., Ing. Milan Kytka, Ing. Libor Majer, Ing. Juraj Marek, Ing. Marián Marton, Ing. Jozef Mihálov, Ing. Lenka Michalíková, Ing. Miroslav Mikolášek, Ing. Vladislav Nagy, Ing. Juraj Pecháček, Ing. Peter Pinteš, Ing. Emil Raschman, Ing. Andrea Reháková, Ing. Martin Šimlašík, Ing. Peter Valent, Ing. Peter Vinduška

**II. EQUIPMENT**

**II.1 Teaching and Research Laboratories**

- Laboratory of Thin Films I
- Laboratory of Thin Films II
- Laboratory of Semiconductor Structures
- Laboratory of Optoelectronics

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- Laboratory of AES
  - Laboratory of SIMS
  - Laboratory of SAM and REM
  - Laboratory of SEM
  - Laboratory of Electronic Devices
  - Laboratory of Electrophysical Measurements
  - Laboratory of Computer Analysis
  - Laboratory of Microelectronic Devices Diagnostics
  - Laboratory of Material Electronics
  - Laboratory of Electronic Devices
  - Laboratory of Semiconductor Structures
  - Laboratory of Sensor Systems and Microsystems
  - Laboratory of Thin Film Sensors
  - Laboratory of Vacuum Technique and Electronics
  - Laboratory of Design IO
  - Laboratory of Raman Spectroscopy
  - Laboratory of Vacuum Technology I
  - Laboratory of Vacuum Technology II
  - Laboratory of Chemical Processes I
  - Laboratory of Chemical Processes II
  - Laboratory of Optoelectronic Device Technology
  - Laboratory of Deposition Technology
  - Laboratory of Plasma Processes
  - Laboratory of Microwave Electronics
  - Laboratory of Digital Signal Processing
  - Laboratory of Optical Measurements
  - Laboratory of Sensors and Lock Technique
  - Laboratory of Microlithography
  - Laboratory of Biochemical Sensors
  - Laboratory of CIS
  - Laboratory of Digital Circuits
  - PC Laboratory for Design IO and Semiconductor Structures
  - Laboratory of Laser Technology

## **II.2 Special Measuring Instruments and Computers**

- Computer aided system for I-V and C-V measurements and analysis in temperature range from 20 to 400 K,
- DLTS system 300 W Solar, QDLTS Time Domain Spectrometer
- Sputtering unit Perkin-Elmer Ultek/Randex 2400/8L
- Talystep S112 profilometer
- Vacuum system B55.3 Hochvakuum Dresden with magnetron sputtering sources
- Sputter etcher XNE-01 (Secon)
- Auger electron spectrometer (Varian)
- X-ray Photoelectron spectrometer (VG Microtech)
- Raman spectrometer (ISA-Jobin Yvon-Dilor-Horiba)
- Microwave analyzer HP 8408 S
- Scanning electron microscope BS 300 for diagnostics of semiconductor structures (equipped with EBIC and EBIV modes)
- TCAD Process and Device Modelling and Simulation Tools (ISE)
- Symbolic layout software design software CAMELEON
- HSPICE, CADENCE and SYNOPSIS design systems (through EURO PRACTICE)
- XILINX and ALTERA development systems (vendors donation)
- Workstations Sun Ultra 10, Sun Sparc, HP712

- Analog Devices and Motorola DSP systems

### **III. TEACHING**

#### **III.1 Undergraduate Study (Bc.)**

Subject, semester, hours per week for lectures and for seminars or practical exercises, name of lecturer

Materials for Electronics	(3rd sem., 3-2h)	D. Donoval
Electronics	(3rd sem., 3-2h)	M. Žiška
Electronic Devices and Circuits	(4th sem., 3-2h)	R. Redhammer
Physical Electronics of Solids I	(5th sem., 3-2h)	D. Donoval
Sensorics	(5th sem., 2-2h)	V. Tvarožek
Optoelectronics	(6th sem., 3-2h)	F. Uherek
Physical Electronics of Solids II	(6th sem., 3-1h)	M. Veselý
Technology of IC (TCAD)	(6th sem., 2-2h)	D. Donoval
Digital Circuits	(6th sem., 3-2h)	F. Míka
Integrated Circuit Structures	(7th sem., 3-2h)	O. Csabay, L. Harmatha
Semiconductor Lasers and Photodetectors	(7th sem., 2-2h)	J. Kováč
Methods of Material Analysis	(7th sem., 3-1h)	J. Breza
Basic Processes of Micromechanics	(7th sem., 2-2h)	I. Hotový
Quality Management	(7th sem., 2-2h)	L. Hulényi
Bachelor Project I	(7th sem., 0-4h)	F. Uherek
Computer Aided Circuit Analysis	(8th sem., 3-2h)	M. Tomáška
Laser Technique	(8th sem., 2-2h)	F. Uherek
Programming IC	(8th sem., 2-2h)	J. Jakabovič
IC Design	(8th sem., 2-2h)	D. Ďuračková
Integrated Circuits	(8th sem., 2-3h)	D. Ďuračková
Surface Physics	(8th sem., 2-2h)	M. Veselý
Microsensors	(8th sem., 2-2h)	V. Tvarožek
Bachelor Project II	(8th sem., 0-4h)	F. Uherek
Applied Sensorics	(8th sem., 2-2h)	I. Hotový

#### **III.2 Graduate Study (Ing.)**

DSP Circuits	(1st sem., 2-1h)	A. Šatka
CAE of Electronic Devices	(1st sem., 2-2h)	D. Donoval
Computer Aided Circuit Design	(1st sem., 2-2h)	M. Tomáška

Electronic Measurement and Measurement Devices	(1st sem., 2-2h)	A. Šatka
Optical Communication Systems	(1st sem., 2-2h)	F. Uherek
Applied Optoelectronics and Lasers	(1st sem., 2-2h)	J. Kováč
Spectroscopes for Analysis of Surfaces and Thin Films	(1st sem., 2-1h)	J. Liday
Vacuum Technique for Light Sources	(1st sem., 2-2h)	M. Veselý
Team Project	(1st sem., 0-6h)	D. Donoval
Diploma Project I	(1st sem., 0-6h)	F. Uherek
Scientific Communication	(1st sem., 1-0h)	F. Uherek, D. Donoval J. Breza
Sensor Microsystems	(2nd sem., 2-2h)	V. Tvarožek
Nanoelectronics	(2nd sem., 2-2h)	R. Redhammer
Computer Aided IC Design	(2nd sem., 3-2h)	V. Stopjaková
Microwave Electronics	(2nd sem., 2-2h)	M. Tomáška
Vacuum Physics and Technique	(2nd sem., 2-2h)	M. Veselý
Superconductor Electronics	(2nd sem., 2-1h)	J. Breza
Diagnostics of Integrated Circuits and Systems	(2nd sem., 3-2h)	V. Stopjaková
Analog IC Design	(2nd sem., 2-1h)	D. Ďuračková
Microsystems Technology	(2nd sem., 2-1h)	I. Hotový
Integrated Optoelectronics	(2nd sem., 2-1h)	J. Kováč
Diploma Project II	(2nd sem., 0-4h)	F. Uherek
Diploma Project III	(3rd sem., 0-8h)	F. Uherek

### III.3 Undergraduate and Graduate Study for Foreign Students (in English Language)

Electronic Devices	(3rd sem., 4-2h)	M. Žiška,
Safety in Electrical Engineering	(4th sem., 1-0h)	M. Kempný
Sensorics	(5th sem., 4-2h)	V. Tvarožek
Optoelectronics	(5th sem., 4-2h)	F. Uherek, J. Kováč
Integrated Circuits	(5th sem., 4-2h)	M. Žiška

### IV. RESEARCH PROJECTS

- Advanced Low Dimensional Structure Development Based on Compound  $A^3B^5$ ,  $A^2B^6$  and Organic Semiconductors for Applications in Optoelectronic and Photonic Devices. VEGA 1/3106/06, J. Kováč

- Investigation of Electrophysical and Technological Issues of MIS Structures with Ultra-thin Insulator Layers for a New Generation of Unipolar Devices. VEGA 1/3091/06, L.Harmatha
- Sensoric micro-/nano- structures and interfaces. VEGA 1/3098/06, V. Tvarožek
- Nanocrystalline thin film structures for sensorics and microsystem technology. VEGA 1/3095/06, I. Hotový
- Carbon Nanotubes and Their Emission Properties. VEGA 1/2040/05, J. Janík
- Raman Spectroscopy of Catalytically Synthetized Carbon Nanotubes, VEGA 1/03034/06, M. Kadlečíková
- Implementation of Neural Networks on a Chip and Their Use by Signal Processing in Bioapplications. VEGA 1/2046/05, D. Ďuračková
- Ohmic Contacts on p – type Gallium Nitride. Quantitative Aspects of AES of Group III Nitrides and of their Alloys. VEGA 1/4079/07, J. Liday
- Design, characterization and simulation of electrophysical properties of power semiconductor structures an devices of submicrometer dimensions, VEGA 1/2041/05, Daniel Donoval
- Submicron technologies and (nano-) structures of Bipolar-CMOS-DMOS FET for smart power electronic devices and integrated circuits, APVV-20-0554-05, Daniel Donoval
- Investigation of Physical and Electrical Properties of Nanocrystalline Diamond, VEGA 1/2061/05, M.Veselý
- Innovation of Educational Schedule in Microelectronics Study with an Orientation on Basic Subjects of Undergraduate and Graduate Study with an Emphasis on Progressive Micro-, Opto- and Nanoelectronic Technologies, KEGA 3/4009/06, O. Csabay
- Carbon Layers for Tooling and Electronic Applications. AV/4/0124/06, R. Redhammer
- Gas Sensing Microsystem Based on GaAs Micromachined Structures. AV/1115/2004, I. Hotový
- Development of Wireless Non-intrusive Measurement System for Monitoring of Human Psycho-physiological Processes under Stress. AV 04/0018/07, V. Stopjaková
- Development and Application of Diagnostic Methods to Semiconductor Devices and Integrated Circuits Assessment. AV 4/0022/05, A. Šatka
- Thin Oxide Films for Advanced MOS Structures, APVT – 51 – 017004, Karol Fröhlich, L.Harmatha
- Monolithic Integrated Gas Sensing Microsystem Based on GaAs Microstructures. APVT-20-21004, I. Hotový
- Six-port Reflectometer Integration. AV/4/0017/05, M. Tomaška
- Development of New Superhard Materials Based on Carbon and Nitride Films with Special Emphasis on Diamond and Cubic Bor Nitride, APVT APV-344-Ves-Sk1,(2005-2007), M.Veselý

## **V. COOPERATION**

### **V.1 Cooperation in Slovakia**

- Institute of Electrical Engineering, Slovak Academy of Sciences, Bratislava
- Institute of Physics, Slovak Academy of Sciences, Bratislava
- Institute of Informatics, Slovak Academy of Sciences, Bratislava
- International Laser Centre Bratislava
- Research Institute for Welding, Bratislava
- ON Semiconductor Slovakia, Piešťany
- Semikron Vrbové
- Applied Precision, Bratislava
- LOX Technologies, Piešťany
- First Welding Company, Bratislava

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- University of Žilina

## V.2 International Cooperation

- Czech Technical University, Department of Microelectronics, Prague, Czech Republic
- Technical University of Brno, Department of Microelectronics, Czech Republic
- IMEC Leuven, Belgium
- Johannes Kepler Universität Linz, Austria
- Technical University Ilmenau, Germany
- Hungarian Academy of Sciences Budapest, Hungary
- Universität Leipzig, Fakultät für Physik und Geowissenschaften, Fakultät für Chemie und Mineralogie, Leipzig, Germany
- Institute of Semiconductor Physics, National Academy of Sciences, Kiev, Ukraine
- Michigan State University, Lansing, USA
- Technical University Vienna, Austria
- Technical University Munich, Germany
- Institute of Scientific Instruments, Czech Academy of Sciences, Brno, Czech Republic
- University of Athens, Department of Physics, Greece
- Regensburg University, Germany
- Institut für Schicht- und Ionen Technik Jülich, Germany
- On Semiconductor, Rožnov pod Radhoštěm, Czech Republic
- Harlingen Lanškroun, Czech Republic
- Faculty of Microsystem Electronics and Photonics, Wrocław University of Technology, Poland
- Institute for Solid State Physics, Technical University Graz, Graz, Austria
- Physikalisches Institut, Universität Würzburg, Germany
- Department of International Cooperation, DLR Cologne, Germany
- RAL Didcot UK, Surrey, Great Britain
- Imperial College, Department of Materials, London, UK
- Istituto per la Microelettronica ed i Microsistemi CNR, Lecce, Italy
- Umweltsensortechnik GmbH, Geschwenda, Germany
- City University of Hong Kong, Hong Kong, China
- Bournemouth University, Bournemouth, UK
- Technische Universität, Bergakademie Freiberg, Institut für Theoretische Physik, Freiberg, Germany
- National Hellenic Research Foundation, Theoretical and Physical Chemistry Institute, Athens, Greece
- Photeon Technologies GmbH, Bregenz, Austria

## V.3 International Scientific Projects

Projects within the 5<sup>th</sup> and 6<sup>th</sup> EC Framework program:

- IST WORLD, Knowledge Base for IST Competencies, IST-3-015823, B. Weber
- MINOS-EURONET, IST-3-015704, Micro-Nano-Systems European Network, pursuing the integration of NMS and ACC in ERA, B. Weber
- EPISTEP, Enhanced Participation of SMEs in IST European Technology Platforms, INNOV-5-023295, B. Weber
- Europractice IC Service to Academic Institutions or publicly funded Research Laboratories primarily engaged in University as activities from European Union member States, European countries eligible to participate in FP5 and other countries with close links to Europe. Co-ordinators: Dr. John A. McLean, Software Service Manager and Dr. Carl Das, IC Service Manager  
Europractice IC Service Consortium partners: CLRC (RAL), IMEC and FhG/IIS-A  
STU Co-ordinator: M. Veselý
- ERA Pilot MiNa TSI – European Research Area Pilot Action on Micro/Nano Technology System Integration, 6RP/IST-3-015833, D. Donoval

Projects within ESF

- NANOSYS - Research and education centre of nanotechnologies for integrated circuits systems applications development  
Co-ordinator: V. Stopjaková

Project within the Austrian and Slovak Scientific and Educational Co-operation (Action Austria – Slovakia):

- 57s11 - Accurate compositional assessment of novel materials for information technologies, 57s11  
Co-ordinator: J. Breza, (SK)  
Co-ordinator: A. Bonanni, (AT)  
Co-operating institutions: STU Bratislava (J. Breza); Johannes Kepler University Linz (A. Bonanni)
- 57s8 – Preparation and Properties of Organic Thin Film Transistor (2007).  
Co-ordinator: J. Kováč (STU Bratislava)  
Co-operating institutions: STU Bratislava (J. Kováč); Institute of Solid State Physics, Graz University of Technology (R. Resel)

Projects within bilateral co-operation Slovakia - Austria

- Accurate compositional assessment of novel materials for information technologies, 57s11  
Co-ordinator: J. Breza, (SK)  
Co-ordinator: A. Bonanni, (AT)
- Optimized contacts for blue light emitting diodes (2004-2008).  
Co-ordinator: J. Liday (STU Bratislava)  
Co-operating institutions: STU Bratislava (J. Liday); Johannes Kepler University Linz (H. Sitter)

Projects within the bilateral co-operation Slovakia-Czech Republic:

- MŠMT ČR 1M06031 - Materials and components for environment protection.  
Project leaders: P. Šutta (NTC ZČU Plzeň), V. Tvarožek (STU)

Projects within the bilateral co-operation Slovakia-Germany:

- Nem/Slov/1/DAAD - Novel Materials, Technologies and Methodologies of Their Assessment for Electronics and Sensorics.  
Co-operating institutions: STU Bratislava (J. Liday), TU Ilmenau (Ch. Knedlik)
- PPP Program DAAD, Project FZ 10/2003 - Advanced materials and micro/nano structures for sensoric interfaces  
Co-operating institutions: STU Bratislava (V. Tvarožek), TU Ilmenau (Ch. Knedlik)
- Program DAAD, Project č. 10/2006: Nanocrystalline thin film structures for sensorics and microsystem technology  
Co-operating institutions: STU Bratislava (I. Hotový), TU Ilmenau (L. Spiess)

Project within the bilateral co-operation Slovakia-Poland:

- Advanced Semiconductor Heterostructures and Nanostructures Characterisation and Processing for Optoelectronic Devices (2006-2008).  
Project leader STU: J. Kováč, R. Kinder  
Co-operating institution, Project leaders: Faculty of Microsystems Electronics and Photonics Wroclaw University of Technology (M. Tlaczala, B. Boratynski)

Project within the bilateral co-operation Slovakia-Greece:

- Deposition of NiO thin films and optimization of their operation parameters for toxic gas sensing applications

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Co-ordinator: I. Hotový (STU Bratislava)

## **VI. THESES**

### **VI.1 Masters Theses**

Masters theses supervised at the Department of Microelectronics. The names of supervisors are in brackets.

- [1] Z. Križanová: Transmission electron microscopy of carbon nanotubes and nanocomposites (M. Kadlečíková, I. Vávra)
- [2] T. Kováčik: Design of data system storage and evaluation from technological process of diamond layer growth and measurement of their electrical properties (M. Vojs, M. Veselý)
- [3] M. Kováč: Low emittance ion beam sources (M. Mozolík, J. Janík)
- [4] J. Beňo: Bipolar transistor and its applications in electronic circuits as a component of electronic education (L. Stuchlíková)
- [5] M. Števo: The animation of the basic electro-physical properties in semiconductors and AWG analyzer (L. Stuchlíková, D. Seyringer)
- [6] J. Žilka: Equivalent model of thin-film impedance microsensor (E. Vavrinský)
- [7] J. Hrubčo: Design filter for implementation of silicon cochlea (D. Ďuračková)
- [8] J. Mihálov: Design of voltage reference for analog integrated circuits in CMOS technology (V. Stopjaková)
- [9] I. Hronec: Spectral analyzer (F. Mika)
- [10] B. Poljovka: A/D converter for measuring noise signal (F. Mika)
- [11] D. Gajdoš: Universal programmer – module for microprocessor ATMEL (F. Mika)
- [12] M. Bordáč: Experimental study of acoustoelastic response of mems elements (M. Držík, F. Uherek)
- [13] J. Kadlečík: Measurement of selected parameters of the semiconductor optoelectronic devices (J. Chovan)
- [14] J. Lipták: Study of ambipolar transport in conjugated organic semiconductor systems using OFETs (J. Kováč, M. Morana)
- [15] J. Serbák: Photoenhanced wet chemical etching of AlGaIn/GaN-based semiconductor structures (J. Škriniarová)
- [16] M. Štefík: Optical transmitter and receiver for 1.25 Gbps free-space optical communication system (J. Chovan, F. Uherek)
- [17] P. Petráš: The proposal of workstation for measuring of PIR detectors facilities (F. Uherek)
- [18] L. Zuzik: Position measurement using LVTD sensor with ADSP-21160 digital signalprocessor (A. Šatka)
- [19] M. Franta: Microstructure of HfO<sub>2</sub> and Hf<sub>x</sub>Si<sub>1-x</sub>O<sub>y</sub> dielectric films prepared on Si for advanced CMOS application (A. Rosová, L. Harmatha)
- [20] M. Horkavy: 2d modeling and simulation of N-channel double resurf LDMOS transistor (A. Vrbický, D. Donoval)
- [21] A. Kmeť: Characterization of electrophysical properties of implanted MOS structures with high permittivity dielectrics (P. Kováč, L. Harmatha)
- [22] J. Mikulášovič: Design of p-channel double resurf LDMOS transistor with the aid of modeling and simulation (A. Vrbický, D. Donoval)



- [23] V. Vernarský: Analysis of the leakage current characteristics of MOS structures with thin high-k gate dielectrics (M. Ťapajna, L. Harmatha)
- [24] M. Výboštok: Measurement and Evaluation of electrophysical properties power Trench MOS transistors (A. Vrbický, D. Donoval)
- [25] M. Mikolášek: Fabrication of SU-8 microfluidic devices using low temperature bonding (K. Hingerl, L. Harmatha)
- [26] J. Benkovská: Electrical characterization of Schottky structures based on 4H-SiC (L. Stuchlíková)
- [27] P. Mondočko: Unipolar MOS structures as a component of electronic education (O. Csabay, L. Stuchlíková)
- [28] O. Kučera: Modeling of quantum properties of the standard and schottky NMOS transistor with dual gate (DG) based on silicon (J. Racko)
- [29] M. Benko: Creation module of education with use of animation of electronic and optoelectronic characters of light emitting diodes (L. Stuchlíková, M. Florovič)
- [30] J. Kukučka: Graphic interface for creating photolithographic masks (J. Jakabovič)
- [31] M. Meszároš: Analysis and design of ohmic contacts for GaN heterostructures (A. Vincze, F. Uherek)
- [32] M. Benčíč: The analysis of thermal annealing influence of silicon based MOS structures with high permittivity of oxide (A. Vincze, F. Uherek)
- [33] A. Širočka: Preparation and characterization of electrical properties of organic field effect transistors based on pentacene (J. Jakabovič)
- [34] J. Urban: Laser technology of wood processing (F. Uherek)
- [35] M. Dudžák: Selected properties of semiconductor lasers analysis (J. Kováč, jr.)
- [36] P. Kuřka: Reduction of the photodegradation of  $\pi$ -conjugated polymers for solar cells (H.J. Egelhaaf, F. Uherek)
- [37] M. Maxian: Comparison of opamp macromodel with transistor level model in SPICE environment (D. Ďuračková)
- [38] M. Bugár: CMOS low noise rf amplifier in 2 GHz band (L. Majer)
- [39] P. Švrček: Modelling of self-organizing neural networks and their usage for data classification (V. Stopjaková)
- [40] M. Repák: Design and implementation of CIC filter in FPGA (A. Šatka)
- [41] D. Foltánová: Optical monitoring of blood sedimentation (R. Víglašký, V. Tvarožek)
- [42] D. Tengeri: Gas microsensor prepared on GaAs substrate (I. Hotový)
- [43] M. Tibenský: A micromachined gas sensor prepared on ceramics substrate (I. Hotový)
- [44] M. Kolmačka: The thermometer in the hot filament chemical vapour deposition (HF CVD) reactor with wireless (optical) transmission of information about temperature (M. Kadlečíková)
- [45] M. Varga: Calculation of thermal relations of filaments and supporter of samples for substratum in HF reactor (Š. Bederka)

## VI.2 Doctoral Theses

- [1] A. Vrbický: Modeling and simulation of selected properties of advanced power semiconductor structures (D. Donoval)
- [2] T. Daniš: Growth of Carbon Nanotubes by Chemical Vapour Deposition (R. Redhammer)
- [3] K. Štereva: Nitrogen doped zinc oxide thin films prepared by RF diode sputtering (V. Tvarožek)
- [4] P. Malošek: Application of artificial neural networks in diagnosis of integrated circuits

(V. Stopjaková)

- [5] M. Ľapajna: Electrical characterisation of MOS structures for advanced CMOS technology (L. Harmatha)

## **VII. OTHER ACTIVITIES**

- The 6<sup>th</sup> Electronic Circuit and Systems Conference, Bratislava, Slovakia on 6-7 September, 2007, organized by: Department of Microelectronic, Faculty of Electrical Engineering and Information Technology, Slovak University of Technology Bratislava
- Contractor of the Leonardo Pilot Project "Microteaching – modular teaching and learning offers for contemporary, needed and specific further education", Microteaching (M. Veselý)
- Advisor to Higher Education Section of the Slovak Ministry of Education for International projects (M. Veselý).
- Head of Office for European Union Programs at FEI STU (M. Veselý)
- Coordinator and Contractor of the FP5 Project EURO PRACTICE (M. Veselý)
- University net for Office for EU Programmes (M. Veselý)
- Coordinator and Contractor of the Leonardo Student Mobility Project "Successful Way through the Training to the EU Market, SUWAM" (M. Veselý)
- Coordinator and Contractor of the Leonardo Student Mobility Project "Slovak University of Technology Students Vocational Training Placements in Europe, SUTSE" (M. Veselý)
- Contractor of the Leonardo Pilot Project "Information and Communication Technologies in Lifelong Learning", ICOTEL (M. Veselý)
- Contractor of the Leonardo Pilot Project "Teaching and Learning in Virtual Learning Environments for Water Management", WALTER (M. Veselý)

## **VIII. PUBLICATIONS**

### **VIII.1 Journals**

- [1] BREZA, J., KADLEČÍKOVÁ, M.: Spectroscopic Analyses of Materials and Structures for Electronics. In: Zpravodaj ČVS. - ISSN 1213-2705. - Vol. 15, No. 1-2 (2007), p. 47-53. (in Slovak)
- [2] BÚC, D., BELLO, I., ČAPLOVIČOVÁ, M., MIKULA, M., KOVÁČ, J., HOTOVÝ, I., CHONG, Y.M., SIU, G.G.: Analysis of Magnetron Sputtered Boron Oxide Films. In: Thin Solid Films. - ISSN 0040-6090. – Vol. 515 (2007), p. 8723-8727. (in English)
- [3] BÚC, D., STUHLÍKOVÁ, E., HARMATHA, L., HOTOVÝ, I.: Electrical Characterization of 4H-Si Schottky Diodes with a RuO<sub>2</sub> and a RuWO<sub>x</sub> Schottky Contacts. In: Journal of Materials Science: Materials in Electronics. - ISSN 0957-4522. - Vol. 18, No. 12 (2007), p. 9409-9412. (in English)
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### **VIII.3 Part of book**

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