DEPARTMENT OF PHYSICS

1 General information

Technical progress in the past as well as today is largely based on the knowledge and on the methods of natural sciences, physics in particular. Some phenomena and principles studied in physics today are already considered as a basis for future applications. For all, let us mention the quantum informatics. Thus it is necessary to provide all engineering students with a solid education in mathematics and physics. It will enable them to understand new technologies and to further develop their own fields. It teaches them to master existing concepts using mathematics as a language.

The Department of Physics teaches General Physics to students of all Faculties of the University and Advanced Physics for some special courses.

The Department is divided into two sections according to their research specialization. The staff consists of 1 professor, 7 associate professors, 10 senior lecturers (of which there are 4 external Ph.D. students), 2 internal Ph.D. students, 5 research fellows, 3 technical support employees, 1 administrative secretary.

The research carried out at the Department is mostly concerned with the utilization of acoustic and optical wave processes for the investigation of condensed matter. The Acoustic Group uses a wide range of ultrasonic techniques as well as acousto-electric and acousto-optic phenomena and techniques to investigate semiconductors, metals, and ferroelectric materials. Also wave phenomena are studied in their own right.

The Optical Group studies physical properties of the conventional telecommunications optic fibers, twin core optic fibers, photonic crystal fibers, biological photonic structures, and semiconductor laser diodes based on quantum wells. Self-diffraction of light in magnetic fluids and photorefractive phenomenon in selected condensed matter materials are also studied within the group.

Lately the research program of the Department has been extended to theoretical high-energy physics. The focus of the High-Energy Physics Group lies in phenomenology of the Standard model of electroweak interactions and beyond. Particularly, the models of electroweak symmetry breaking are studied.

The research groups of the Department achieved good level of expertise and became well known abroad. The scientific activities of the Department are regularly presented at the international conferences and are published in domestic and international scientific and professional journals. Department members use also their qualifications in research and pedagogical activities outside the Department. In particular, they serve as members of various scientific and professional committees and of international organizations. Many activities are directed to advancing the education of teachers and students of elementary and secondary schools. They provide a significant support to talented students of secondary schools.

2 Staff of the Department

Head of the Department	:	Peter Bury (since Oct 26, 2008) Igor Jamnický (to Oct 25, 2008)
Vice-head of the Department	:	Dušan Pudiš
Secretary for Education	:	Gabriela Tarjányiová
Administrative Support	:	Anna Chasníková
Technical Support	:	František Černobíla

Naďa Remencová
Juraj Remenec (1/3 position)

2.1. Sections of the Department

2.1.1 Section of General Physics

Head of the Section	:	Ivan Melo
Associate Professor	:	Juraj Braciník (½ position)
Research Fellows	:	Mikuláš Gintner
		Ivan Melo
Senior Lecturers (with PhD)	:	Beáta Trpišová
Senior Lecturers (without PhD)	:	Ivan Bellan
		Juliana Knociková
		Gabriela Tarjányiová
		Igor Varga (½ position)
		Pavel Virdzek

2.1.2. Section of Applied Physics

Head of the Section	:	Dušan Pudiš
Professor	:	Peter Bury
Associate Professors :		Igor Jamnický
		Ivan Martinček
		Dušan Pudiš
		Sofia Slabeyciusová
		Július Štelina (½ position)
Research Fellows	:	Jozef Kúdelčík
		Ctibor Musil (½ position)
		Ivan Turek (½ position)
Senior Lecturers (with PhD)	:	Peter Hockicko
		Daniel Káčik
		Norbert Tarjányi
Senior Lecturers (without PhD)	:	Peter Sidor
		Ladislav Vikisály

2.1.3 Postgraduate Students

Internal	:	Ľuboš Šušlik (since Oct 1, 2008)
		Peter Tvarožek (since Oct 1, 2008)
External	:	Peter Sidor
		Gabriela Tarjányiová
		Pavel Virdzek
		Juliana Knociková

3 Teaching

3.1 Courses in Bachelor and Master Degree Programmes

Code	Tittle	Semester	Lessons-Seminars-Lab.exercises hours/week	Teachers
Courses at the Faculty of Electrical Engineering				
3B107	Introduction to Physics	1	1 - 2 - 0	Káčik
3B202	Physics I	2	3 - 2 - 1	Bury, Káčik, Jamnický
3B301	Physics II	3	3 - 2 - 1	Bury, Jamnický
3B410	Introduction to Semiconductors	4	3 - 1 - 1	Braciník
3B323	Computer Modeling of the Real Processes	3	1 - 0 - 2	Jamnický, Pudiš
3I123	Physics III	4	2 - 1 – 0	Bury
31639	Measuring Methods in Optoelectronics	9	2 - 0 - 0	Káčik
Courses at the Faculty of Mechanical Engineering				
2B010	Seminar on Physics	1	0 - 2 - 0	Trpišová
2B018	Physics I	2	3 - 2 - 0	Pudiš, Slabeyciusová
2B033	Physics II	3	2 - 0 - 2	Pudiš, Slabeyciusová
2B018	Physics I (External studies)	2	20 - 6 - 0	Vikisály
2B033	Physics II (External studies)	3	20 - 6 - 0	Vikisály
Courses at the Faculty of Civil Engineering				
4B118	Seminar on Physics	1	0 - 2 - 0	Virdzek
4B113	Physics	1	2 - 1 - 1	Štelina
4B202	Physics I	2	2 - 1 - 1	Hockicko, Martinček
4B218	Physics – optics	2	2 - 1 - 0	Štelina
4B211	Lectures on Physics	2	0 - 2 - 0	Tarjányi
4D102	Applied Physics	1d	2 - 0 - 0	Bury, Štelina
4E203	Physics (External studies)	2	12 - 8 - 0	Tarjányi
4E208	Lectures on Physics (External studies)	2	10 - 0 - 0	Tarjányi
Courses at the Faculty of Operation and Economics of Transport and Communication				
11P01	Physics	1	2 - 1 - 1	Martinček, Hockicko, Kúdelčík

12P01 Physics (External studies)	1	16 - 0 - 0	Jamnický

Courses at *the Faculty of Management Science and Informatics*

5BF05 Fundamental Physics	1	3 - 1 - 1	Braciník

Courses at the Faculty of Special Engineering

92026 Physics	2	2 - 1 - 1	Kúdelčík
97026 Physics	2	18 - 0 - 0	Vikisály

Courses at the Faculty of Natural Sciences

8BT09 Mechanics and Thermodynamics	2	3 - 2 - 0	Trpišová
8BT84 Physics II	3	3 - 2 - 1	Bury
8BT33 Computer Physics I	5	2 - 0 - 2	Kúdelčík
8BT20 Oscillations and Wave Motion	4	3 - 2 - 0	Melo
8BT45 Quantum Physics	6	2 - 1 - 0	Gintner
8MF13 Teaching Physics III	8	1 - 2 - 0	Tarjányiová
8MF14 Special Laboratory of School Experiments II	8	0 - 3 - 0	Tarjányiová
8MF15 Astronomy, Geophysics, and Meteorology	8	2 - 1 - 0	Štelina
8BT96 Condensed Matter Physics	8	3 - 2 - 0	Braciník
8MF18 Solid State Physics	9	2 - 1 - 0	Braciník
8MF19 Physics Problems Solving I	9	0 - 3 - 0	Hockicko
8MF24 History of Physics and Technology	10	2 - 0 - 0	Braciník
8MF25 Philosophical Aspects of Physics	10	2 - 0 - 0	Gintner
8BT47 Experimental Methods of Physics	6	2 - 2 - 0	Kúdelčík
8MT62 Selected Lectures on Physics	9	2 - 0 - 0	Gintner

4 Educational, Research and Scientific Projects

4.1 Internal Research Projects

Title: Investigation of optical properties of photonic structures and experimental study of the kinetics of nanoparticles in colloidal liquids

Coordinator: Ivan Martinček
Co-operators: Daniel Káčik
Dušan Pudiš
Norbert Tarjányi
Ivan Turek
Július Štelina
Ctibor Musil
Pavel Virdzek
František Černobíla

Title: Study of physical properties of prospective materials using acoustic methods

Coordinator: Peter Bury
Co-operators: Igor Jamnický

Sofia Slabeyciusová
Peter Hockicko
Jozef Kudelčík
Ivan Bellan
Peter Sidor
Ladislav Vikisály

Title: Phenomenological study of the properties of microworld at current and future colliders
Coordinator: Ivan Melo
Co-operators: Mikuláš Gintner
Beáta Trpišová

4.2 National Projects

4.2.1 Research Projects Funded by the Scientific Grant Agency of the Slovak Republic (VEGA)

Title: The scanning of optical fields by means of tapered optic fibres and the application of the method to the investigation of the optical fields of the optoelectronic and optic elements (VEGA 1/2048/05)
Coordinator: Pudiš Dušan
Co-operators: Martinček Ivan, Turek Ivan, Káčik Daniel, Tarjányi Norbert, Slabeyciusová Sofia

Title: Phenomenology of ultrarelativistic nuclear collisions (VEGA 1/4012/07)
Coordinator: Tomášik Boris (PF UMB, Banská Bystrica)
Sub-Coordinator: Gintner Mikuláš
Co-operators: Melo Ivan

Title: Study of impact of thermodiffusion coefficient on kinetics of nanoparticles in magnetic fluids using the light diffraction or other methods (VEGA 2/6166/6)
Coordinator: Kopčanský, Košice
Sub-Coordinator: Štelina Július
Co-operators: Musil Ctibor

Title: Investigation of physical properties of the structures of oxide/semi-conductor with an extremely reduced density of states at the interfaces (VEGA 2/7120/27)
Coordinator (in Žilina): Jarmila Müllerová
Co-operators at the Dept: Peter Bury, Peter Hockicko, Peter Sidor

4.2.2 Projects Funded by the Cultural & Education Grant Agency (KEGA)

Title: Use of multimedia technologies and e-learning as a support for teaching physics in Bachelor degree programme (KEGA: 3/3076/05)
Coordinator (in Žilina): Igor Jamnický
Vice-co-ordinator : Peter Hockicko

4.2.3 Research Projects Funded by the Slovak Research and Development Agency (APVV)

Title: Discovering the beauty of physics (APVV LPP 0192-06)

Coordinator: Kíreš Marián (PF UPJŠ Košice)
Sub-Coordinator: Melo Ivan
Co-operators: Gintner Mikuláš, Tarjányiová Gabriela, Trpišová Beáta, Kúdelčík Jozef

Title: Žilina University for Children (APVV LPP 0195-07)
Coordinator: Peter Hockicko
Co-operators: Gabriela Tarjányiová, Ivan Turek

Title: Interactive exhibition of physical demonstrations „Country of Waves"(APVV-LPP-0090-06)
Coordinator: Turek Ivan
Co-operators: Káčik Daniel, Tarjányi Norbert, Tarjányiová Gabriela, Hockicko Peter

Title: Research and parameter optimization of C-Si and poly-Si MIS solar panels of a larger extent and of a high efficiency (APVV-0577-07)
Coordinator: Jarmila Müllerová
Co-operators at the Dept: Peter Bury, Peter Hockicko

4.3 International Projects

4.3.10 COST Projects

Title: Optical fibres for new challenges facing the Information society (COST 299 FIDES)
National Coordinator: Káčik Daniel
Co-operators: Turek Ivan, Martinček Ivan, Pudiš Dušan, Tarjányi Norbert

4.3.11.Other International Projects

Title: Bilateral project between the Japan Society for the Support of Research and the Slovak Academy of Sciences
Coordinator: E. Pinčík
Co-operators at the Dept: Peter Bury, Peter Hockicko

Title: International Physics Masterclasses 2008 (The European Physical Society Project) (http://wyp.teilchenphysik.org/mc.htm)
National Coordinator : Melo Ivan
Sub-Coordinator : Tarjányiová Gabriela
Cooperators : Gintner Mikuláš, Trpišová Beáta, Kúdelčík Jozef

5 Co-operation

5.1 Co-operation Partners in Slovakia

- International Laser Center, Bratislava
- Polymer Institute, Slovak Academy of Science, Bratislava

- Institute of Physics, Slovak Academy of Science, Bratislava
- Dept. of Microelectronics, FEI STU Bratislava
- Matej Bel University, Banská Bystrica
- Virtual collaboration (19 Slovak academic institutions)
- University of P.J. Šafarik, Košice
- Departments of Faculty of Mathematics, Physics and Informatics, Comenius University in Bratislava

5.2 International co-operation Partners

- ATLAS collaboration, CERN, Switzerland
- University of Montreal, Canada
- University of J.W.Goethe, Frankfurt, Germany
- OFTC University of Sydney, Australia
- IPE CAS Prague, Czech Republic
- Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic
- Physical Institute, Czech Academy of Sciences, Prague, Czech Republic
- VŠB-TU Ostrava, Czech Republic
- ISIR, Osaka University, Japan
- Universita di Roma "La Sapienza", Italy
- Silesian University in Opava, Czech Republic

5.3 Visitors from Foreign Institutions

Name	*Institution*	*Length of stay*
Josef Juráň	Silesian University in Opava, Czech Republic	2 days
T. Matsumoto	ISIR, Osaka University, Japan	2x1 day

5.4 Visits of the Foreign Institutions

Name	*Institution*	*Length of stay*
Peter Bury	NIMS, Tsubuka,Japan	7 days
Mikuláš Gintner	CERN, Geneva, Switzerland	4+13 days
	Silesian University in Opava, Czech Republic	1+1 days
	High School, Pardubice, Czech Republic	1 day
	16th Conference of Czech and Slovak Physicists	5 days
Peter Hockicko	ISIR, Osaka University, Japan	15 days
	16th Conference of Czech and Slovak Physicists Hradec Králove, CZ	5 days
Daniel Káčik	Berlin, Germany	3 days
	Madeira, Portugal	5 days

Ivan Melo	University of J.W.Goethe, Frankfurt, Germany	7+4 days
	16th Conference of Czech and Slovak Physicists Hradec Králove, CZ	5 days
	CERN, Geneva, Switzerland	11 days

6. Other Activities

6.1 Conferences, Workshops, Symposiums Organized by the Department

- 14 th International Conference Applied Physics of Condensed Matter, APCOM 2008, Liptovský Ján, Hotel Bystrá, Jun 25 - 27, 2008 (members of the Organizing Committee - I. Jamnický, D. Pudiš, member of the Scientific Committee - P. Bury)

- 7th Int. Conference „ELEKTRO 2008“, May 20 – 21, 2008, Žilina (chairman of the Organizing Committee - P. Bury, members of the Organizing Committee - D. Pudiš, J. Kúdelčík, members of the Scientific Committee - I. Jamnický and I. Turek)

- 4th International particle Physics Masterclasses 2008, Žilinská univerzita v Žiline, Mar 6, 2008, (National coordinator - I. Melo, coordinator in Žilina - G. Tarjányiová, members of the Organizing Committee - M. Gintner, B. Trpišová, J. Kúdelčík, J. Remenec)

- Žilina Children's University, Jul 7 – 11, 2008, University of Žilina, (Coordinator – J. Michalík, members of the Organizing Committee – P. Hockicko, I. Turek, G. Tarjányiová; I. Jamnický, J. Kúdelčík, D. Pudiš, L. Vikisály, N. Tarjányi, J. Štelina, F. Černobila, J. Remenec

6.2 Seminars Organized by the Department

„Mass in Special Theory of Relativity“ (EVO)
Lecturer: Karel Šafařík (CERN)
Date: 19th March 2008

„Neutrino Oscillations: the Greatest Discovery in Particle Physics in Recent Years“ (Masterclasses MC 2008)
Lecturer: Tomáš Blažek (FMFI UK Bratislava)
Date: 27th March 2008

„Electron-positron annihilation to Four Pions“ (JSMF)
Lecturer: Josef Juráň (Slezská univerzita Opava, Czech republic)
Date: 7th October 2008

„Symmetry in Particle Physics“ (JSMF)
Lecturer: Mikuláš Gintner
Date: 1st April 2008

„CompHEP – Automatic Computations in Particle Physics“ (JSMF)
Lecturer: Ivan Melo
Date: 24th June 2008

„16th Polish-Slovak-Czech Optical Conference on Wave and Quantum Aspects of Contemporary Optics“ (JSMF)
Lecturers: Ivan Turek, Daniel Káčik
Date: 23rd September 2008

„LHC: from Dream to Reality“ (JSMF)
Lecturer: Ivan Melo
Date: 25th November 2008

„GaAs/AlGaAs Triple Quantum Well in Edge-emitting Laser Resolved by Method NOBIC“ (JSMF)
Lecturer: Ľuboš Šušlik
Date: 9th December 2008

„Žilina Children's University“ (JSMF)
Lecturers: Peter Hockicko, Gabriela Tarjányiová
Date: 16th December 2008

6.3. Invited Lectures

„Signatures of a new vector resonance from strongly interacting electroweak symmetry breaking at LHC“
Lecturer: Ivan Melo
Where/Date: Dept. of Nuclear Physics, FMFI UK Bratislava, Nuclear Seminar, 21st May 2008

„Quark/Hadron Phase Transition and Fluctuations of Rapidity Distributions“
Lecturer: Ivan Melo
Where/Date: Dept. of Theoretical Physics, FMFI UK Bratislava, Theory Seminar, 17th June 2008

„FeynCALC“
Lecturer: Ivan Melo
Where/Date: International Summer School in Particle Physics "Physics at one loop" organized by the FMFI UK Bratislava in Svit, 14th - 21st September 2008

„Accelerators and Detectors of Elementary Particles“
Lecturer: Ivan Melo
Where/Date: Slovak University of Agriculture, Nitra, Masterclasses 2008, 10th March 2008

„Higgsology for Beginners"
Lecturer: Mikuláš Gintner
Where/Date: Natural Sciences Colloquium, UMB Banská Bystrica, 22nd February 2008

„Standard Model of Elementary Particles“
Lecturer: Mikuláš Gintner
Where/Date: Slovak University of Agriculture, Nitra, Masterclasses 2008, 10th March 2008

“Higgsology in the Evening of LHC“
Lecturer: Mikuláš Gintner
Where/Date: Slezska univerzita Opava, Czech Republic, 17th April 2008

“*Superstar in Particle Physics or on One Useless Particle Everybody is Searching for“*
Lecturer: Mikuláš Gintner

Where/Date: International Summer School in Particle Physics "Physics at one loop" organized by the FMFI UK Bratislava in Svit, 14th - 21st September 2008

" *Photonic Crystals – Advanced Structures for New Optic and Optoelectronic Devices"*
Lecturer: Dušan Pudiš
Where/Date: Summer School of Vacuum Technology, Štrbské Pleso, 5th - 8th June 2008

6.4. Membership in International Institutions /Committees

Peter Bury

- chairman of the National IUPAP Committee (International Union for Pure and Applied Physics)
- Slovak representative at the 26th General Assembly of IUPAP, Tsukuba, JP

Ivan Turek

- member of the Committee which awards DrSc. Degree in Czech Republic
- regular member of SPIE (The International Society for Optical Engineering)

Július Štelina

- Regular Member of SPIE (The International Society for Optical Engineering)

Ivan Melo

- Slovak delegate in EPPOG (European Particle Physics Outreach Group)

Daniel Káčik:

- Regular Member of SPIE (The International Society for Optical Engineering)

Norbert Tarjányi:

- Regular Member of SPIE (The International Society for Optical Engineering)

6.5. Membership in National Institutions/Committees

Peter Bury

- member of the Slovak Physical Society Council
- member of the Slovak Acoustical Society Board
- member of the Joint Field Commission 11-22-9 Solid State Physics and Acoustics
- member of the Field Commission Solid State Physics and Acoustics at FEI STU Bratislava
- member of the Scientific Committees of: 16th Conference of Czech and Slovak Physicists, Hradec Králové, 14th Conference APCOM 2008, Liptovský Ján
- chairmen of the Organizing Committee of 7th Conference "ELEKTRO 2008"

Igor Jamnický

- member of the Organizing Committee of 14th Conference APCOM 2008, Liptovský Ján

1) member of the Scientific Committee of 7th Conference "ELEKTRO 2008"
2) member of the Working Group of AK (Slovak Accreditation Committee) for the research area 15 Electronics and Electric Power Engineering

Dušan Pudiš

- member of the Organizing Committee of 14th Conference APCOM 2008, Liptovský Ján
- member of the Organizing Committee of 7th Conference "ELEKTRO 2008"

Jozef Kúdelčík

- member of the Organizing Committee of 7th Conference "ELEKTRO 2008"

Ivan Turek

- member of SAIA Council
- Honorary member of JSMF

Ladislav Vikisály

- member of the Trade Union Council of the Educational System Employees
- member of the Association of the Trade Unions of Universities and PRO Slovakia
- member of the Editorial Board of Spravodajca ŽU (University of Žilina Newsletter)

Ivan Melo

- National coordinator of the 4th International Masterclasses in Particle Physics for high school students

6.6. Membership in University Boards

Peter Bury

- member of Communications journal editorial board
- member of editorial board EDIS ŽILINA
- member of Scientific Council EF ŽU
- member of Scientific Council FPV ŽU

Igor Jamnický

- chairman of Academic Senate of ŽU

Ivan Martinček

- member of Scientific Council EF, University of Žilina

Dušan Pudiš

- member of the Executive Council of the KAP club (alumni and friends of U of ŽILINA)
- Executive editor of AEEE (Advances in Electrical and Electronic Engineering)
- Secretary of Academic Senate of EF ŽU

Ladislav Vikisály

- Chairman of the Trade Union Council OZ PŠaV ŽU
- member of the Disciplinary Committee ŽU

7 Publications

Monographs

1 Bury, P., Hockicko, P.. *Transport and relaxation in ionic (phosphate) glasses,* chapter in book: J. Šesták et al. "Some Thermodynamic, structural and behavioral aspects of

solids accentuating amorphous materials (in press)

2 Editor Turek, I.: Žilina Children's University. Published by ŽU in Žilina as its 2600th publication, June 2008, p. 220, **ISBN 978-80-8070-868-9**

Current Content Journals

3 Passeri, D., Bettucci. A., Biagioni. A., Rossi, M., Alippi, A. Lucci, M., Davoli, I. and Berezina, S.: *Quantitative measurement of indentation hardness and modulus of compliant materials by atomic force microscopy,* Review of scientific instruments 79, 066105 (2008) **ISSN 0034-6748**, - Vol. 79, no. 6 (2008), p. 66105.

4 Martinček, I., Pudiš, D., Satka, A., Janigová, I., Csomorova, K., Černobila, F.: *Temperature effect on optical properties of the cuticle of Lucilia sericata,* Optik 119 (2008) 523-527, **ISSN 0030-4026**

5 Peterka, P., Kaňka, J., Honzátko, P., Káčik, D.: *Measurement of chromatic dispersion of microstructure optical fibers using interferometric method,* Optica Applicata, XXXVIII, No. 2, 2008, **ISSN 0078-5466**

6 Bury, P., Kobayashi, H., Takahashi, M., Imamura, K., Sidor, P., Černobila, F.: Acoustic spectroscopy and electrical charčacterization of SiO_2/Si structures with ultrathin SiO_2 layers formed with nitric acid oxidation, Central European Journal of Physics (in press)

Other Reviewed Foreign Journals

7 Bury P., Hockicko P. and Jamnický M.: *Transport and Relaxation Study of Ionic Phosphate Glasses*, Advanced Materials Research Vols. 39-40 (2008), pp. 111-116, **ISSN 1022-6680**

Other Reviewed Slovak Journals

8 Kúdelčík, J. *The resistance of breakdown in transformer oil,* Advances in Electrical and Electronic Engineering, Vol. 7/2008, p. 389-392 **ISSN 1336-1376**

9 Hockicko, P., Sidor, P., Bury, P., Kúdelčík, J., Jamnický, I.: *Modeling of A-DLTS spectra of MOS structures,* Advances in Electrical and Electronic Engineering, Vol. 7/2008, p. 373-376, **ISSN 1336-1376**

10 Káčik, D., Martinček, I., Pudiš, D., Tarjányi, N., Turek, I.: Photonic Crystals – Optical Structures for Advanced Technology, *Communications*, Vol. 10, No. 2, 2008 **ISSN 1335-4205**

Reviewed Conference Proceedings Abroad

11 Káčik, D., Turek, I., Tarjányi, N.: Measurement of modal dispersion by low coherence interferometer, Proc. SPIE Vol. 7141, 71411K (2008), DOI:10.1117/12.822401 **ISBN 9780819473837**

12 Gintner, M., Melo, I., Trpišová, B.: Probing the strong electroweak symmetry breaking in a model with a vector resonance, Proceedings of the 16th Conference of Czech and Slovak physicists, Sept. 2008, Hradec Králové, Czech Republic

Reviewed Conference Proceedings in Slovakia

13 Sidor, P., Bury, P., Hockicko, P.: *Determination of interface trap density in MOS structures using acouselectric response*, Proceedings of thr14th International Conference on Applied Physics of Condensed Matter (APCOM), June 2008, Liptovský Ján, pp.203-207, **ISBN 978-80-227-2902-4**

14 Bury, P.: *Acoustelectric Spectroscopy in Solid State Physics,* Proceedings of the 16th Conference of Slovak Physicists, 10.-13.9.2007, University of Žilina, pp. 5-7, **ISBN 978-80–969124-5-2**

15 Pudiš, D., Šušlik, Ľ., Martinček, I., Kováč, J., Kováč, J. jr., Jakabovič, J.: *Laser structure characterization using nobic*, Proceedings 14th International Conference on Applied

Physics of Condensed Matter (APCOM), June 2008, Liptovský Ján, pp.183-186, **ISBN 978-80-227-2902-4**

16 Martinček, I., Pudiš, D.: *Intermodal interference of the lowest-order modes in hollow core optical waveguide with dielectric walls,* Proceedings of the 14th International Conference on Applied Physics of Condensed Matter (APCOM), June 2008, Liptovský Ján, pp.133-137, **ISBN 978-80-227-2902-4**

17 Štelina, J., Musil, C.: *The effect of light polarization on the decay of the thermoparticle grating in magnetic fluid,* Proceedings of the 14th International Conference on Applied Physics of Condensed Matter (APCOM), June 2008, Liptovský Ján, pp.220-223, **ISBN 978-80-227-2902-4**

18 Turek, I., Tarjányi, N., Káčik, D.,: *Refractive index determination using a low-coherence interferometry,* Proceedings of the 14th International Conference on Applied Physics of Condensed Matter (APCOM), June 2008, Liptovský Ján, pp.228-231, **ISBN 978-80-227-2902-4**

19 Hockicko, P.: *Frequency analysis of sounds,* Proceedings of the 4th International Symposium Material-Acoustics-Place 2008, September 2008, Zvolen – Slovakia, pp. 53-56, **ISBN 978-80-228-1911-4**

20 Pudiš, D., Martinček, I., Tarjányi, N., Turek, I., Káčik, D.: *Photonic crystals – advanced structures for new optic and optoelectronic devices,* School of Vacuum Technology, June 2008, Štrbské Pleso – Slovakia, pp. 88-93, **ISBN 978-80-969435-4-8**

21 Pudiš, D.: *Periodic structures prepared by two-beam interference method for application in optoelectronic devices,* Vacuum technologies – new trends in research and aplications, November 2007, Štrbské Pleso – Slovakia, pp.92-95, **ISBN 978-80-969435-3-1**

22 Martinček, I., Pudiš, D.: *Theoretical study of temperature sensor based on optical fiber with liquid core,* Unconventional technologies 2008, June 2008, Strečno – Slovakia, **abstract**, pp.15, **ISBN 978-80-8070-859-7**

23 Pudiš, D., Šušlík, Ľ., Martinček, I., Kováč, J., Kováč, J. jr., V. Gottschalch:*Edge-emitting laser diode with GaAs triple QW in active region investigated by NOBIC,* in IEEE Proc. of ASDAM 2008, Slovakia, pp. 231-234, **ISBN 978-1-4244-2325-5**

24 Martinček, I., Pudiš, D.: Intermodal interference of the lowest-order modes in hollow core optical waveguide with dielectric walls, Unconventional technologies 2008, June 2008, Strečno – Slovakia, **ISBN 978-80-8070-860-3**

Other Publications

25 Hockicko, P.: *Interactive solution of physics problems using web applications,* Proceedings of eLearn 2008, p. 66-71, **ISBN 978-80-8070-838-2**

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