

DEPARTMENT OF PHYSICS

1 General Information

Advances in technical fields have always relied to a large degree on know-how and methods originating in Physics. Many phenomena and principles studied in Physics today become the basis of applications tomorrow, e.g. in quantum information science. It is therefore very important to provide the students of the technical fields with good basics of Mathematics and Physics.

The Department of Physics teaches General Physics to students of all faculties of the University and Advanced Physics for some special courses. The Department provides the students with the basic understanding of physics, trains them in applying the principles of physics to various engineering problems as well as gives the students a review of modern physics.

The Department is divided into two sections according to their research and educational specialisation. The staff consists of 1 Professor, 6 Associate Professors, 13 senior lecturers, 4 internal Ph.D. students, 4 research fellows and 3 technical/administrative workers who support the research and teaching activities of the Department.

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. Acoustic Group exploits a wide range of acoustic methods and techniques as well as acoustoelectric and acoustooptic phenomena to investigate semiconductors, metals, ferroelectric materials and magnetic liquids. New acoustic techniques are also developed.

Optical group studies physical properties of the conventional telecommunications optic fibres and special fibres such as capillary fibres and photonic fibres. The group has extended its activities to include technologies of preparation and analysis of photonic structures for integrated optics and optoelectronics. The newest results are from the area of optofluidic waveguides where sensors and optic elements are being developed. Self-diffraction of light in magnetic fluids and photorefractive phenomenon in selected condensed matter materials are also studied within the group.

The theoretical high-energy physics group works in the area of strong electroweak symmetry breaking and quark-gluon plasma.

The research groups of the Department are also well known abroad. The scientific activities of the Department are regularly presented at the international conferences and are published in significant physical journals. The members of the staff also participate in various educational and scientific activities outside the Department and the University, especially as members of various scientific boards at both domestic and international institutions. There are also many activities focused on further education of high school and elementary school Physics teachers and their pupils and students, which is an important outreach work .

2 Staff of the Department

Head of the Department	: Peter Bury
Vice-head of the Department	: Dušan Pudiš
Secretary for Education	: Gabriela Tarjániová
Secretary for Research	: Daniel Káčik
Administrative Support	: Anna Chasníková
Technical Support	: Nadežda Remencová, František Černobila, Juraj Remenec (1/3)

2.1 Sections of the Department

2.1.1 Section of General Physics

Head of the Section	: Ivan Melo
Research Fellows	: Mikuláš Gintner, Ivan Melo
Senior Lecturers (with PhD)	: Beáta Trpišová, Gabriela Tarjányiová
Senior Lecturers (without PhD)	: Pavel Virdzek, Ivan Bellan, Juliana Knociková (until Jun 30, 2011), Ladislav Vikisály

2.1.2. Section of Applied Physics

Head of the Section	: Dušan Pudiš
Professor	: Peter Bury
Associate Professors	: Daniel Káčik, Ivan Martinček, Dušan Pudiš, Ctibor Musil (1/2), Sofia Slabeyciusová, Július Štelina (1/2)
Research Fellows	: Jozef Kúdelčík, Igor Jamnický
Senior Lecturers (with PhD)	: Jana Ďurišová (since 1.9.2011), Peter Hockicko, Norbert Tarjányi, Marián Janek, Peter Sidor, Ľuboš Šušlik (since 1.10.2011), Peter Tvarožek (1.10.-30.11.2011)

2.1.3 Postgraduate Students

Internal	: Jozef Drga, Ivana Kubicová, Ľuboš Šušlik (until 30.9.2011), Peter Tvarožek (until 30.9.2011)
External	: Juliana Knociková (until Jun 30, 2011), Pavel Virdzek (since 1.9.2011)

3 Teaching

3.1 Courses in Bachelor and Master Degree Programmes

Code	Title	Lessons	Seminars	Lab. exercises	Semester	Hours/week	Teachers
<i>Courses for the Faculty of Electrical Engineering</i>							
31110	Introduction to Physics	1	1	2	0		Káčik
31201	Physics I	2	3	2	1		Bury, Pudiš, Káčik
31303	Physics II	3	3	2	1		Bury, Pudiš
31450	Basics of Optoelectronics	4	2	1	0		Tarjányi
32109	Physics III	1	2	1	0		Pudiš
32315	Integrated Optics	3	2	2	0		Tarjányi
32321	Measurement in Telecommunications 4	3	0	0	2		Káčik
<i>Courses of the Faculty of Mechanical Engineering</i>							
2B018	Physics I	2	3	2	0		Martinček, Slabeyciusová
2B033	Physics II	3	2	0	2		Martinček,

2B018 Physics I (External studies)	2	20 - 6 - 0	Slabeyciusová
2B033 Physics II (External studies)	3	20 - 6 - 0	Slabeyciusová

Courses of the Faculty of Civil Engineering

4B113 Physics	1	2 - 1 - 1	Štelina, Kúdelčík
4B117 Seminar on Physics	1	0 - 2 - 0	Kúdelčík
4B218 Physics - optics	2	2 - 1 - 0	Štelina
4B202 Physics I	2	2 - 1 - 1	Hockicko, Jamnický
4B211 Chapters of Physics	2	0 - 2 - 0	Hockicko
4E203 Physics – (External studies)	2	12 - 8 - 0	Tarjányi
4E208 Chapters of Physics - (External studies)	2	10 - 0 - 0	Tarjányi

Courses of the Faculty of Operation and Economics of Transport and Communication

11P101 Physics	1	2 - 1 - 1	Jamnický, Hockicko
11P102 Physics	1	2 - 1 - 1	Hockicko
12P101 Physics (External studies)	1	8 - 4 - 4	Hockicko
12P102 Physics (External studies)	1	12 - 0 - 4	Hockicko
12P103 Physics (External studies)	1	16 - 0 - 0	Jamnický

Courses of the Faculty of Management Science and Informatics

5BF005 Fundamentals of Physics	1	3 - 1 - 1	Martinček
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Courses of the Faculty of Special Engineering

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

Courses of the Faculty of Humanities

8BT133 Planning and Evaluation of Experiment	4	2 - 1 - 1	Jamnický
8BT148 Computer Physics I	5	0 - 2 - 2	Kúdelčík
8BT151 Computer Physics II	6	1 - 0 - 2	Kúdelčík
8BT113 Physics I	2	3 - 2 - 1	Bury
8BT248 Physical acoustics	2	2 - 1 - 0	Bury
8BT129 Physics II	3	3 - 2 - 1	Bury
8BT208 Condensed matter Physics	1	3 - 2 - 0	Pudiš

3.2. Courses in doctoral studiesFaculty of Civil Engineering

4D102 Applied Physics	1d	2 - 0 - 0	Bury
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4 Educational, Research and Scientific Projects

4.1 National Projects

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

Title: Design, fabrication and diagnostics of the microstructural optic fibres for sensoric and photonic applications (Grant VEGA 1/0683/10)

Coordinator: Ivan Martinček
Sub-Coordinator: Dušan Pudiš
Co-operators: Daniel Káčik, Norbert Tarjányi, Peter Tvarožek, Ľuboš Šušlik
Sub-Coordinator for SAS: Emil Pinčík
Co-operators: Róbert Brunner, Jaroslav Rusnák

Title: Influence of various nanoparticles on structural transitions in ferromagnetics and on dielectric properties of magnetic fluids (VEGA 2/0077/09).

Coordinator: P. Kopčanský, IEP SAS Košice
Sub-Coordinator: Peter Bury
Co-operators: Jozef Kúdelčík

Title: NSOM lithography and interference lithography as progressive methods for preparation of photonic structures and optoelectronic elements with photonic structure (VEGA 1/1058/11).

Coordinator: Dušan Pudiš
Sub-Coordinator: Ivan Martinček
Co-operators: Daniel Káčik, Norbert Tarjányi, S. Slabeyciusová, Ľuboš Šušlik, Ivana Kubicová, Peter Tvarožek.

4.1.2 Cultural and Educational Grant Agency KEGA

Title: Development of Core Competences of Technical University Students in Physics Education (Grant KEGA 075-008ŽU-4/2010)

Coordinator: Peter Hockicko
Co-operators: Peter Sidor, Dušan Pudiš, Gabriela Tarjányiová, Peter Bury, Igor Jamnický, Jozef Kúdelčík

Title: Development of Scientific Literacy in University Preparation of Students of Pre-school and Elementary School Pedagogy (Grant KEGA 002KU-4/2011)

Coordinator: Ivana Rochovská, KU Ružomberok
Co-operators: Peter Hockicko

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

Title: Revealing microworld mysteries through experimental data analysis (APVV LPP 0059-09)

Coordinator: Alexander Dirner (UPJŠ Košice)
Sub-Coordinator: Ivan Melo
Co-operators: Mikuláš Gintner, Gabriela Tarjányiová, Beáta Trpišová, Jozef Kúdelčík, Juraj Remenec, Ivana Kubicová, Marián Janek

*Title: Ultrarelativistic Heavy-ion Collisions 2010-2011
(Grant APVV SK-PL-0021-09)*

Coordinator: Boris Tomasik, UMB Banska Bystrica
Co-operator: Ivan Melo

Title: Scouting and education of talents in physics by physics competitions on the elementary and secondary schools (Grant APVV LPP-0067-07)

Coordinator: Ivo Čáp

Co-operator: Jozef Kúdelčík

4.1.4 Projects of European Structural Funds

*Title: Center of excellence for power electronics and their material components
(26220120003)*

Coordinator Activities 4.1: Peter Bury
Co-operators: Ivan Bellan, Peter Hockicko, Igor Jamnický, Daniel Káčik,
Jozef Kúdelčík, Ivan Martinček, Dušan Pudiš,
Norbert Tarjányi, František Černobila

*Title: Center of excellence for power electronics and their material components
(26220120046)*

Coordinator Activities 2.1: Peter Bury
Co-operators: Ivan Bellan, Peter Hockicko, Igor Jamnický, Daniel Káčik, Jozef
Kúdelčík, Ivan Martinček, Dušan Pudiš, Norbert Tarjányi,
František Černobila

Title: Investigation of very economic components of electric driving systems of railway vehicles and vehicles used for public transport (26220220078)

Co-operator: Igor Jamnický

4.2 International Projects

4.2.1 COST Projects

Title: Novel and Reliable Optical Fibre Sensor Systems for Future Security and Safety Applications (OFSeSa) (Action TD1001)

National Coordinator: Daniel Káčik
Co-operators: Martinček Ivan, Pudiš Dušan, Tarjányi Norbert, Peter Tvarožek,
Šušlik Ľuboš, Kubicová Ivana

4.2.2 Other International Projects

Title: International Physics Masterclasses 2011 (European Physical Society and IPPOG project) <http://wyp.teilchenphysik.org/mc.htm>

National Coordinator : Ivan Melo
Sub-Coordinator: Gabriela Tarjányiová

Co-operators : Mikuláš Gintner, Beáta Trpišová, Jozef Kúdelčík, G. Tarjányiová, Remenec, Ivana Kubicová, Marián Janek

5 Co-operation

5.1 Co-operation Partners in Slovakia

- International Laser Center, Bratislava
- Institute of Electrical Engineering, Slovak Academy of Sciences
- Institute of Physics, Slovak Academy of Sciences, Bratislava
- Dept. of Microelectronics, FEI STU Bratislava
- Institute of Experimental Physics, Slovak Academy of Sciences, Košice,
- Matej Bel University, Banská Bystrica
- KEF FMFI UK Bratislava
- University of P.J. Šafarik, Košice
- Institute of Experimental and Applied Physics, Czech Technical University in Prague

5.2 International co-operation Partners

- Université de Mons - Faculty Polytechnique
- Helsinki University of Technology, Finland
- ISIR, Osaka University, Japan
- ATLAS collaboration, CERN, Switzerland
- University of Frankfurt, Germany
- Aalto University, Finland
- IPHT Jena, Germany
- UFE ČAV, Prague, CZ
- OFTC University of Sydney, Australia
- VŠB-Technical University of Ostrava, CZ
- Joint Institute of Nuclear Research, Dubna, Russia
- TU Ilmenau, Germany
- Instituto do Ceramica y Vidrio (CSIC), Madrid, Spain
- Institute of Technical and Experimental Physics, ÚTEF ČVUT Prague, CZ

5.3 Visitors to the Department

<i>Name</i>	<i>Institution</i>	<i>Length of stay</i>
Josef Juráň	ÚTEF ČVUT Prague, CZ	3 months
Irena Vlachynská	Západočeská univerzita Plzeň , CZ	1 day
Hikaru Kobayashi	Osaka University, Japan	1 day
Paweł Zhukowski	Technical University Lublin, PL	2 days

5.4 Visits to Foreign Institutions

<i>Name</i>	<i>Institution</i>	<i>Length of stay</i>
Mikuláš Gintner	ÚTEF ČVUT Prague, CZ	22 days
Peter Hockicko	University of Jyväskylä, Finland	5 days
	Hochschule Mannheim, Germany	3 days
	Jagiellonian University Krakow, Poland	2 days
Daniel Káčik	University of Limerick, Ireland	2 days
	IPHT Jena Germany	2 days
Ivan Melo	Cern, Geneva	5 days
	Vienna university, Austria	2 days

6 Other Activities

6.1 Conferences, Workshops, Symposiums Organized by the Department

- 17th International Conference Applied Physics of Condensed Matter, APCOM 2011, Vysoké Tatry, Nový Smokovec, Jun 22 – 24, 2011 (Chair of the Scientific Committee: Peter Bury, Members of the Organizing Committee: Dušan Pudiš (chair), Igor Jamnický, Ivan Martinček, Ivana Kubicová, Ľuboš Šušlik)
- 17th Conference of Slovak and Czech Physicists, Žilina, Sep 5 - 8, 2011 (member of the Scientific Committee: Peter Bury, Members of the Organizing Committee: Peter Bury, Peter Hockicko, Jozef Kúdelčík, Marián Janek, Daniel Káčik)
- National High School Competition Cascade, <http://fyzika.uniza.sk/cascade/>, Ivan Melo, Mikuláš Gintner, Gabriela Tarjányiová
- IPPOG (International Particle Physics Outreach Group) meeting, Košice Apr 14 -16, 2011, Members of the Organizing Committee: Ivan Melo (chair), <http://hep.upjs.sk/EPPOG/>
- Masterclasses Workshop Košice (LHC data released for educational purposes for the first time) – live interview for Slovak Radio1. Organizers and lecturers: Ivan Melo, M. Gintner, Feb 15 -16, 2011, UPJŠ Košice.
- 7th International particle Physics Masterclasses 2011, Žilinská univerzita in Žilina, Mar 17, 2011 (Gabriela Tarjányiová, – main coordinator, Ivan Melo, – national coordinator, Mikuláš Gintner, Beáta Trpišová, Jozef Kúdelčík, Ivana Kubicová, Marián Janek, Juraj Remenec
- Lecture Slovaks at CERN 2011, Žilinská univerzita, Oct 12, 2011, young Slovak employees from CERN presented CERN as attractive employer for Slovak technical students and engineers. Organizer: Ivan Melo.

6.2 Seminars Organized by the Department

[1] „Measurements of superluminal neutrinos in experiment OPERA“

Lecturer: Mikuláš Gintner, KF ŽU Žilina
Date: 25. 3. 2010

[2] „Physical analysis of motions using video recordings“

Lecturer: Peter Hockicko, KF ŽU Žilina
Date: 25.1.2011

[3] „Do not be afraid of Linux“

Lecturer: Ivan Bellan, KF EF ŽU Žilina
Date: 1. 2. 2011

[4] „Alternative laboratory exercises“

Lecturer: Ivana Kubicová, Mikuláš Gintner, Dušan Pudiš, KF EF ŽU
Date: 8. 2. 2011

[5] „Fermi problems“

Lecturer: Norbert Tarjányi, KF EF ŽU Žilina
Date: 22. 2. 2011

[6] „Study of insulating properties of gases and fluids for electric applications“

Lecturer: Jozef Kúdelčík, KF EF ŽU Žilina
Date: 10. 5. 2011

[7] „Use of Interference for investigation of optic fibres properties“

Lecturer: Daniel Káčik, KF EF ŽU Žilina
Date: 10. 5. 2011

[8] „Top-BESS model and its phenomenology“

Lecturer: Josef Juráň, ÚTEF ČVUT , Prague, CZ
Date: 24. 5. 2011

[9] „Masterclasses seminar Extrasolar Planets“

Lecturer: Peter Vereš, FMFI UK Bratislava
Date: 6.4.2011

6.3 Invited Lectures/Papers

Masterclasses 2011: Z boson

Lecturer: Mikuláš Gintner, KF EF ŽU Žilina
Where/date: UPJŠ Košice, 16.2.2011

Top-BESS model and its phenomenology

Lecturer: Mikuláš Gintner, KF EF ŽU Žilina
Where/date: Theoretical Physics Workshop and Summer School, Svit, 4.-11.9.2011

Top-BESS model and its phenomenology

Lecturer: Mikuláš Gintner, KF EF ŽU Žilina
Where/date: ÚTEF ČVUT Prague, CZ, September 2011

Top-BESS model and its phenomenology

Lecturer: Mikuláš Gintner, KF EF ŽU Žilina
Josef Juráň, ČVUT Prague, CZ
Ivan Melo, KF EF ŽU Žilina
Where/date: FMFI UK Bratislava, 15. 11. 2011

Physical view of the world after 20 months with LHC

Lecturer: Mikuláš Gintner, KF EF ŽU Žilina
Where/date: Matej Bel University, Banská Bystrica, 6.12.2011

High-frequency acoustical spectroscopy of prospective materials for electrotechnical devices

Lecturer: Peter Hockicko, KF EF ŽU Žilina
Where/date: Technical University Zvolen, 13.9.2011

History and present-day astronomy in Trenčín

Lecturer: Jozef Drga, KF EF ŽU Žilina
Where/date: Public Library of M. Rešetka, Trenčín

RECFA Meeting (Restricted European Committee for Future Accelerators+Director General CERN, R. Heuer)

Lecturer: Ivan Melo, KF EF ŽU Žilina (Outreach activities in Slovakia)

Where/date: Košice, 27.5. 2011

W boson measurement with ATLAS data

Lecturer: Ivan Melo

Where/date: *Theoretical Physics Workshop and Summer School 4 – 11 September 2011, Svit, Slovakia, 9.9.2011*

6.4 Membership in International Institutions /Committees

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| Ivan Melo | - Slovak delegate in IPPOG (International Particle Physics Outreach Group)
- Slovak delegate in EPPCN (European Particle Physics Communication Network) |
| Peter Bury | - chairman of the National IUPAP Committee (International Union for Pure and Applied Physics) |
| Peter Hockicko | - Member of SEFI (European Society for Engineering Education), PWG (Working Group on Physics), Slovak delegate
- member of the Organizing Committee of PTEE 2011 7. International Conference on Physics Teaching in Engineering Education |
| Daniel Káčik | - national coordinator COST TD 1001
- member of the local Organizing Committee of the Conference of the Slovak and Czech Physicists |

6.5 Membership in National Institutions/Committees

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|-------------------|--|
| Igor Jamnický | - member of the Working Group of AK (Slovak Accreditation Committee) for the research area 15 Electronics and Electric Power Engineering
- member of the Organizing Committee of 17 th APCOM conference 2011 |
| Peter Bury | - member of the Slovak Physical Society Council
- chair of the Scientific Committee of 17 th Conference APCOM 2011
- 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 Committee and the Chair of the Organizing Committee of the 17 th Conference of Slovak and Czech Physicists, Žilina, 2011 |
| Ladislav Vikisály | - member of the Trade Union Council of the Educational System Employees Slovakia
- member of the Association of the Trade Unions of Universities and PRO Slovakia |
| Dušan Pudiš | - Chair of the Organizing Committee of 17 th Conf. APCOM 2011
- member of COST TD 1001 |
| Ivan Melo | - National coordinator of the 6 th International Masterclasses in Particle Physics for high school students |

- Peter Hockicko - member of the Organizing Committee of the 17th Conference of Slovak and Czech Physicists, Žilina, 2011
 - member of the Scientific Committee of the 6th International Conference Material Acoustics Place 2011, Zvolen
- Marián Janek - member of the Organizing Committee of the 17th Conference of Slovak and Czech Physicists, Žilina, 2011

6.6 Membership in University Boards

- Ivan Martinček - member of the Commission for the field 5.2.12 Electrotechnologies and materials
- Dušan Pudiš - member of the Commission for the field 5.2.12 Electrotechnologies and materials
 - member of Scientific Council of EF ŽU
 - secretary of the Academic Senate of EF ŽU
 - member of the Executive Council of the KAP club (alumni and friends of University of Žilina)
- Igor Jamnický - member of the Commission for the field 5.2.12 Electrotechnologies and materials
 - member of Scientific Council of EF ŽU
 - member of Scientific Council of University of Žilina
 - chairman of Academic Senate of ŽU
- Peter Bury - chair of the Commission for the field 5.2.12 Electrotechnologies and materials, EF ŽU
 - member of Academic Senate of EF ŽU
 - member of the Communications journal editorial board
 - member of editorial board ŽU, EDIS ŽILINA
 - member of Scientific Council EF ŽU
- Ladislav Vikisály - chair of the Trade Unions, OZ PŠaV ŽU
 - member of the Disciplinary committee, ŽU
 - member of tender committees at the rectorate of ŽU

7 Publications

Lecture Notes

- [1] KÚDELČÍK, J., HOCKICKO, P.: *Fundamentals of Physics*, 1st edition Žilina, Žilinská univerzita, (2011), 272 p., ISBN 978-80-554-0341-0
- [2] TARJÁNYI, N., KÁČIK, D.: *Fundamentals of optoelectronics*, 1st edition – Žilina, Žilinská univerzita, (2011), CD-ROM 2011. 252 p., ISBN 978-80-554-0326-7

Current Content Journals

- [3] KNOCIKOVÁ, J.: *Time-Frequency Energy Distribution of Phrenic Nerve Discharges During Aspiration Reflex, Cough and Quiet Inspiration*, Computer Methods and Programs in Biomedicine, Vol. 102, No.1 (2011), p. 81-90, ISSN 0169-2607
- [4] PUDIŠ, D., ŠUŠLIK, L., ŠKRINIAROVÁ, J., KOVÁČ, J., MARTINČEK, I., KOVÁČ, J. JR., HAŠČÍK, Š., KUBICOVÁ, I., NOVÁK, J., VESELY, M.: *Light extraction from a light emitting diode with photonic structure in the surface layer investigated by NSOM*, Optics&Laser Technology, Elsevier Ltd. (JOLT), Vol.43, No. 5, (2011) 917-921, ISSN 0030-3992

- [5] MARTINČEK, I., PUDIŠ, D., KÁČIK, D., SCHUSTER, K.: *Investigation of intermodal interference of LP_{01} and LP_{11} modes in the liquid-core optical fiber for temperature measurements*, *Optik* Vol.122, iss. 8, (2011) 707-710, ISSN 0030-4026
- [6] PIYADIN, S.M., GURCHIN, Y., KURLKIN, P. K., TEREKHIN, A.A., GLAGOLEV, V.V., ISUPOV, A.Y., ITOH, K., JANEK, M., KARACHUK, J. T.: *Experimets on the study of deuteron-proton interaction at internal target at nuslotron*, *International Journal of Modern Physicsts A*, Vol. 26, nos. 3-4, (2011), p. 683-685, ISSN 0217-751X
- [7] GINTNER, M., JURÁŇ, J., MELO, I.: *Top-BESS model and its phenomenology*, *Physical Review D*, Vol. 84, no.3, (2011), ISSN 056-2821, p. 035013-1-030013-22
- [8] MEREŠ, M., MELO, I., TOMÁŠIK, B., BALEK, V., ČERNÝ, V.: *Generating heavy particles with energy and momentum conservation*, *Computer Physics Communications* Vol. 182, no. 12 (2011), pp. 2561-2566, ISSN 0010-4655
- [9] TOMÁŠIK, B., MELO, I., GINTNER, M.: *Non-equilibrium hadronisation and event-by-event fluctuations of rapidity distributions*, *Indian J. Phys.* Vol. 85, No. 7, (2011) pp. 1097-1101, ISSN 0973-1458
- [10] MARTINČEK, I., PUDIŠ, D.: *Variable Liquid-Core Fiber Optical Attenuator Based on Thermo-Optical Effect*, *Journal of lightwave technology*, Vol. 29, No. 17, sept. 1, (2011) pp. 2647-2650, ISSN 0733-8724
- [11] JANEK, M. at all.: *The 270MeV deuteron beam polarimeter at the Nuclotron Internal Target Station*, *Nuclear Instruments and Methods in Physics Research A.*, Vol. 642, No. 1, (2011) p. 45-51, ISSN 0168-9002
- [12] HOCKICKO, P., BURY, P., SIDOR, P., KOBAYASHI, H., TAKAHASHI, M., YANASE, T.: *Analysis of A-DLTS spectra of MOS structures with thin NAOS SiO₂ layers*, *Central European Journal of Physics.* - ISSN 1895-1082. - Vol. 9, no. 1 (2011), p. 242-249

Patents

- [13] TUREK I., KÁČIK D.: Patent document number 287543 – A method to measure polarization dispersion of optic fibres using low frequency interference

Journals registered in Thomson Scientific Master Journal List or SCOPUS

- [13] JANEK, M. at all: *ΔE -E Detector for Proton Registration Nonmesonic Deuteron Breakup at the Nuclotron Internal Target*, *Physics of Particles and Nuclei Letters*, Vol. 8, No. 2, pp. 107-113, (2011) ISSN 1547-4771
- [14] KÚDELČÍK, J., GUTTEN, M., VIRDZEK, P.: *Measurement of electrical parameters of breakdown in transformer oil*, *Przeglad elektrotechniczny*, Vol. 8, No. 6 (2011), pp. 159-162 ISSN 0033-2097
- [15] JANEK, M. at all.: *Recent results with polarized deuterons and polarimetry at Nuclotron-NICA*, *Journal of Physics*, Vol. 295 (2011), art. No. 012325[8]s., ISSN 1742-6588

Other journals

- [16] TVAROŽEK, P., KÁČIK, D., MARTINČEK, I.: *Physical principles of novel light sources technology*, *TECHNOLÓG – journal for theory and practice of mechanical technologies*, vol. 3, No. 1, p. 23-28, (2011), ISSN 1337-8996

- [17] KÚDELČÍK, J., VIRDZEK, P., TRPIŠOVÁ, B., KÚDELČÍKOVÁ, M.: *Use of computers in laboratory exercises*, 7th international conference on Mathematics and Physics at technical universities, Proceedings part 2 – Physics, Brno 2011, pp. 63-71, ISSN 978-80-7231-816-2
- [18] MARTINČEK, I., PUDIŠ, D., RUSNÁK, J., KUBICOVÁ, I.: *Technology of preparation of microstructure optic fibres from melted quartz*, TECHNOLÓG– journal for theory and practice of mechanical technologies, NT 2011, p. 91-94, ISSN 1337-8996
- [19] KUBICOVÁ, I., PUDIŠ, D., ŠUŠLIK, Ľ., ŠKRINIAROVÁ, J.: *Capabilities of NSOM lithography using metal-coated fiber tip*, TECHNOLÓG– journal for theory and practice of mechanical technologies, NT 2011, p. 75-78, ISSN 1337-8996
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