

DEPARTMENT OF PHYSICS

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I. STAFF**Associate Professors**

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Technical Staff

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II. EQUIPMENT**II.1 Teaching and Research Laboratories**

Basic Physics Laboratory
Thermo-Physical Properties Laboratory

II.2 Special Measuring Instruments and Computers

HP 3497 - Data Acquisition/Control Unit, set of devices for measuring current, voltage, frequency, strain, etc.
HP 3421A -Data Acquisition/Control Unit
Isomet 2104 –Applied Precision

III. TEACHING

III.1 Graduate Study

Subject	Semester	Hours Per Week		Lecturer
		Lectures	Seminars	
Physics I	1	2	2	I. Baník
Physics I	2	2	2	I. Janetka
Physics I	2	2	2	J. Veselský
Physics I	2	3	2	J. Lukovičová
Physics II	3	2	2	J. Lukovičová
Physics II	3	2	2	M. Nevedelová
Physics II	3	2	2	J. Veselský
Physics II	3	2	2	I. Baník
Physics III	7	2	2	J. Veselský

III.2 Postgraduate Study

Subject	Semester	Hours Per Semester	Lecturer
Physical Principles of Measurements	1	30	I. Baník J. Veselský
Special Aspects of Physics	1	28	I. Baník J. Lukovičová J. Veselský
Modeling of Transport Phenomena	1	28	J. Lukovičová
Physical Fields, Waves	1	28	J. Veselský

IV. RESEARCH TARGETS

- Measuring the Thermal Properties of Materials and Constructions
- Mathematical Modeling of Heat and Mass Transport in Materials and Constructions
- Inverse Problems in Heat and Mass Transport
- Teaching Physics

V. RESEARCH PROJECTS

- Complex Thermo - Humidity Behavior of Buildings. APVT, Grant No. 51- 030704 (Veselský, J.)
- Thermal and Humidity Parameters of Granular and Pore Materials. VEGA, Grant No. 1/1134/04 (Lukovičová J.)
- Untraditional Physics on the Web, Grant No. 3/1187/03 (Baník I.)

VI. COOPERATION

VI.1 Cooperation in Slovakia

1. Faculty of Electrical Engineering and Information Technology, STU, Bratislava
2. Faculty of Chemical Technology, STU, Bratislava
3. Matej Bel University, Banská Bystrica
4. Faculty of Mathematics and Physics, UK, Bratislava
5. Methodical Centre, Bratislava
6. Methodical Centre, Banská Bystrica
7. SAV – Institute of Measurement Science, Bratislava
8. Constantine the Philosopher University, Nitra

VI.2 International cooperation

1. Faculty of Civil Engineering, Czech Technical University, Prague, Czech Republic
2. Faculty of Civil Engineering, Technical University, Brno, Czech Republic
3. University of Technology, Esslingen, Germany
4. Politechnika Opole, Poland

VI.2.1 Visitors to the Department

Prof. J. Toman, CTU Prague, Czech Republic
Assoc. Prof. P. Schauer, TU Brno, Czech Republic
Prof. J. Wyrwal, Politechnika Opole, Poland
Assoc. Prof. Andrzej Wawrzynek, MSc, PhD, DSc., Silesian University of Technology, Gliwice, Poland
Ing. L. Pazdera, TU Brno, Czech Republic
Assoc. Prof. RNDr. Z. Chobola, TU Brno, Czech Republic

VI.2.2 Visits of Staff Members and Postgraduate Students to Foreign Institutions

Assoc. Prof. RNDr. I. Baník, PhD, KDF MFF Prague, Czech Republic
Assoc. Prof. J. Lukovičová, CTU Prague, Czech Republic

VIII. OTHER ACTIVITIES

VIII.3 Conferences and Workshops Organised

- 7.9.2004 - Conference on Research and Educational Activities of Physical Departments of Technical Universities in the Slovak Republic. Bratislava: Slovak University of Technology, Faculty of Civil Engineering
24.11.2004 - Teleconference – conference of doctoral students

IX. PUBLICATIONS

IX.2. Books and textbooks

- [1] BANÍK, I., et al: Physics Textbook for Gymnasiums, Part I. SPN Bratislava 2004, ISBN 80-10-00530-4.
- [2] VESELSKÝ, J., et al: Physics. Instructions for Laboratory Work. Bratislava: ES STU, 2004.

IX.3. Conferences

- [1] VESELSKÝ, J.: Thermal Conductivity of Soil Depending on Water Content. Semi-Empirical Model. In: Research Activities of Physics Departments of Civil Engineering Faculties in the Czech and Slovak Republics 2004. Brno: BUT Brno, 2004, pp. 187-191. ISBN 80-7204-353-6.
- [2] BANÍK, I.: On the Question of Optical Absorption and Photoluminescence in Amorphous Semiconductors. In: Proceedings of International Workshop on Research Activities of Physics Departments of Civil Engineering Faculties in the Czech and Slovak Republics, Brno-Cihháj 14.-16. September 2004, AN CERM Brno 2004, pp. 9-14. ISBN 80-7204-353-6.
- [3] BANÍK, I., BANÍK, R.: Physics and Electronics in a Non – Traditional Way. In: Trends of Technical Education – Technical and Information Bringing-up, Olomouc, June 22-23, 2004, Prague Votobia, pp. 374 – 379. ISBN 80-7220-182-4.
- [4] BANÍK, I., BANÍK, R.: Some Simple Experiments. In: "...Let's Make Physics Interesting for Students...", Vlachovice 8-11-October 2003 (published in 2004), UP Olomouc, pp. 73-81. ISBN 80-244-0742-8.
- [5] BANÍK, I., BANÍK, R.: The Picture in the Teaching of Physics. In: "...Let's Make Physics Interesting for Students..." Vlachovice 8-11. October 2003 (published in 2004), UP Olomouc, pp. 34-41.
- [6] BANÍK, I., BANÍK, R.: Experiments for Subjects of Surface Phenomena. In: Proceedings of Ideas of Teachers in Physics IX, 25-27. August 2004, Brno 2004, Paido pp. 5-9, ISBN 80-7316-084-0.
- [7] BANÍK, I., MACHOVIČ, L.: Miracles of Weighting. In: Proceedings of Ideas of Teachers in Physics IX, 25-27. Brno 2004, Paido.
- [8] BANÍK, I., ŠPULÁK, F.: Effective Method of Didactic Education of Physics Teachers. In: Proceedings of Ideas of Teachers in Physics 8, 27-29. August 2003, Č. Budejovice, JUČ České Budějovice 2003 (published in 2004), pp. 196-197. ISBN 80-7040-647-X.
- [9] NEVEDELOVÁ, M.: Developing Creativity in Physics in a Visual Form. In: Proceedings of Trends in Technical Education – Technical and Information Bringing-up. Olomouc 22.-23.6.2004, Prague Votobia, pp. 94 – 97. ISBN 80-7220-182-4.
- [10] NEVEDELOVÁ, M.: Motivational Tasks in a Visual Form. In: Proceedings of "...Let's Make Physics Interesting for Students..." Vlachovice 2003, UP Olomouc, pp. 49-54. ISBN 80-244-0742-8.
- [11] NEVEDELOVÁ, M.: Physics in Magic. In: Proceedings of Ideas of Teachers in Physics IX, Brno 2004, Paido: pp. 37-39. ISBN 80-7316-084-0.
- [12] NEVEDELOVÁ, M.: Attitude of Students towards the Visual Form of Physical Tasks. In: Proceedings of International Workshop on Research Activities of Physics Departments of Civil Engineering Faculties in the Czech and Slovak Republics, Brno 2004. pp. 126-129.
- [13] LUKOVIČOVÁ, J., PALACKOVÁ, A.: Thermal Conductivity of Basic Rubber

- Composites. In: Proceedings of International Workshop on Research Activities of Physics Departments of Civil Engineering Faculties in the Czech and Slovak Republics, 2004. Brno: VUT Brno, 2004. pp. 73-75. ISBN 80-7204-353-6.
- [14] YANETKA, I.: On Ideal Relativistic Transmissions Through Symmetrical Double Delta-Barriers. In: Pazdera, J. and Kořenská, M. Proceedings of International Workshop on Research Activities of Physics Departments of Civil Engineering Faculties in the Czech and Slovak Republics. Cikháj 2004. Brno: University of Technology, Faculty of Civil Engineering, Department of Physics, 2004, pp. 198-201. ISBN 80-7204-353-6.
- [15] YANETKA, I.: On Connecting Formulas for the Schrödinger-Wannier Wave Function. In: Pazdera, J. and Kořenská, M. Proceedings of International Workshop on Research Activities of Physics Departments of Civil Engineering Faculties in the Czech and Slovak Republics. Cikháj 2004. Brno: Brno University of Technology, Faculty of Civil Engineering, Department of Physics, 2004, pp. 202-203. ISBN 80-7204-353-6.
- [16] YANETKA, I.: On the Current Density of the Schrödinger-Wannier Wave Function. In: Pazdera, J. and Kořenská, M. Proceedings of International Workshop on Research Activities of Physics Departments of Civil Engineering Faculties in the Czech and Slovak Republics. Cikháj 2004. Brno: Brno University of Technology, Faculty of Civil Engineering, Department of Physics, 2004, pp. 204-205. ISBN 80-7204-353-6.
- [17] HOLÚBEK, M.: Computer Simulation of Heat Transfer in a Cylinder. In: Research Activities of Physics Departments of Civil Engineering Faculties in the Czech and Slovak Republics, pp. 54-56, Brno 2004, ISBN 80-7204-353-6
- [18] VESELSKÝ, J., LUKOVIČOVÁ, J.: Physics at Civil Engineering Faculty STU. In: Proceedings of Conference on Research and Educational Activities of Physics Departments of Technical Universities in the Slovak Republic. Bratislava: Slovak University of Technology. Faculty of Civil Engineering, 2004, pp. 125-128. ISBN 80-227-2112-3 (CD).
- [19] VESELSKÝ, J., ZÁMEČNÍK, J.: Is There a Chance of Improving the Operational Knowledge of Physics Among Students of Technical Science? In: Proceedings of Conference on Research and Educational Activities of Physics Departments of Technical Universities in the Slovak Republic. Bratislava: Slovak University of Technology. Faculty of Civil Engineering, 2004, pp. 134-138. ISBN 80-227-2112-3 (CD).
- [20] BANÍK, I.: Physical Properties of Noncrystalline Semiconductors and Explanations of Them on the Basis of a Barrier Model – Didactic Model. In: Proceedings of Conference on Research and Educational Activities of Physics Departments of Technical Universities in the Slovak Republic. Bratislava: Slovak University of Technology. Faculty of Civil Engineering, 2004, pp. 147-167. ISBN 80-227-2112-3 (CD).
- [21] NEVEDELOVÁ, M.: Survey Among Students to Enrich the Teaching of Physics by Assigning Problems to Solve with Pictures. In: Proceedings of Conference on Research and Educational Activities of Physics Departments of Technical Universities in the Slovak Republic. Bratislava: Slovak University of Technology. Faculty of Civil Engineering, 2004, pp. 129-133. ISBN 80-227-2112-3 (CD).
- [22] PALACKOVÁ, A: Thermal Conductivity of Composite Materials. In: Proceedings of Conference on Research and Educational Activities of Physics Departments of Technical Universities in the Slovak Republic. Bratislava: Slovak University of Technology. Faculty of Civil Engineering, 2004, pp. 202-204. ISBN 80-227-2112-3 (CD).
- [23] YANETKA, I.: On Transmissions Through a Symmetrical Triple Delta-Barrier. In: Kleja, P. Proceedings of Conference on Research and Educational Activities of Physics Departments of Technical Universities in the Slovak Republic. Bratislava: Slovak University of Technology. Faculty of Civil Engineering, 2004, pp. 139-146. ISBN 80-227-2112-3 (CD).

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- [25] HOLÚBEK, M.: Simulation of Heat Transport in a Cylinder. In: Proceedings of Conference on Research and Educational Activities of Physics Departments of Technical Universities in the Slovak Republic. Bratislava: Slovak University of Technology. Faculty of Civil Engineering, 2004, pp. 199-201. ISBN 80-227-2112-3 (CD).
- [26] BALAŽOVJECH, M., HOLÚBEK, M.: Finding the Heat Transmission Coefficients on the Surface of a Cylinder by Solving a Set of Linear Algebraic Equations. In: Proceedings of Conference on Research and Educational Activities of Physics Departments of Technical Universities in the Slovak Republic. Bratislava: Slovak University of Technology. Faculty of Civil Engineering 2004, pp. 196-198. ISBN 80-227-2112-3 (CD).