

DEPARTMENT OF PHYSICS

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I. STAFF**Professors**

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

Basic Physical 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	M. Chovancová
Physics I	2	3	2	J. Lukovičová
Physics I	2	2	2	J. Veselský
Physics II	2	2	2	I. Baník
Physics II	3	2	2	M. Chovancová
Physics II	3	2	2	J. Lukovičová
Physics II	3	2	2	J. Veselský
Physics III	7	2	2	J. Veselský
Engineering Thermodynamics				J. Lukovičová

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
Modelling Transport Phenomena	1	28	J. Lukovičová
Physical Fields, Waves	1	28	J. Veselský
Engineering Thermodynamics	1	28	J. Lukovičová
Measuring Thermal and Moisture Properties	1	28	J. Lukovičová

IV. RESEARCH TARGETS

1. Measuring the Thermal Properties of Materials and Constructions
2. Mathematical Modelling of Heat and Mass Transport in Materials and Constructions
3. Inverse Problems in Heat and Mass Transport
4. Teaching Physics

V. RESEARCH PROJECTS

1. Untraditional Physics on the Web, Grant No. 3/1187/03 (Baník I.)
2. Implementation of New Untraditional Forms of Physics Education – Methods of Improving the Physics Ability of Students of Technical Universities with the Aim of Innovating and Practicing Modern Technologies and Their Transfer to Technical Practice. No. 13120120117 (I. Baník)
3. Complex Thermo - Humidity Behaviour of Buildings, APVT - 51 - 030704

4. VEGA project č. 1/1134/04 - Thermal and Moisture Parameters of Granulate and Moisture Properties.
5. ESF 738211; JPD 3 2004/4024 č. 13120200041: Higher Education Program for Graduate Students and Young Research Workers in the Area of Hydrothermal Behavior of a Building.

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. SAS – Institute of Measurement Science, Bratislava
8. SAS – Institute of Physics, Bratislava
9. Constantine the Philosopher University, Nitra

VI.2 International Cooperation

1. Centre for Science Education, Sheffield Hallam University, Sheffield, GB
2. Katholieke Universiteit Leuven, Belgium
3. Faculty of Civil Engineering, Czech Technical University, Prague, Czech Republic
4. Faculty of Civil Engineering, Technical University, Brno, Czech Republic
5. Politechnika Opole, Poland

VI.2.1 Visitors to the Department

1. Prof. J. Wyrwal, Politechnika Opole, Poland
2. Dr. Tomasz Krykowski, Silesian University of Technology, Faculty of Civil Engineering, Gliwice
3. Prof. RNDr. František Vodák, DrSc, ČVUT, Prague
4. Prof. Andrzej Wawrzynek, Silesian University of Technology, Gliwice, Poland

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

1. Marcela Chovancová – Centre for Science Education, Sheffield Hallam University, U.K.
2. Matúš Holúbek - Katholieke Universiteit Leuven, Belgium

VIII. OTHER ACTIVITIES

VIII.3. Conferences and Workshops Organized

1. Conference on Research and Educational Activities of Physics Departments of Technical Universities in the Slovak Republic. Held on 6 June 2006 in Bratislava, Slovak University of Technology, Faculty of Civil Engineering.

2. International Workshop on Physical and Material Engineering 2006. Held on 5-7 September 2006 in Rackova dolina, Pribylina.
3. THERMOPHYSICS 2006, Meeting of the Thermo Physical Society Working Group of the Slovak Physical Society, SAV. Held on 12-13 October 2006 in Kočovce.

IX.2 Books and Textbooks

1. VESELSKÝ, J.: Physics. Thermal Physics. University of SS Cyril and Methodius in Trnava, 2006. ISBN 80-89220-23-1, pp. 64
2. VESELSKÝ, J.: Physics. Selected Parts. STU Bratislava, 2006. ISBN 80-227-2403-3, pp. 259
3. ZÁMEČNÍK, J., VESELSKÝ, J.: Physics. Directions for Laboratory Work. University of SS Cyril and Methodius in Trnava, 2006. ISBN 80-89220-24-X, pp. 76
4. BANÍK I.: First Acquaintance with Vectors and Tensors: The First Part, Bratislava: STU Bratislava, 2006. ISBN 80-227-2503-X, pp. 120
5. BANÍK I.: First Acquaintance with Vectors and Tensors The Second Part, Bratislava: STU Bratislava, 2006. ISBN 80-227-2504-X, pp. 68
6. BANÍK I., ZÁMEČNÍK J.: Physics 1 – Mechanics of a Mass Point, Mechanics of a System, Bratislava: STU Bratislava, 2006. ISBN 80-227-2473-4, pp. 87
7. BANÍK, I., ZÁMEČNÍK, J.: Physics 1 – Oscillation, Gravitation. Bratislava: STU Bratislava, 2006. ISBN 80-227-2474-2, pp. 73
8. BANÍK, I., ZÁMEČNÍK, J.: Physics 1 – Hydromechanics. Bratislava: STU Bratislava, 2006. ISBN 80-227-2475-0, pp. 71
9. ZÁMEČNÍK, J., BANÍK, I.: Physics 1 – Applied Optics, Bratislava: STU Bratislava, 2006. ISBN 80-227-1415-1, pp. 118

IX.3 Conferences

1. KLEJA, P.: Considerations on a Regression Line. In: Forum Statisticum Slovacum, Bratislava, SLOVAK STATISTICAL AND DEMOGRAPHICAL SOCIETY. ISSN 1336-74, pp. 111-115
2. BANÍK, I.: Physical Experiments at Home. In: Trends in Education 2006, Techniques and Information Technology, 20.-21.6.2006. Olomouc (Czech Republic), Votobia, 2006. ISBN 80-7220-260-X, pp. 369-370
3. BANÍK, I.: Untraditional Laser Doppler Anemometry. In: Trends in Education 2006, Techniques and Information Technology, 20.-21.6.2006. Olomouc (Czech Republic), Votobia, 2006. ISBN 80-7220-260-X, pp. 357-360
4. BANÍK, I.: Luminescence in Non-Crystalline Semiconductors and Their Dependence on the Photon Energy of Incidental Light. In: Trends in Education 2006, Technique and Information Technology, 20.-21.6.2006, Olomouc (Czech Republic), Votobia, 2006. ISBN 80-7220-260-X, pp. 361-368
5. BANÍK, I., CHOVANCOVÁ, M.: Basic Optics at Home. In: Proceedings of Ideas of Physics Teachers, Prague, Publ. Prometheus. ISBN 80-7196-331-3, pp. 55-58

6. CHOVANCOVÁ, M.: Some Interesting Things to Vary Physics Lessons. In: Proceedings of Ideas of Physics Teachers, Prague, Publ. Prometheus. ISBN 80-7196-331-3, pp. 64-65
7. MACHOVIČ, Ľ., BANÍK, I.: Motivational Experiments in the Study of Mechanics. In: Proceedings of Ideas of Physics Teachers, Prague, Publ. Prometheus. ISBN 80-7196-331-3, pp. 59-63
8. BANÍK, I.: Barrier-Cluster Model of Chalcogenide Glass. In: Abstract Book of 10th International Conference on the Structure of Non-Crystalline Materials, Prague, September 18-22, 2006, p. 240
9. BANÍK, I.: Optical Experiments with a DataProjector. In: Proceedings of Ideas of Physics Teachers XI Olomouc 2006, Palacký University in Olomouc, ISBN 80-244-1491-0, pp. 49-54
10. BANÍK, I.: Two Experiments with CD Grading. In: Proceedings of Ideas of Teachers in Physics XI Olomouc 2006, Palacký University in Olomouc. ISBN 80-244-1491-0, pp.55-57
11. BANÍK, I.: Physical Experiments for Home Discoveries. In: Proceedings of 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, 2006. ISBN 80-227-2430-0, pp. 37-80
12. KLEJA, P.: Untraditional Model of Computing Experimental Data. In: Proceedings of 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, 2006. ISBN 80-227-2430-0, pp. 173-177
13. HOLÚBEK, M.: Moisture Transport Simulation Depending on the Boundary Conditions Through a Wall. In: Proceedings of 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, 2006. ISBN 80-227-2430-0, pp. 201-203
14. YANETKA, I.: Transmission Coefficient for a Biased Delta-Barrier Embedded in a Crystalline Lattice. In: Proceedings of 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, 2006. ISBN 80-227-2430-0, pp. 166-172
15. LUKOVIČOVÁ, J.: Application of the Inverse Method to the Determination of a Heat Transfer Coefficient. In: Proceedings of 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, 2006. ISBN 80-227-2430-0, pp. 195-200
16. PALACKOVÁ, A.: Insight into the Position of Physics in the Teaching Process. In: Proceedings of 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, 2006. ISBN 80-227-2430-0, pp. 163-165

17. VESELSKÝ, J.: Application of Ultrasound for the Study of Thermal Conductivity. In: Proceedings of 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, 2006. ISBN 80-227-2430-0. pp. 189 – 194
18. PALACKOVÁ, A.: Thermal Behaviour of Polymer-Magnetite Composites. In: Abstract Book of Thermophysics 2006, Publishing House STU Bratislava, ISBN 80-227-2536-6.
19. VESELSKÝ, J.: Investigation of Soil Thermal Properties Using the Impulse Method. In: Abstract Book of Thermophysics 2006, Publishing House STU Bratislava, ISBN 80-227-2536-6
20. BANÍK, I.: Measuring Thermophysical Properties of Materials Using the Accumulation - Core Method. In: Abstract Book of Thermophysics 2006, Publishing House STU Bratislava, ISBN 80-227-2536-6
21. CHOVANCOVÁ, M.: Some Motivational Experiments in the Study of Physics. In: Proceedings of the 15th Conference of Slovak and Czech Physicists. Košice, Slovak Physical Society, 2006. ISBN 80-969124-2-9, pp. 115-117
22. BANÍK, I.: Physical Processes in Non-Crystalline Semiconductors. In: Proceedings of the 15th Conference of Slovak and Czech Physicists. Košice, Slovak Physical Society, 2006. ISBN 80-969124-2-9, pp. 45-47
23. CHOVANCOVÁ, M.: Women in Science. In: Proceedings of International Workshop on Physical and Material Engineering 2006. Bratislava 2006. Slovak University of Technology, Faculty of Civil Engineering, Department of Physics. ISBN 80-227-2467-X, pp. 42-44
24. PALACKOVÁ, A.: Thermal Properties of Bonded Ferrite Powders. In: Proceedings of International Workshop on Physical and Material Engineering 2006. Bratislava 2006. Slovak University of Technology, Faculty of Civil Engineering, Department of Physics. ISBN 80-227-2467-X, pp. 191 – 194
25. LUKOVIČOVÁ, J., MATIAŠOVSKÝ, P.: Application of the Inverse Method to the Determination of the Heat-Transfer Coefficient for Porous Material. In: Proceedings of International Workshop on Physical and Material Engineering 2006. Bratislava 2006. Slovak University of Technology, Faculty of Civil Engineering, Department of Physics. ISBN 80-227-2467-X, pp. 88-92
26. VESELSKÝ, J., KORONTHÁLYOVÁ, O.: Experimental Determination of the Dynamic Moisture Response of Autoclaved Aerated Concrete. In: Proceedings of International Workshop on Physical and Material Engineering 2006. Bratislava 2006. Slovak University of Technology, Faculty of Civil Engineering, Department of Physics. ISBN 80-227-2467-X, pp. 274-276
27. JANETKA, I.: Measuring the Time Constant of an RC Circuit Using a Coachlab Interface. In: Proceedings of International Workshop on Physical and Material Engineering 2006. Bratislava 2006. Slovak University of Technology, Faculty of Civil Engineering, Department of Physics. ISBN 80-227-2467-X, pp. 283-286
28. JANETKA, I.: Measuring the Inductive Time Constant of an LR Circuit Using a Coachlab Interface. In: Proceedings of International Workshop on Physical and Material Engineering 2006. Bratislava 2006. Slovak University of Technology, Faculty of Civil Engineering, Department of Physics. ISBN 80-227-2467-X, pp. 287-290