



4th International Conference on Physics Teaching in Engineering Education PTEE 2005

June 29 – July 1, Brno, Czech Republic

CONFERENCE PROGRAMME

June 28th, Tuesday
Evening

Conference Centre		Technická str. 8
18:00 – 21:00	Registration	

June 29th, Wednesday
Morning

Centre of Brno University of Technology		Antonínská str. 1
Rectorat BUT		
8:00 – 9:00	Registration	
9:00 – 11:50	Great Hall of BUT	
Opening Ceremony		
		Invited Talks
		Chairman: P. Tománek
<ul style="list-style-type: none">• <i>On Implementing the Bachelor–Master Structure</i> E. Legendijk <i>Delft University of Technology, The Netherlands</i>• <i>Physics in a Multicultural Engineering Institution: How to Increase Interest for Innovation, and Improve Economic and Human Added Values</i> P. Becker, J. M. Gillet, A. R. Rodriguez, Xiuping Pi <i>Ecole Centrale Paris, France</i>• <i>From Communication to Popularising – „Energy for Everybody“ Educational Programme</i> M. Dufková <i>Czech Power Company ČEZ, a. s., Czech Republic</i>		
11:50	Bus to Penzion Palacký and Conference Centre	

June 29th, Wednesday
Afternoon & Evening

Conference Centre

Technická str. 8

12:30 – 13:15

Lunch time

Lecture Room T– 020

13:30 – 13:50

Introductory Plenary Session

Chairman: P. Tománek

Lecture Rooms and Laboratories at Conference Centre

14:00 – 16:00

Workshops I

W 1

C. Kauz, G. Kurz
Using Research–
Based Instructional
Materials to Address
Common Student
Difficulties in Physics:
An Example from
“Tutorials in
Introductory Physics”

W 3

**A. I. Fishman,
A. I. Skvortzov**
Modern Computer
Technology in Physics
Education.
I. New Possibilities
for Demonstration
Experiments.

W 5

**J. Bernard,
A.–K. Carstensen**
Designing
Conceptual Labs

W 7

**M. Doložílek,
J. Pilch**
Gold Wave
for Sonification of
Oscillations and Waves

16:00 – 16:30

Coffee break

16:30 – 18:30

Workshops II

W 2

**A. Sedov,
V. Belokopytov,
M. Gubkin, D. Ivanov,
I. Ivanova, M. Timoshin**
A Computer Based
Course of General
Physics

W 4

**A. I. Fishman,
A. I. Skvortzov, I. Jacobs**
Modern Computer
Technology in Physics
Education.
II. A Multimedia
Videobook of Physical
Problems.

W 6

**K. Holá,
P. Demkanin,
S. Halusková, P. Benco**
Computer–Based
Measurements in
Laboratory Work

W 8

J. Obdržálek
Music by the Ears
of Physics.
Tuning Theory

18:40 – 19:30

Welcome Party

19:30 – 21:00

**Posters
&
Beer**

June 30th, Thursday
Morning 1

8:00 – 8:30

Registration desk

Lecture Room T– 020

8:30 – 10:00

Session: 1.

Chairman: W. Lauriks

- **Two Aims of Physics in Engineering Education**
J. Jelen
Czech Technical University in Prague, Czech Republic
- **The Introduction of the Major Minor Structure in the Physics Bachelor Curriculum**
S. Feiner–Valkier
Eindhoven University of Technology, The Netherlands
- **Teaching of Physics in the New Structure of the Engineering Study**
J. Dillinger, S. Halusková, V. Laurinc, O. Holá
Slovak University of Technology in Bratislava, Slovakia
- **The Impact of the Bologna Declaration on Physics Teaching at the Budapest University of Technology and Economics**
P. Pacher, J. Pipek
Budapest University of Technology and Economics, Hungary
- **The Role of Physics in a Rough Bologna Climate**
S. Stankowski
Biel University of Applied Sciences, Switzerland
- **Summer Schools Can Increase the Number of Female Engineers in Future**
C. Johannesson
KTH - Royal Institute of Technology, Sweden

10:00 – 10:30

Coffee break

June 30th, Thursday
Morning 2

Lecture Room T– 020

10:30 – 12:00

Session: 2.

Chairman: P. Pacher

- **Assessment of the Use of Computer Based Learning (CBL) in University Laboratories**
P. Smyth, D. Brabazon, E. Mc Loughlin
Dublin City University, Ireland
- **Review of the Methods and Effectiveness of Computer Based Learning (CBL)**
P. Smyth, D. Brabazon, E. Mc Loughlin
Dublin City University, Ireland
- **Implementing Research – Based Instructional Materials to Foster Student Conceptual Understanding in Physics**
C. Kautz, W. Bauhofer
Technische Universität Hamburg-Harburg, Germany
- **Force, Energy and Acceleration, Expression and Meaning from a Student Perspective, when Discussing Everyday Physical Events**
C. Alvegård, E. Erberg, L. Svensson, T. Johansson
Department of Education, Lund University, Sweden
- **Elaboration of Multimedia Study Materials in Physics at Riga Technical University**
J. Blūms, A. Blūma, M. Jansone, I. Klemenoks, I. Klincāre, M. Knite, B. Žuga
Riga Technical University, Latvia
- **Multimedia in Teaching – Learning Process of Physics**
O. Hola, V. Laurinc, J. Dillinger, S. Haluskova
Slovak University of Technology in Bratislava, Slovakia

12:00 – 13:00

Lunch time

June 30th, Thursday
Afternoon & Evening

Lecture Room T– 020

13:00 – 14:30

Session: 3.

Chairman: S. Stankowski

- **A Video Based System for the Analysis of Physical Processes**
A.J. López, A. Ramil, E. Saavedra, J.C. Álvarez, G. Nicolás, A. Yáñez
Escola Politécnica Superior, Universidade da Coruña, Spain
- **De – Polarization Attempts Using E – Polarization**
G. Langie, M. Cannaerts, W. Lauriks, J.O. Indekeu, H. Buelens, K. Mennes
Hogeschool voor Wetenschap en Kunst (Institute for Higher Education in the Science & the Arts), Belgium
- **Remote Experiment with Software Kit "ISES Web Control"®**
F.Lustig, F. Schauer
Charles University, Faculty of Mathematics and Physics, Czech Republic
- **Experience with Remote Physics Experiments in Student's Laboratory**
M. Ožvoldová , P. Čerňanský, F. Lustig, F. Schauer
University of Trnava, Faculty of Pedagogy, Slovakia
- **Tutorial and Research Package Master on Continuum Mechanics**
V.V.Rudenko, M.V.Shaburov
Russian Federal Nuclear Center, Russia
- **User Software MAG for Personal Computers as a Tool for Numerical Simulation of One – Dimensional Magneto – Hydrodynamic Flows**
V.V.Rudenko, M.V.Shaburov
Russian Federal Nuclear Center, Russia

14:30 – 14:50

Coffee break

14:50 – ~24:00

Conference Trip

Bus from
Penzion Palacký 14:50
Conference Centrum 15:00
Hotel Continental 15:10
Hotel International 15:15

Excursion to
Lednice Castle
UNESCO World Heritage

Conference Dinner at
Wine cellar „VENUS“,
Pavlov, South Moravia

Return at ~24:00

July 1st, Friday
Morning

8:00 – 8:30

Registration desk

Lecture Room T– 020

8:30 – 9:45

Session: 4.

Chairman: E. Lagendijk

- ***New Challenges in Math Education***
E. Coplakova, A.G.M. Daalderop
Delft University of Technology, The Netherlands
- ***Teaching Mathematics in such a Way that Its Applications in Physics are Recognized by Students***
J.A.M. De Groot, H.A.W.M. Kneppers
Delft University of Technology, The Netherlands
- ***How Mathematical is Conceptual Understanding?***
T. Adawi, A. Ingerman, A–M. Pendrill
Centre for Digital Media and Higher Education, Sweden
- ***Internet Remote Mechanic Operator System for Educational Laboratories***
J. M. Diazdelacruz, A. Ponce , A.M. Sanchez Perez, L. Seidel, F.Ramiro
Universidad Politecnica Madrid, Spain
- ***The Rotating Aquarium Cuboid Glass Container as a Multi – Purpose Teaching Tool***
F. Kaußen, L. Mühlhoff
Fachhochschule Lippe und Höxter, Germany

9:45 – 10:15

Coffee break

10:15 – 11:00

Session: 5.

Chairman: G. Kurz

- ***Homework as a Pedagogical Tool***
C. Johannesson, B–Ö. Jonsson
KTH - Royal Institute of Technology, Sweden
- ***Further Training in Technology for Primary School Teachers – A Task for Technical Universities***
C. Johannesson
KTH - Royal Institute of Technology, Sweden
- ***Hands – on Experiment and Its Physical Interpretation***
Ľ. Onderová, Z. Ješková, M. Konkoľová
Faculty of Science P.J.Safarik University, Slovakia

11:00 – 11:30

Chairman: P. Pešat

SEFI Physics Work Group
Plenary Meeting

11:30 – 12:30

Lunch time

July 1st, Friday
Afternoon

Lecture Room T– 020

12:30 – 14:00

Session: 6.

Chairman: P. Pešat

- **A Workshop Model for Teaching a Freshman's Course on Electromagnetism**
C. Bruin, P. Kruit, M.S. Bronsgeest, E. Balsma, W. Sonneveld
Delft University of Technology, The Netherlands
- **Educational Background and Examination Results**
M. Sternberg
Bochum University of Applied Sciences, Germany
- **“Physics for the Others” – Learners of Other Branches**
J. Obdržálek
Charles University of Prague, Czech Republic
- **Story of an Online Textbook for Physics; Experiences and Plans for Future**
P.Ballo, M.Ožvoldová, S.Halusková
Slovak University of Technology in Bratislava, Slovakia
- **Application of Virtual Optical Laboratory in the Education and Research**
J. Kornis
Budapest University of Technology and Economics, Hungary
- **The Role of Computers in the Effective Treatment of Measured Data in Laboratories of Physics**
B.Burešová, J.Hofmann
Institute of Chemical Technology, Czech Republic

14:00 – 14:30

Coffee break

14:30 – 15:45

Session: 7.

Chairman: S. Halusková

- **Utilization of E – Learning Technologies in Physics Laboratory Teaching**
M. Weiter, O. Salyk, M. Vala, J. Brada
Brno University of Technology, Czech Republic
- **A Sound Card of the PC for Sonification of the Oscillations and Interference of the Sound Waves**
M. Doložílek, J. Pilch, A. Ryndová
Brno University of Technology, Czech Republic
- **Teaching General Physics with Matlab**
P. Hruška, L. Grmela, P. Koktavý
Brno University of Technology, Czech Republic
- **Physical Issues of Electromagnetic Fields in a Study of Interior and Exterior Climate of Buildings**
E. Čermáková, T. Černický
Brno University of Technology, Czech Republic
- **Nanoscience and Nanotechnology in Engineering Education**
P. Tománek
Brno University of Technology, Czech Republic

15:45 – 16:00

Chairman: L. Grmela

Closing of the Conference PTEE 2005