

Significant parts of  
**Second and Final Announcement**  
3rd European Conference on  
**Physics Teaching in Engineering Education**  
PTEE 2002



**5-7 June 2002**

organized by

**Department of Physics and Faculty of Engineering  
at KU Leuven - Belgium**



under the auspices of



and

**Main Sponsors :**



Cosponsor : Interbrew

Conference website: <http://www.kc.kuleuven.ac.be/ptee2002/>

## **ORGANIZING COMMITTEE**

Walter Lauriks (Belgium) co-chair	Erik Oehlenschlaeger (Denmark)
Noel Van Deynse (Belgium) co-chair	Pal Pacher (Hungary)
Eleonora Adlerova (Slovak Republic)	Michael Peeters (Belgium)
Hans Fuchs (Switzerland)	Pavel Pesat (Czech Republic)
Günther Kurz (Germany)	Jaoa Pinto (Portugal)
Erik Lagendijk (Netherlands)	Marlia Vloemans (Netherlands)
Peter Melville (United Kingdom)	

## **SCOPE**

The Third European Conference on Physics Teaching in Engineering Education 2002 follows the first conference PTEE 1997 (4-6 June) at the Engineering College of Copenhagen, and the second conference PTEE 2000 (14-17 June) at the Technical University of Budapest, each attended by 120 to 150 participants. Both conferences were held under the auspices of the Société Européenne pour la Formation des Ingénieurs (SEFI) and the European Physical Society (EPS). The scope of the PTEE 2002 conference will include all aspects of physics teaching in engineering education. The aim of the conference is to bring together people working in this field from different parts of Europe to provide them with a forum for the exchange of ideas and experiences.

Of course, participants of other continents are welcome as well.

## **TOPICS**

1. Technical applications in physics courses
2. Physics, technology and society
3. Basic physics courses, learning environment and curricula
4. Modelling and simulation
5. New methods in PTEE
6. Education research in PTEE
7. I.C.T. in physics teaching
8. Laboratory work
9. Advanced topics
10. Hands-on experiments and demonstrations
11. Related subjects

## **LANGUAGE**

The official language of the conference is English, no translation will be provided.

## **VENUE**

The conference will take place on the campus of the Catholic University of Leuven (K.U. Leuven) which was founded in 1425. The first day will be held on the ancient 'campus' in the city centre and the two following days on the 'new' campus, which is located 5 km outside Leuven in the green village of Heverlee. The new campus was built in 1969 as a modern expansion of the old university.

The hotels are in the city of Leuven, which has many nice old buildings such as the Town Hall, St-Peter's Church, the University Hall, the houses on the Great Market and on the Old Market, the Beguinage and many, many others.....

For more tourist information about the city of Leuven go to : <http://www.leuven.be>

## **CALL FOR ABSTRACTS / REGISTRATION**

We invite all people involved in the physics for engineers to participate in this conference.

To subscribe, please click "Registration Form" on the homepage of our website : <http://www.kc.kuleuven.ac.be>, choose "save to disk", open the template, complete it and attach it to a mail to [Jenny.Duerinckx@kc.kuleuven.ac.be](mailto:Jenny.Duerinckx@kc.kuleuven.ac.be)

We encourage all interested people to submit a paper or a poster. This has to be done by sending a 200 words abstract to the Conference secretariat by 28 February 2002.

All contributions will be reviewed by the Paper Committee and the authors will be notified about acceptance of submitted abstracts and the selection for oral or poster presentation by 22 March.

Authors are requested to present the paper in person and participate in the discussion. It is therefore required that at least one author of each accepted abstract be registered prior to 30 April 2002. Otherwise the contribution will not be printed in the abstract booklet and will be excluded from the programme. Each participant is eligible for one presentation. Each registered participant will receive the printed abstract booklet at registration and by e-mail around the end of May.

## **GUIDELINES FOR ABSTRACTS**

Abstracts must be written in English. The length of abstracts should not exceed 15 lines.

References should be numbered consecutively as they appear in the text with square brackets and listed at the end.

Abstracts must be produced via the Abstracts Form on the web site. Go to the homepage : <http://www.kc.kuleuven.ac.be>, click "Abstract Form" choose "Save to Disk" Open the template, complete it and attach it to a mail to : [Jenny.Duerinckx@kc.kuleuven.ac.be](mailto:Jenny.Duerinckx@kc.kuleuven.ac.be) Those who need a computer for the presentation are kindly requested to use their own laptops.

## **PAPERS AND PROCEEDINGS**

The Proceedings will contain the manuscripts of the plenary and contributed (oral and poster) presentations. Authors will be required to submit their manuscripts prior to 30 April 2002. Detailed instructions for preparing the final manuscript will be sent to the authors together with the notification about acceptance of abstracts.

The acceptance of the paper for inclusion in the Proceedings will depend on the quality, language and technical layout of the manuscript. The Proceedings will be available in electronic form and will contain the papers in platform independent Portable Document Format (PDF) files.

## **STRUCTURE OF THE CONFERENCE**

The conference will last for three days. The scientific program will consist of plenary talks, contributed talks, posters and workshops. The plenary talks (45 min.) will cover topics of general interest and importance. The contributed talks (15 min.) will be presented in the parallel sessions. The oral and poster forms of presentations are considered equivalent. 12 Workshops lasting about 3 hours will be organised in 6 parallel sessions on Thursday and Friday afternoons.

## **POSTER PRESENTATIONS**

Poster Sessions will be held on Thursday (6 June) and Friday (7 June) afternoons during the (somewhat longer) coffee breaks. Each author will be provided with a board of 2 m high and 1 m wide. Posters should be put on the allocated board no later than 2 hours before the sessions. Each poster will be on display for one day. Post deadline papers may also be presented in Poster Sessions.

## TENTATIVE TIME SCHEDULE

**Tuesday, 4 June :** 17.00 - 19.00 registration + welcome drink  
“College Premonstreit”; Naamsestraat 61, LEUVEN

### **Wednesday, 5 June**

In the University Hall, Naamsestraat 22, 1st floor

- 8.15 - 9.15 Registration
- 9.20 - 9.35 Opening Ceremony
- 9.35 - 10.45 Plenary lecture : **Alcatel's experience with e-learning**  
by : **Jan De Kesel**, Director Human Resources at Alcatel Belgium
- 10.45 - 11.15 Coffee break
- 11.15 - 12.30 Parallel sessions
- 12.30 - 14.00 Lunch in Alma II, Van Evenstraat 2C

In College Premonstreit, Naamsestraat 61

- 14.00 – 15.30 Parallel sessions
- 15.30 – 16.00 Coffee break
- 16.00 - 17.30 Parallel sessions

In the University Hall, Naamsestraat 22 1st floor

- 19.00 Reception + buffet dinner

### **Thursday, 6 June**

On Campus Arenberg III, Celestijnenlaan 200C, Heverlee

- 8.45 - 9.40 Plenary lecture : **Physics and new curricula in a French engineering school**  
by prof. **J.M. Jonathan** deputy Director of , « SupOptique », Orsay, France
- 9.45 - 10.30 Parallel sessions
- 10.30 - 11.00 Coffee break
- 11.00 - 12.30 Parallel sessions
- 12.30 - 14.00 Lunch
- 14.00 - 15.30 Workshops
- 15.30 – 16.30 Coffee break + posters
- 16.30 – 18.00 Workshops
- 18.00 - 19.00 Information about the SEFI Working Group on Physics (PWG) and election of a new chairperson.

### **Friday, 7 June**

On Campus Arenberg III, Celestijnenlaan 200C, Heverlee

- 8.45 - 9.40 Plenary lecture : **Interactive Lectures : a method to keep students engaged;** by **Prof. E Mazur**, Harvard College USA
- 9.45 - 10.30 Parallel sessions
- 10.30 - 11.15 Coffee break + posters
- 11.00 - 12.30 Parallel sessions
- 12.30 - 14.00 Lunch
- 14.00 - 15.30 Workshops
- 15.30 - 16.40 Coffee break + posters
- 16.40 – 17.00 Closing ceremony

## **ABSTRACTS OF THE PLENARY TALKS**

1. Jan De Kesel, Director Human Resources, Alcatel Bell, Antwerpen Belgium

### **Alcatel's experience with e-learning**

2. Jean-Michel Jonathan, Deputy-Director of « SupOptique », Orsay, France

### **Physics and new curricula in a French engineering school**

The "Ecole Supérieure d'Optique" (SupOptique) educates highly skilled professionals in physics and engineering for the industry of optics. This is favoured by the reunion, within the same "Institut d'Optique", of the school and of the Charles Fabry Laboratory as well as by very tight links to the industry. The curriculum is strongly oriented towards physics, optical engineering and technologies such as computer science, electronics and mechanics. The industry values our graduates for their ability to imagine, experiment and develop new optical technologies and systems. It is asking for an increased number of them, but also requests an improved ability of the engineers to react to the needs and constraints of production, business and economic growth. The aerospace and optical communication business are very demanding from those points of view.

The equilibrium between physics and management or business oriented skills is therefore on our agenda. This is why, along with an academic curriculum with a strong emphasis on laboratory skills, we develop an apprenticeship curriculum where the students learn and experience both at school and in a company which employs them for two years. This means that the industry becomes part of the educational program as it has existed for years in the training of technicians and employees.

In this way, by expanding our students' possibilities of choice in physics, engineering, business education, and by developing apprenticeship at that level as an alternative to the traditional academic curriculum, we want to fulfil the various needs of the industry of optics. This effort will be described in the talk.

3. Eric Mazur, Professor of Physics, Harvard College Cambridge, MA, USA

### **Interactive Lectures : a method to keep students engaged**

## WORKSHOPS

The 12 workshops outlined below will be offered at the conference on Thursday (6 June) and Friday (7 June) afternoons, six each day. The duration of a workshop is about 3 hours. Participation in the workshops for registered participants is free-of-charge. Space for workshops is limited and enrolment will be processed on a "first come, first served basis". Please indicate on the registration form, for each afternoon, in order of preference, two workshops you wish to attend.

### **W 1 : Implementing the Learning Cycle in Integrated Learning Environments An Example from Thermodynamics**

**HANS U. FUCHS**; UAS Winterthur; [hansu.fuchs@bluewin.ch](mailto:hansu.fuchs@bluewin.ch)  
**GEORGE ECOFFEY**; UAS Fribourg; [ecoffey@eif.ch](mailto:ecoffey@eif.ch)  
**EDY SCHUETZ**; BS Uster; [edy.schuetz@bzuster.ch](mailto:edy.schuetz@bzuster.ch)

### **W 2 : Optimal Clustering of Engineering Students**

**MICHAEL PEETERS**; VUB, Brussels. [mpeeters@vub.ac.be](mailto:mpeeters@vub.ac.be)

### **W 3 : Using research-based instructional materials to address common student difficulties in physics : An example from : "*Tutorials in Introductory Physics*"**

**CHRISTIAN H. KAUTZ**; Departement of Physics, Syracuse University, Syracuse, NY, USA [kautz@physics.syr.edu](mailto:kautz@physics.syr.edu)

### **W 4 : Courseware Development Technologies for E-Learning in Physical Sciences**

**L. DRSKA**; Czech Technical University of Prague; Prague, Czech Republic  
[drska@antu.fjfi.cvut.cz](mailto:drska@antu.fjfi.cvut.cz)

### **W 5 : Scientific computing based on MAPLE**

**S. BARTON**; Mendel University, Brno Czech Republic; [barton@mendeln.cz](mailto:barton@mendeln.cz)

Participants = cca. 2 x No. of computers = 30

### **W 6 : Building evaluation standards for the web.**

**A. TARTAGLIA**; Politecnico Torino; ITALY [tartaglia@polito.it](mailto:tartaglia@polito.it)

## **W 7 : Computer Aided Videoanalysis (CAV)**

**EILERT HAMER**; Fachhochschule Ravensburg-Weingarten, FB Technologie und Management, Weingarten, Germany; [hamer@fh-weingarten.de](mailto:hamer@fh-weingarten.de)

## **W 8 : Development and assessment of competences in the Switch Student Projects**

**Ir. P. MENGER, MOI & Ing. F. ZOLLER** ;  
Institute of Technology Rijswijk; The Netherlands; [mg@thrijswijk.nl](mailto:mg@thrijswijk.nl)

## **W 9 : Two dozen of interesting Physical hands-on experiments?**

**BANIK RASTISLAV & BANIK IVAN**; MBell-University; Slovak Republic  
[banik@fpv.umb.sk](mailto:banik@fpv.umb.sk)

## **W 10 : Introduction to Mathematica as a teaching and learning tool**

**MICHAEL PEETERS**; VUB Free Univeristy of Bruxelles, Bruxelles, Belgium  
[mpeeters@vub.ac.be](mailto:mpeeters@vub.ac.be)

## **W11 : How to use CAS (Computer Algebra Systems) and Handheld Technology in Undergraduate Physics teaching.**

**GEORGE ADIE**; Kalmar University, Sweden; [George.adie@te.hik.se](mailto:George.adie@te.hik.se)  
**BODGAN ZOLTOWSKI**; Technical Univ. of Lodz, Poland; [beret@ek-sg.p.lodz.pl](mailto:beret@ek-sg.p.lodz.pl)

## **W 12 : Evanescent microwaves**

**STEFAN STANKOWSKI**; Biel University of Applied Science, Biel, Switzerland;  
[sss@hta-bi.bfh.ch](mailto:sss@hta-bi.bfh.ch)

## **REGISTRATION DESK / WELCOME DRINK**

Participants are kindly requested to register on Tuesday 5-7 p.m. at “College Premonstreit” Naamestraat 61, where a welcome drink will be offered; or at the reception desk in the University Hall on Wednesday morning 8.15-9.15 a.m. before the opening ceremony.

## **ACCOMMODATION**

Accommodation has been reserved until April 15<sup>th</sup> at reduced price for the participants of the conference at hotels in the city centre and close to the conference venue. A limited number of cheap hostel rooms is also available (10 km away from the campus, in the woods of Heverlee,



accessible by one public bus). You are asked to arrange your booking directly to the hotel of your choice as soon as possible. Hotel reservation will be made on the first come first served basis. All hotel information and a hotel reservation form are given under the headline "Hotels".

In order to reserve accommodation please fill in the appropriate Reservation Form for the hotel of your choice, and fax it before **15th April 2002** directly to the hotel. Reservation will only be fixed after a prepayment is received.

### **WELCOME RECEPTION /BUFFET**

On **Wednesday, 5th June at 7.00 p.m.** all participants are cordially invited to a welcome reception/buffet in the Ceremony Hall of the University of Leuven, Naamsestraat 22.

### **ACCOMPANYING PERSONS' PROGRAMME**

Registered accompanying persons are invited to the welcome reception/buffet. If there is sufficient interest, the following excursions will be organised :

Optional excursion to

Wednesday afternoon : Leuven sightseeing free of charge

Thursday 6 June afternoon : Brussel €20

Friday 7 June full day : Gent & Brugge €45 lunch inclusive.

### **CANCELLATION / REFUND POLICY**

Cancellations of hotel or hostel must be arranged directly with the hotel and cancellations of participation notified in written form prior to 15 May 2002 will be entitled to an 70% refund to be processed after the conference. No refund is possible for cancellations received after this date.

Substitutions will be accepted at any stage. All requests, changes or cancellation should be directed to the address of the Conference Secretariat.

## **FOREIGN EXCHANGE AND BANKING FACILITIES**

There is a bank office on campus as well as several offices in town.

## **DEADLINES AND IMPORTANT DATES**

<b>Receipt of abstracts:</b> .....	<b>28<sup>th</sup> February 2002</b>
<b>Notification of acceptance:</b> .....	<b>22<sup>nd</sup> March 2002</b>
<b>Early registration before :</b> .....	<b>8<sup>th</sup> April 2002</b>
<b>Deadline for Hotel Reservation Form:</b> .....	<b>15<sup>th</sup> April 2000</b>
<b>Receipt of papers :</b> .....	<b>30<sup>th</sup> April 2002</b>
<b>Deadline for cancellation of hotel reservation:</b>	<b>15<sup>th</sup> May 2002</b>
<b>Deadline for cancellation of participation:</b>	<b>1<sup>st</sup> June 2002</b>
<b>Deadline for registration:</b> .....	<b>15<sup>th</sup> May 2002</b>
<b>Conference opening:</b> .....	<b>5<sup>th</sup> June 2002</b>

The organisers reserve the right to alter the programme if necessary. For up-to-date and additional information please contact the conference site:

<http://www.kc.kuleuven.ac.be/ptee2002/>