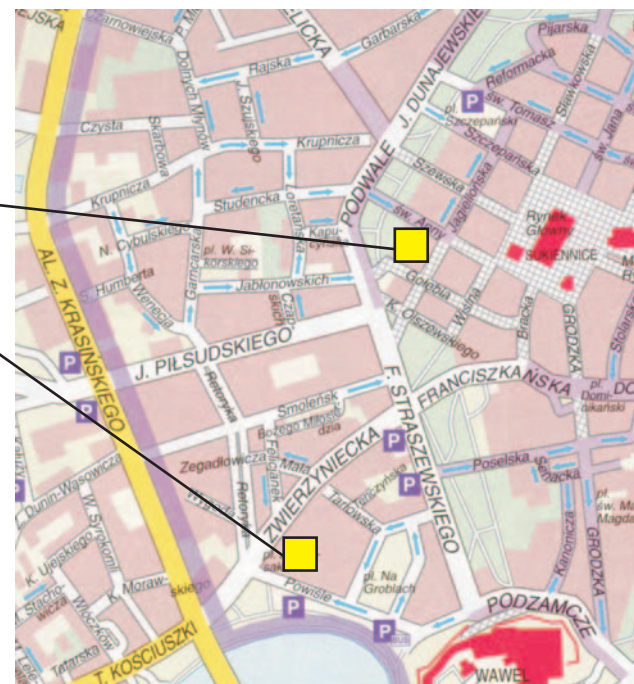


Collegium Maius  
of the Jagiellonian University,  
ul. Jagiellońska 15  
(Conference dinner)

SHERATON Hotel,  
ul. Powiśle 7  
(Conference venue)



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Central Institute for Labour Protection  
- National Research Institute  
ul. Czerniakowska 16, 00-701 Warsaw, Poland

**CIOP**  **PIB**

**International Conference**  
Research and standardization  
in the field of development and use  
of personal protective equipment

**FINAL  
PROGRAMME**



**12-14 September 2005, Cracow**



COMPETITIVE AND SUSTAINABLE GROWTH  
(GROWTH)



## ORGANIZATION

Central Institute for Labour Protection - National  
Research Institute (CIOP-PIB)

## PATRONAGE

- Polish Minister of Economic Affairs and Labour  
- Horizontal Committee of Notified Bodies  
for the PPE Directive



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- Technical University of Łódź (Poland)  
- Institute for Terotechnology in Radom (Poland)

Prof. Bogusław Więcek, Ph.D.  
Jan Wojtysiak, Ph.D.

11:30 **SESSION 5B: Selection and use of personal protective equipment**  
Chairperson: Adam Lipowczan, Central Mining Institute, Poland  
Co-chair: Eero Korhonen, FIOH, Finland

11:30 *Protection against falls from height by means of retractable  
type fall arresters arranged horizontally*  
Krzysztof Baszczyński, CIOP-PIB, Poland

11:45 *Selection, use, care and maintenance of protective clothing*  
Henk Vanhoutte, European Safety Federation (ESF)

12:00 *Protecting recovery boiler workers against hot chemical splashes*  
Helena Mäkinen, Sanna Karkkula, Susanna Mäki, Hanna Koskinen,  
FIOH, Finland

12:15 *Comfort of using protective clothing*  
Stefan Brzeziński, Grażyna Malinowska, Teresa Nowak,  
Institute of Textile Materials Engineering, Poland

12:30 *Barrierity of protective materials towards liquid chemicals  
in different use conditions*  
Sylvia Krzemińska, Krzysztof Łęzak, CIOP-PIB, Poland

12:45 *Assessment of usage comfort of respiratory protective devices  
in practical performance tests*  
Agnieszka Brochocka, Krzysztof Makowski, CIOP-PIB, Poland

13:00 Discussion

13:15 **CONCLUSIONS and CLOSURE**

13:30 Lunch

## SPONSORS



Wednesday, September 14, 2005

Wednesday, September 14, 2005

- 9:00 **PLENARY LECTURE**  
*The new UK approach to selection of respiratory protective equipment*  
**Norman West, Nick Vaughan**, HSL, UK  
**Robert Rajan-Sithamparanadarajah**, HSE, UK
- 9:20 **SESSION 5A: Selection and use of personal protective equipment**  
**Chairperson: Katarzyna Majchrzycka**, CIOP-PIB, Poland  
**Co-chair: Helena Mäkinen**, FIOH, Finland
- 9:20 *Specific selection and application of individual protective clothing in underground mining*  
**Adam Lipowczan**, Central Mining Institute, Poland
- 9:35 *The selection and use of PPEs in mining industry: how long can standardization reach?*  
**Jesús Portillo**, INSHT, Spain
- 9:50 *Assessment of noise attenuation provided by ear-muffs at noisy work-stands*  
**Ewa Kotarbińska, Emil Kozłowski**, CIOP-PIB, Poland
- 10:05 *The KCL Concept. The right way to select gloves*  
**Johanna Huehn**, KCL GmbH, Germany
- 10:20 *Survey concerning the use of personal protective equipment in small and medium enterprises*  
**Adam Pościk**, CIOP-PIB, Poland
- 10:35 *Selection & use and care & maintenance of chemical protective clothing. An information system for responsible persons and user*  
**Torsten Hinz**, Institute of Technology And Biosystems Engineering, Federal Agricultural Research Centre, Germany
- 10:50 **Discussion**
- 11:00 **Coffee break**

Dear Colleagues,

European Union regulations on occupational safety and health and on the internal market require that personal protective equipment (PPE) used in the working and living environment should ensure ultimate protection in the anticipated conditions of use. At the same time it should be adapted to the users' psychophysical conditions and needs. Due to the diversity of hazards, their changing intensity and the increasingly recognized ergonomic aspects of the work process, it is necessary to disseminate the results of research and implementation work carried out to develop new testing methods and assessment criteria. It is also necessary to introduce training courses and tools supporting selection and use of new designs and materials for PPE. This process should be supported by a dialogue and exchange of experience among research institutes and certification bodies, PPE users, designers and manufacturers.

The enlargement of the European Union by the New Member States, and of the internal market by new economic entities, has created an additional need for an exchange of information and experience especially in the field of the compliance of PPE with the health, safety and ergonomics requirements and conformity assessment procedures laid down in the Directive 686/89/EEC, as well as with the market surveillance rules.

The programme of the Conference includes the following topics:

- Research in development and use of personal protective equipment
- New technologies in production of personal protective equipment
- Standardization in the field of personal protective equipment
- Problems of market surveillance of personal protective equipment
- Selection and use of personal protective equipment.

The Conference is organized under the honorary patronage of the Polish Minister of Economic Affairs and Labour and the Horizontal Committee of Notified Bodies for the PPE Directive. The Conference is an important event of the project TEST-PRO-SAFETY-LIFE (Centre for Testing and Measurement for Improvement of Safety of Products and Working Life), which is carried out within the 5th Framework Programme of the European Union.

The Organizing Committee expresses its heartfelt thanks to members of the Scientific Committee of the Conference for their effort and great involvement.

I hope you will enjoy both the scientific programme of the Conference and the historical monuments of the royal city of Cracow.

Dr. Daniel Podgórski  
Chair of the Organizing Committee

Monday, September 12, 2005

- 9:00 **REGISTRATION**
- 10:00 **OPENING**  
**Danuta Koradecka**  
Central Institute for Labour Protection - National Research Institute, Poland  
**Wojciech Maj**  
Industrial Policy Department of the Ministry of Economic Affairs and Labour, Poland  
**Eberhard Christ**  
Horizontal Committee of Notified Bodies for the PPE Directive
- 10:40 **PLENARY LECTURE**  
*Improvement of standards for Personal Protective Equipment - a European approach, Joachim Lambert, KAN, Germany*
- 11:00 **Coffee break**
- 11:30 **SESSION 1A: Research in development and use of personal protective equipment**  
**Chairperson: Norman West, HSL, UK**  
**Co-chair: Jean-Claude Cannot, CTC Environment, France**
- 11:30 *Objective testing of the conspicuity performance of high-visibility warning clothing*  
**Michel Longrée, Jean Léonard, CENTEXBEL, Belgium**  
**Johan Wagemans, University of Leuven, Belgium**
- 11:45 *Signalization of chemicals permeation through protective gloves*  
**Katarzyna Szczecińska, CIOP-PIB, Poland**
- 12:00 *A physically rigorous model for heat transfer between the wearer of personal protective equipment and the environment*  
**Robin Howie, Robin Howie Associates, UK**
- 12:15 *Metabolic and respiratory demands in fire-fighting - implications for protective equipment*  
**Ingvar Holmér, Lund University, Sweden**
- 12:30 *Laboratory measurement of attenuation of high level impulse noise by hearing protectors*  
**Jan Żera, Rafał Młyński, CIOP-PIB, Poland**
- 12:45 **Discussion**
- 13:00 **Lunch**

- 14:30 *Definition of a standard for footwear protecting against chemicals and micro-organisms*  
**Jean-Claude Cannot, CTC Environment, France**
- 14:45 *PPE for pesticide applicators: performance of protective clothing materials with repellent finishes*  
**Anugrah Shaw, Sivarangini Pagadala**  
University of Maryland Eastern Shore, USA
- 15:00 **Discussion**
- 15:15 **Coffee break**
- 15:45 **PLENARY LECTURE**  
*Successful market surveillance based on co-operation of national authorities and notified bodies in the field of PPE*  
**Eberhard Christ, BGIA, Germany**
- 16:05 **SESSION 4: Problems of market surveillance of personal protective equipment**  
**Chairperson: Daniel Podgórski, CIOP-PIB, Poland**  
**Co-chair: Henk Vanhoutte, European Safety Federation**
- 16:05 *The impact of market surveillance on the improvement of PPE's quality: the Spanish experience*  
**Jesús Portillo, Manuel Montes, INSHT, Spain**
- 16:20 *The activities of the National Labour Inspectorate in the field of supervision and inspection of personal protective equipment*  
**Tomasz Gdowski, National Labour Inspectorate, Poland**
- 16:35 *Organization of the market surveillance system for personal protective equipment used in mining plants in the light of hitherto experience*  
**Jan Migda, Piotr Wawrzyńczok, State Mining Authority, Poland**
- 16:50 **Discussion**
- 17:00 **End of the session**
- 19:00 **Dinner at Collegium Maius of the Jagiellonian University**

Tuesday, September 13, 2005

Tuesday, September 13, 2005

- 11:30 **PLENARY LECTURE**  
*The contribution of the research to the European Standardization on PPE. Evaluation of the situation and prospects*  
**Alain Mayer**, INRS, France
- 11:50 **SESSION 3A: Standardization in the field of personal protective equipment**  
**Chairperson: Joachim Lambert**, KAN, Germany  
**Co-chair: Grażyna Bartkowiak**, CIOP-PIB, Poland
- 11:50 *Normative requirements for the respiratory protective equipment for escape with chemically connected oxygen (KO<sub>2</sub>). The analysis of the examination methods and the technical requirements according to EN 13794*  
**Mirosław Bagiński**, Central Station of Mining Rescue, Poland
- 12:05 *Standardised testing of hearing protectors and their effectiveness in the conditions of use*  
**Martin Liedtke**, BGIA, Germany
- 12:20 *Practice-oriented test standard for the evaluation of protective clothing against the risks of an electrical arc CLC/TS 50354 Box Test*  
**Holger Schau**, TUI, Germany, **Hendrik Beier**, STFI, Germany
- 12:35 *Reflections on European Directive 89/686 Annex II and Standardization on PPE*  
**Siegfried Assmann**, ALWIT GmbH, Germany
- 12:50 **Discussion**
- 13:00 **Lunch**
- 14:00 **SESSION 3B: Standardization in the field of personal protective equipment**  
**Chairperson: Alain Mayer**, INRS, France  
**Co-chair: Dariusz Pleban**, CIOP-PIB, Poland
- 14:00 *Needs for valid practical performance test methods of Personal Protective Equipment - A case report*  
**Raija Ilmarinen**, Eero Korhonen, FIOH, Finland
- 14:15 *Respiratory self-escape devices: imperative need for establishing a new category of respiratory protective equipment*  
**Marina Bludyan**, Epicenter Market LLC, Russia

- 14:00 **PLENARY LECTURE**  
*Globalisation and the European PPE market*  
**Henk Vanhoutte**, European Safety Federation (ESF)
- 14:20 **SESSION 1B: Research in development and use of personal protective equipment**  
**Chairperson: Eberhard Christ**, Horizontal Committee of Notified Bodies for the PPE Directive  
**Co-chair: Bogusław Więcek**, Technical University of Lodz, Poland
- 14:20 *Structural resistance of PPE to ultra high-pressure (U.H.P.) water jets*  
**Patrice Marchal**, INRS, France
- 14:35 *The influence of flow patterns on the break through performance of toxic industrial materials on various filter canister*  
**Leo Steenweg**, **Marco Linders**, **Sven van der Gijp**, TNO Defence and Safety, The Netherlands
- 14:50 *Experimental investigation of the variability in the protection characteristics provided by identical N95 respirators*  
**Anna Bałazy**, **Albert Podgórski**, Warsaw University of Technology, Poland  
**Mika Toivola**, **Dainius Martuzevicius**, **Sergey Grinshpun**, Center for Health-Related Aerosol Studies, University of Cincinnati, USA
- 15:05 *Scientific approach to creating head protecting PPE. Evaluating force of impact*  
**Vladimir Efimovich Rodin**, Labour Safety Scientific Research Institute, Russia
- 15:20 *Thermographic study on hand cooling process caused by vasoconstriction in a cold environment*  
**Agnieszka Andrzejewska**, CIOP-PIB, Poland
- 15:35 **Discussion**
- 15:50 **Coffee break**

Monday, September 12, 2005

Monday, September 12, 2005

- 16:20 **SESSION 1C: Research in development and use of personal protective equipment**  
**Chairperson: Karl-Heinz Noetel**, BG BAU, Germany  
**Co-chair: Martin Liedtke**, BGIA, Germany
- 16:20 *Uncertainty of measurement in testing of personal protective equipment*  
**Grzegorz Owczarek**, CIOP-PIB, Poland  
**Michel Jacques**, INRS, France
- 16:35 *Safety critical testing of slip resistance properties of footwear*  
**Mike Wilson**, SATRA Technology Center, UK
- 16:50 *Dynamics of microclimate formation in safety footwear*  
**Wiesława Kamińska**, CIOP-PIB, Poland
- 17:05 *Protective elements in the protective and safety footwear - influence on the comfort of use*  
**Ewa Woźniak, Zbigniew Olejniczak, Agnieszka Mileszczak, Bogusław Woźniak**, Leather Industry Institute, Poland
- 17:20 *Respiratory protection equipment assessment criteria and their real use conditions*  
**Piotr Pietrowski**, CIOP-PIB, Poland
- 17:35 **Discussion**
- 17:45 **End of the session**

- 9:00 **PLENARY LECTURE**  
*Bioactive filtering materials for protection against bioaerosol*  
**Katarzyna Majchrzycka**, CIOP-PIB, Poland
- 9:20 **SESSION 2: New technologies in production of personal protective equipment**  
**Chairperson: Leon Gradoń**, Warsaw University of Technology, Poland  
**Co-chair: Ingvar Holmér**, Lund University, Sweden
- 9:20 *Enhancement of removal of ultrafine aerosol particles in nanofibrous filters*  
**Albert Podgórski, Leon Gradoń, Anna Bałazy**  
Warsaw University of Technology, Poland
- 9:35 *Production and characterization of nanofibrous filters for respirators*  
**Leon Gradoń, Albert Podgórski, Anna Bałazy**  
Warsaw University of Technology, Poland
- 9:50 *Manufacture process in the research experiments on nonwoven materials for work protection*  
**Kazimierz Ruskowski, Jan Wojtysiak**,  
Institute of Terotechnology, Poland
- 10:05 *Assessment of textiles used as protection against electrostatic discharges*  
**Małgorzata Cieślak, Stanisława Wróbel**  
Institute of Textile Materials Engineering, Poland
- 10:20 *New types of materials for protective clothing used under extreme conditions*  
**Stefan Brzeziński, Krystyna Robaczyńska, Marek Lao, Małgorzata Szejna**, Institute of Textile Materials Engineering, Poland
- 10:35 *Modelling of new material design and construction of protective clothing*  
**Grażyna Bartkowiak, Agnieszka Kurczewska, Krzysztof Łęzak**  
CIOP-PIB, Poland
- 10:50 **Discussion**
- 11:00 **Coffee break**

Tuesday, September 13, 2005