IVIS

9th International Vacuum Insulation Symposium

High thermal performance and more space from thin insulations

17 and 18 September 2009

The Royal Institution of Great Britain

21 Albemarle Street
London
W1S 4BS

www.ivisnet.org

## Programme at the Royal Institution

Vacuum Insulation Panels consist of a gas-tight enclosure and a rigid core from which the air has been evacuated.

By removing air from fibre, powder, or foam core materials VIPs achieve low U values at a fraction of the thickness of cut-to-fit insulation materials. VIP products are made-to-fit architectural details, with specified service lives for floor, wall, and roof constructions. Quality control of component manufacture is important. Meet the VIP manufacturers, their researchers, and the construction product manufacturers with an interest in meeting your architectural demands.

## Wednesday 16 September 2009

18.00 to 20.00 **Tour of the Royal Institution Museum**

The RI Museum curator Frank James has kindly agreed to give a guided tour for registered IVIS delegates arriving early. There will be drinks in the bar afterwards. To join the free tour please email Ian Abley on abley@audacity.org

## Climate Change: The Key Role of Energy Efficiency

## Professor Ernst Worrell

Ernst is Professor of Energy, Materials and the Environment at Utrecht University, in the Copernicus Institute. He is also manager of Energy Efficiency at Ecofys, on www.ecofys.com. Ernst led the industrial energy assessment work at Lawrence Berkeley National Laboratory until 2008. Until 1998 he co-led the Energy and Material Efficiency Group at the Department of Science, Technology and Society of Utrecht University, in the Netherlands. He was a visiting scientist at the Center for Energy and Environmental Studies at Princeton University from 1994 to 1995, and a visiting professor at the Universidade de Sao Paulo, Brazil, in 1996. He is author of four IPCC reports, including the 4th Assessment Report. The co-author of over 250 publications, Ernst is Editor-in-Chief of the leading peer-reviewed journal *Resources, Conservation and Recycling*. He is associate editor of *Energy*, and editorial board member of the journal *Waste Management*.

## Media Partners

DETAIL bd

## Thursday 17 September 2009

08.30 to 09.30 **Registration**
09.30 to 09.45 **Welcome to IVIS 2009**

Professor Ray Ogden and Dr Mauro Overend

09.45 to 10.30 **Keynote Speaker**

Professor Ernst Worrell

10.30 to 11.00 **Refreshments**

## 1 The VIP Challenge

**Materials and Manufacturing**

**1A** *How to identify a high quality VIP*
Gregor Erbenich

**1B** *VIPs with overlapping edges, and other improvements in the ways a VIP can be manufactured*
Roland Caps

**1C** *Accelerated lifetime testing of VIPs*
Bob Keller

**1D** *Fibre-powder composite as a core material for VIPs*
Phalguni Mukhopadhyaya

**1E** *Microscopic investigation of laminates for VIPs*
Samuel Brunner

13.00 to 14.00 **Buffet Lunch and Demonstration**

**17** *Vacuumatics - architectural structures and form*
Frank Huijben

## 2 VIP Innovations

**Product Development**

**2A** *Structural VIPs*
Dwight S. Musgrave

**2B** *Beyond VIPs – How may it be achieved?*
Bjørn Petter Jelle

**2C** *High thermal efficiency panels for glazed facades*
Phil Deighton

**2D** *Gen3 long life high performance VIPs for construction*
Stan Rusek

15.30 to 16.00 **Refreshments**

## 3 VIPs in Practice

**Industry Needs and Case Studies**

**3A** *How laminates with Ethylene Vinyl Alcohol film (EVOH) improve the performance of VIPs*
Cynthia Teniers

**3B** *What the residential building sector needs from a VIP*
Clifford Fudge

**3C** *The development of prefabricated masonry walls using traditional materials and incorporating VIPs*
Paul Rogatzki

**3D** *VIP insulating a 7 storey mixed-use building in Munich*
Martin Pool

17.30 to 17.45 **Close of first day before dinner**

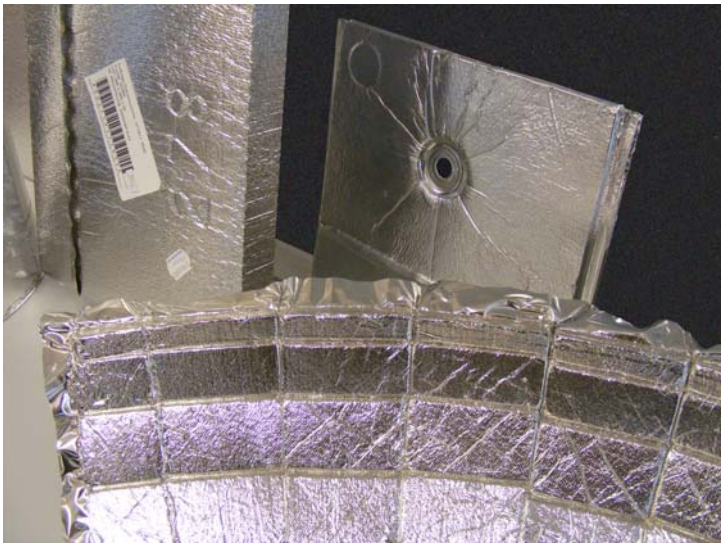
## Thursday 17 September 2009
## Gala Dinner - Royal Institution

Dinner at the Time & Space restaurant in the RI starts with drinks at 19.00. At 19.30, before dinner, Professor Richard Horden will talk about the design and production of the vacuum insulated micro compact home, sponsored by O2, and on www.microcompacthome.com

## Intelligent Building Facades

## Professor Derek Clements-Croome

Derek is Professor of Construction Engineering, Director of the MSc Intelligent Buildings Programme, and Director of Research in the School of Construction Management and Engineering at the University of Reading. He is Chairman of the Natural Ventilation Group and the Intelligent Buildings Group for the Chartered Institution of Building Services Engineers. He was Vice-President of CIBSE for 2007/2008, and is a Board Member for the British Council of Offices. He researches high value design and management processes, individual environmental control, and environmental design for human needs. He is the author of several books, including *Creating the Productive Workplace*, Routledge, 2005; *Intelligent Buildings, Design, Management & Operation*, Telford Press, 2004 (also published in Chinese); *Electromagnetic Environments and Health in Buildings*, E & FN Spon, 2003; *Airconditioning and Ventilations of Buildings*, Pergamon Press, 1981 (also in Chinese and Russian); and *Noise, Buildings and People*, Pergamon Press, 1977.



## Discussion and Prospects

## Professor Jochen Fricke

Jochen has worked in the field of advanced insulation for much of his career. He is scientific consultant at ZAE Bayern in Würzburg, and chaired IVIS 2007. He was appointed speaker for the Bavarian Energy Technology Cluster by the Bavarian Ministry of Economics in 2006. Jochen will lead the discussion to consider the many prospects for commercial development and application of vacuum insulation panels.

## Friday 18 September 2009

08.30 to 09.30 **Registration**
09.30 to 09.45 **Welcome back**

Professor Ray Ogden and Dr Mauro Overend

09.45 to 10.30 **Keynote Speaker**

Professor Derek Clements-Croome

10.30 to 11.00 **Refreshments**

## 4 VIP Performance
**Optimisation, Testing, and Modelling**

**4A** *Expanded polystyrene (EPS) encapsulated VIPs*
Martin Tenpierik
**4B** *Comparison of laboratory investigations and numerical simulations of VIPs in various wall structures*
Steinar Grynning
**4C** *Dynamic simulation of VIP moisture and heat transport*
Andreas Beck
**4D** *Parametric study of a metal sandwich VIP*
Kjartan Gudmundsson
**4E** *Parametric feasibility study on active VIPs for buildings*
Alex Muir

13.00 to 14.00 **Buffet Lunch and Demonstration**

**18** *Regulatory and other barriers to overcome*
Rupert Scott

## 5 VIPs in Service
**Monitoring and Evaluation**

**5A** *Quality assurance and declaration of vacuum insulation for building application*
Samuel Brunner
**5B** The *Economic Case for Vacuum Insulation in Mainstream New Build Construction Applications*
Ray Ogden
**5C** *Tests of VIPs in simulation, laboratory, and practice*
Georg Wilhelm Mainka
**5D** *VIP-PROVE – Vacuum insulation for buildings in the practical application*
Ulrich Heinemann
**5E** *Making the most of Permitted Development Rights*
Stephen Ibbitson

16.00 to 16.30 **Refreshments**

16.30 to 17.45 **Discussion and Prospects**

**6A** *The Future of VIPs – Challenges and Opportunities*
Professor Jochen Fricke
**6B** *It's not just the VIP it's the whole systems offering*
Tim Hall

17.45 to 18.00 **Close of IVIS 2009**

## For more information contact

For website issues contact Bousmaha Baiche at Oxford Brookes University by email on bbaiche@brookes.ac.uk