



11th International Vacuum Insulation Symposium, Duebendorf

Programm

Wednesday, September 18, 2013

18:00 IVIS Registration and Reception

Thursday, September 19, 2013

8:00 IVIS Registration

9:00 Welcome speech and introduction to Empa [Prof. Gian-Luca Bona](#),

Welcome of Head of "Building Science and Technology Lab" [Prof. Jan Carmeliet](#)

- ❖ **Keynote lecture:** Vacuum Insulation Panels - Potentials, Challenges and Applications - An Introduction
[Ulrich Heinemann](#)
- ❖ **Keynote lecture**
[Beat Kämpfen](#) VIP used in Buildings

10.30 **Break**

11.00 **Session: Models of heat and moisture transfer**

- ❖ New exploratory testing conditions to understand the gas transfer mechanisms through VIPs' barriers
[Mathias Bouquerel and Thierry Duforestel](#)
- ❖ Numerical Examination of Thermal Bridging Effects at the Edges of Vacuum-Insulation-Panels (VIP) in various Constructions
[Christoph Sprengard](#)
- ❖ Next-generation curtain walling with vacuum insulation panels – Energy performance and design freedom
[Mikkel Kragh and Valerie Hayez](#)

12:10 **Lunch**

Session: VIP in Buildings1

- ❖ VIP as Thermal Breaker for Interior Insulation System
[Herbért Sallée, Daniel Quénard, Emmanuel Valenti and Michel Galan](#)
- ❖ Interior insulation retrofit of a brick wall using vacuum insulation panels: measured hygrothermal effect on existing structure and wooden beam ends,
[Pär Johansson, Berit Time, Stig Geving, Carl-Eric Hagentoft, Angela Sasic, Bjørn Petter Jelle and Egil Rognvik](#)
- ❖ Accelerated Ageing and Global Warming Potential of VIP Thermal Insulation,
[Roman Kunič](#)
- ❖ Energy Design of Masonry Sandwich Element Blocks
[Berit Time, Sivert Uvsløkk, Arild Gustavsen, Lars Gullbrekken, Mark Murphy and Oddvar Hyrve](#)
- ❖ Interactions between barrier multilayer films and core material for service life
[Bernard Yrieix, Emmanuelle Pons, Claude Pompeo and Daniel Quénard](#)

15.45 **Break**

16:25 **Session: VIP in Refrigerators**

- ❖ **Keynote lecture:** VIP in Refrigerators [Yusuf Yusufoglu](#)
- ❖ Vacuum insulation panels (VIP) in refrigerator room, freezing room & fridge
[Samuel Brunner, Karim Ghazi Wakili and Pär Johansson](#)

- ❖ Thermal Conductivity measured at center of panel - that is only half of the truth!
[Hans-Frieder Eberhardt](#)
- ❖ **Keynote lecture:** [Fabian Eschenbach](#) VIP for transport boxes

19:00 Apéro at ETH Main building "Dozentenfoyer"

20:00 Dinner at ETH Main building "Dozentenfoyer"

Friday, September 20, 2013

08.30 Session: VIP Core Materials 1

- ❖ **Keynote lecture:** VIP using fiber- based core materials [Seongmoon Jung](#)
- ❖ Thermal Performance of Two Different Glass fibers Based Vacuum Insulation Panels: A Comparative Study
[Wangping Wu](#), [Yanqing Zhou](#), [Xiaoyuan Hu](#), [Zhaofeng Chen](#)
- ❖ Glass fiber based vacuum insulation panels - comparative study of properties and aging
[Fred Edmond Boafo](#), [Zhaofeng Chen](#), [Wu Wangping](#) and [Tengzhou Xu](#)
- ❖ Synthesis and characterization of melamine – formaldehyde rigid foams
[Vincenc Nemanič](#), [B. Zajec](#), [M. Žumer](#), [N. Figar](#), [M. Kavšek](#) and [I. Mihelič](#)
- ❖ Effect of Radiative Scattering Pattern on Insulation Performance of VIP Filler Materials
[Bongsu Choi](#), [Inseok Yeo](#) and [Tae-Ho Song](#)

10.30 Break

11.00 Session: VIP Core Materials 2

- ❖ **Keynote lecture:** Getters [Cristoforo Benvenuti](#)
- ❖ Hollow Silica Nanospheres as a Superinsulating Material
[Mathieu Grandcolas](#), [Georges Etienne](#), [Bente Gilbu Tilset](#), [Tao Gao](#), [Linn Ingunn Sandberg](#), [Arild Gustavsen](#) and [Bjørn Petter Jelle](#)
- ❖ A methodology for thermal performance testing of Vacuum Insulation Panel (VIP)
[Mahmood Alam](#) and [Harjit Singh](#)

12:25 Lunch

13.30 Session: VIP in Buildings 2

- ❖ **Keynote lecture:** NEST – a Research and Technology Transfer Platform of the ETH Domain
[Peter Richner](#)
- ❖ Thermal high-performance walls for precast concrete sandwich panels
[Thierry Voellinger](#)
- ❖ Measurement of airborne sound transmission loss of a small-scale assembly containing vacuum insulated panels
[Bradford Gover](#), [Frances King](#), [Stefan Schoenwald](#), [Phalguni Mukhopadhyaya](#) and [David van Reenen](#)
- ❖ In Situ Performance Assessment of a Composite Insulation System Consisting of Mineral Wool and Vacuum Insulation Panels
[Ioannis Mandilaras](#), [I. Atsonios](#), [G. Zannis](#), [Maria Founti](#).

15.00 Break

Session: VIP envelopes and general developments

- ❖ Permeation of water vapor through high performance laminates for VIP
[Luc Heymans](#), [Bernard Yrieix](#) and [Emmanuelle Pons](#)
- ❖ Accurate Prediction of the Lifetime Performance of VIPs: Challenges and Working Solutions
[Yoash Carmi](#)
- ❖ Physical characterization of sorption and diffusion of water vapor through ultra barrier for VIP
[Emmanuelle Pons](#), [Bernard Yrieix](#), [Emilie Planes](#), and [Florence Dubelley](#)
- ❖ Degradations of barrier multilayer films exposed to high temperature and/ or humidity
[Lionel Flandin](#), [Florence Dubelley](#), [Emilie Planes](#), [Corine Bas](#), [Emmanuelle Pons](#) and [Bernard Yrieix](#)

- ❖ Barrier Development and Testing for Warm Applications
[Dwight S. Musgrave](#)
- ❖ Development of novel opaque and transparent barrier films for VIP-encapsulation - Part-II: Barrier film production for VIPs
[Klaus Noller](#), [Oliver Miesbauer](#), [Sandra Kiese](#), [Yoash Carmi](#), [Esra Küçükpinar](#)
- ❖ In-Situ energy performance of residential wood-frame constructions retrofitted using VIPs
[Wahid Maref](#), [Hamed H. Saber](#), [Ganapathy, G.](#) and [Nicholls, M.](#)

18:30 End

Speaker underlined

Postersessions

Postersession part 1 Thursday September 19

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| 1 | Combined operational and embodied carbon justification for VIPs used in envelope insulation | Ray G. Ogden , Shahaboddin Resalati , Cris C. Kendrick |
| 2 | Structure of Vacuum Insulation Panel in Building System | Fred Edmond Boafo , Zhaofeng Chen* , Binbin Li , Tengzhou Xu , Chengdong Li |
| 3 | The Preparation and Properties of Silicon Rubber-Vacuum Insulation Panel | Lu Wang , Zhaofeng Chen* |
| 4 | The effect of core material layer thickness and pressure holding time on thermal conductivity of VIP | Chengdong Li , Zhaofeng Chen,* , Fred Edmond Boafo , Jieming Zhou |
| 6 | A comparative study of Methods for Evaluating the Thermal Conductivity of Aerogels for vacuum insulation panels | Peyman Karami , Kjartan Gudmundsson , |
| 7 | Studies of an exterior cladding system with VIPs for buildings from the Swedish million unit program. | Peyman Karami , Kjartan Gudmundsson , |
| 9 | Effect of the blow-off rate on the envelope material and vacuum insulation panel | Zhaofeng Chen* , Chengdong Li , Tengzhou Xu , Qing Chen , Shasha Jin , Fred Edmond Boafo |
| 10 | Effect of rotating speed on the diameter and distribution of glass fiber | Binbin Li,* , Zhaofeng Chen , Zhou Chen , Jieming Zhou |
| 11 | Glass Wool Core Material Produced by Dry Process | Yong YANG , Zhaofeng CHEN,* , Juan ZHANG , Renli FU , Zhou CHEN , Jieming Zhou |
| 12 | A Study of Accessible Vacuum State for the Insulation Space in LNGC Cargo Containment System | J.K.Kang , Y.B.Kwon , J.S.Shin |
| 13 | Development of novel opaque and transparent barrier films for VIP-encapsulation -Part-I: Concept | Oliver Miesbauer , Esra Küçükpinar , Sandra Kiese , Klaus Noller , Horst-Christian Langowski |
| 14 | An alternative façade design to allow for Vacuum Insulation Panels in Housing | Thomas Thorsell |

Postersession part 2 Friday September 20

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| 15 | Study on structure and processing of high-barrier envelope for VIP | Tengzhou Xu , Zhaofeng Chen* , Shasha Jin |
| 16 | Nanostructured Composites of Silica Aerogels with Hydroxy Terminated Poly(dimethylsiloxane) as Core Materials for Transparent Vacuum Insulation Panels | Deniz Sanli , Leif Gullberg , Roland Andersson , Can Erkey |
| 17 | Study of heat sealing of polymer-metal multilayers used for vacuum insulation panels | Florence Dubelley , Emilie Planes , Corine Bas , Bernard Yrieix , Emmanuelle Pons , Lionel Flandin |
| 18 | Hydric behaviour of silica for VIP and ageing | Benoit Morel , Emmanuelle Pons , Bernard Yrieix |
| 19 | The Ageing Effects of Vacuum Insulation Panels (VIPs) on the Long Term Thermal Performance of a Building Envelope with the use of Dynamic Simulation Tools | Malliotakis Emmanouil , Mandilaras Ioannis. , Katsourinis* Dimitris , Founti Maria |
| 20 | Field Application and Long-Term Thermal Performance of Vacuum Insulation Panels (VIPs) in Canadian Arctic Climate | Phalguni Mukhopadhyaya , Doug MacLean , Juergen Korn , David van Reenen , Sudhakar Molleti |
| 21 | Experimental Pathways for Achieving Superinsulation through Nano Insulation Materials | Bjørn Petter Jelle , Tao Gao , Bente Gilbu Tilset , Linn Ingunn Sandberg , Mathieu Grandcolas , Georges Etienne , Christian Simon and Arild Gustavsen |
| 22 | Experimental and Theoretical Study of Vacuum Pressure in Evacuated Windows Used in Energy Efficient Buildings | Farid Arya , Trevor Hyde , Yueping Fang |
| 23 | VIP in building refurbishment | Bruno Guanziroli |

- 24 Vacuum Insulation Panels (VIPs) Encased in Stainless Steel Envelopes Alan D. [Feinerman](#), Prateek Gupta, Craig Foster, David W. Yarbrough, Jan Kosny and David Stucker
- 25 Model benchmarking for field energy retrofit towards highly insulated residential wood-frame construction using VIPs Hamed.H [Saber](#), Wahid Maref, Gnanamurugan Ganapathy and M. Nicholls.