

IVIS KYOTO 2019

- 14th -

International Vacuum Insulation Symposium

September 19 - 20, 2019, Kyoto, Japan

PROGRAM (tentative version: 2019/08/19)

Thursday 19 September 2019

8:00 Welcome registration

9:00 Opening Ceremony

Atsushi Iwamae (IVIS2019 Chairman)

Masahiro Oshima (Dean, Graduate School of Engineering, Kyoto University, Japan)

Gregor Erbenich (VIPA International President)

Daisuke Ogura (IVIS2019 Secretary)

9:25-9:55 Keynote Speech (1)

Samuel Brunner (Empa, Switzerland)

“VIP aging and durability”

10:05-10:35 Keynote Speech (2)

Kazuki Nakanishi (Nagoya University, Japan)

“Aerogels -Transparent, Low-density Solids for Energy Management”

10:35-11:05 Keynote Speech (3)

Daisuke Ogura (Kyoto University, Japan)

“Heat and moisture research in Architecture and Cultural properties”

11:05-13:00 Lunch

13:00-14:00 Session 1: Porous Materials Part 1

Chairperson Christoph SPRENGARD (FIW Muenchen, Germany)

13:00-13:20 Critical Evaluation of Alternative Core Materials for VIPs

Phalguni Mukhopadhyaya (University of Victoria, Canada)

13:20-13:40 Development of VIP based on core insulators made from textile fibers

Jiri Zach (Brno University of Technology, Faculty of Civil engineering, Czech)

13:40-14:00 Sawdust based core material for eco-friendly Vacuum Insulation Panels (VIPs)

Mahmood Alam (University of Brighton, UK)

14:00-14:45 Poster Sessions + Coffee Break

The titles and presenters of the poster sessions

1. Molecular dynamic, a tool to assess Thermal and mechanical properties for representative microstructures of superinsulation products: Genevieve Foray (INSAVALOR, France)
2. Calibration Method on the Thermal Conductivity Measurement in the Central Part of Vacuum Insulation Panels (VIP) by Heat Flow Meter Apparatus: Kensaku Mabuchi (Japan Testing Center for Construction Materials, Japan)
3. Study on consideration of renovation methods of Kyomachiya using vacuum insulation panels and evaluation of heat insulation performance; Yui Nakazawa (Kyoto University, Japan)
4. Prediction on Long-term Thermal Performance of VIP using Glass Fiber Core Considering Influence of Getter: Taichi Tasaka (Japan Testing Center for Construction Materials, Japan)
5. Wood-based panels as core material for VIP: Sebastian Treml (FIW, Muenchen, Germany)
6. Studying the effect of surface chemistry on the mechanical properties of silica nano-structures through atomistic simulations: Wassim Kassem (INSA-Lyon, France)
7. Ultralight carbon-based composites foam with considerable thermal insulation: Junxiong Zhang (Nanjing University of Aeronautics and Astronautics, China)
8. Organic-inorganic hybridization approach to industrial applications of aerogels as transparent thermal insulating materials : Ryota Ueoka (Kyoto University, Japan)

14:45-15:45 Session 2: Porous Materials Part 2

Chairperson Phalguni MUKHOPADHYAYA (University of Victoria, Canada)

- 14:45-15:05 Impact of artificial ageing on mechanical and hygrothermal properties of Advanced-Porous-Materials (APMs) for buildings: Christoph Sprengard (FIW Muenchen, Germany)
- 15:05-15:25 Why does the mechanical behaviour of precipitated silica make them unsuitable today for their use in VIP cores?: Bernard Yrieix (EDF R&D, France)
- 15:25-15:45 Performance evolution of a new sub-micron pore size polymeric foam for vacuum insulation panels: Flavia Almeida(va-Q-tec AG, Germany)

15:45-16:30 Poster Sessions + Coffee Break

16:30-17:50 Session 3: Characterization Part 1

Chairperson Harjit SINGH (Brunel University London, UK)

- 16:30-16:50 Determination of anisotropic thermal conductivity of VIP laminate using Transient Plane Source method: Par Johansson (Chalmers University of Technology, Sweden)
- 16:50-17:10 Development of self-healing films to improve durability of VIPs by in-situ remediation of film defects: Kaushik Biswas (Oak Ridge National Laboratory, USA)
- 17:10-17:30 Super VIPs – Vacuum Panels with exceptionally low degradation rate: Yoash Carmi (Avery Dennison Israel, Israel)
- 17:30-17:50 Determining the air permeation rate into VIPs in less than 24 hours using He permeation:

Yoash Carmi (Avery Dennison Israel, Israel)

17:50-18:50 Shuttle Bus to Dinner

19:00-21:00 Dinner

Friday 20 September 2019

9:30-10:30 Session 4: Characterization Part 2

Chairperson Bernard YRIEIX (EDF R&D, France)

9:30-9:50 Thermal bridge effect of vacuum insulation panel and its measurement method:

Shang Mao (Shanghai Maritime University, China)

9:50-10:10 Increase of thermal conductivity of vacuum-panels with fumed silica cores in relation to absorbed moisture - hygrothermal simulations of measurement setups and typical use conditions: Christoph Sprengard (FIW Muenchen, Germany)

10:10-10:30 Correlation between thermal properties and internal microstructure of vacuum insulation panels with lamellar glass fiber core material: Zhou Chen (Nanjing Tech University, China)

10:30-11:00 Coffee Break

11:00-12:20 Session 5: Application

Chairperson Marco PERINO (Politecnico di Torino, Italy)

11:00-11:20 A cost-optimal sensitivity analysis of internal VIPs application in buildings:

Marcio Goncalves (ITeCons / University of Coimbra, Portugal)

11:20-11:40 Application of vacuum insulation panel in slim façade: from lab to in-situ experimental evaluations: Fred Edmond BOAFO (Kongju National University, Korea)

11:40-12:00 Study on thermal performance of VIP applied wall by installation method in building: Sang Myung Kim (Kongju National University, Korea)

12:00-12:20 Sustainable long life pipe insulation system for high temperature:

Xinli Ye (Nanjing University of Aeronautics and Astronautics, China)

12:20-13:20 Lunch

13:20-14:40 Session 6: Aging

Chairperson Par JOHANSSON (Chalmers University of Technology, Sweden)

13:20-13:40 Thermal and aging characterization of stand-alone and foam-embedded VIPs for building applications: Kaushik Biswas (Oak Ridge National Laboratory, USA)

13:40-14:00 Structural characterization of nanostructured silica ageing: Imaging and analyzing particles

and pores from a few nanometer up to 100nm: Bruno Chal (MATEIS, France)

14:00-14:20 Utilization of Vacuum insulation panels at the factory and comparison of long term performance measurement and prediction using micro pressure sensor:

Hideya Yamamoto(Asahi Fiber Glass Co., Ltd., Japan)

14:20-14:40 Aging of Glass Fiber Core VIPs in Arctic Canadian Climate:

Phalguni Mukhopadhyaya(University of Victoria, Canada)

14:40-15:10 Coffee break

15:10-16:30 Session 7: Application and LCA

Chairperson Genevieve FORAY (INSAVALOR, France)

15:10-15:30 The Wall-ACE project: Development of novel Aerogel-based solutions for energy efficient buildings:

Marco Perino (Politecnico di Torino, Italy)

15:30-15:50 Vacuum Insulation Panels for Fish Box:

Sankarshan Verma (Brunel University London, UK)

15:50-16:10 Aging Effects on Silica Aerogel and Aerogel Based Composites: A Literature Review Highlighting Pathways for Further Studies:

Ali Naman Karim(Chalmers University of Technology, Sweden)

16:10-16:30 A LCA Analysis of Vacuum Insulation Panels and their Sensitivity to Core Material Recycling Rate and Future Grid Decarbonisation Scenarios:

Shahaboddin Resalati (Oxford Brookes University, UK)

16:45-17:15 Closing Ceremony