

2025 International Vacuum Insulation Symposium

September 10-11, 2025

Crowne Plaza Hotel Downtown Knoxville

401 W Summit Hill Dr, Knoxville, TN 37902

Agenda updated on September 6, 2025

All times are in US Eastern Time

Event contact	Som Shrestha, 865-241-8772 (office); 515-509-4646 (mobile); shresthass@ornl.gov Andre Desjarlais, 865-574-0022 (office); 865-368-2364 (mobile); desjarlaisa@ornl.gov Admin: Nicole White, 865-341-2242 (office); whitenl@ornl.gov		
Day 1			
Time	Event	Location & Topics	Lead
Wednesday, September 10, 2025			
8:00 am - 8:25 am	Registration/Breakfast Served	Summit	Nicole White Kristen Summey Deandra Scott
8:25 am – 8:30 am	Introduction of keynote presenters and IVIS 2025 organizing committee members	Summit	Som Shrestha
8:30 am - 8:40 am	Welcome Address (Organizing Committee) / Working Breakfast	Summit	Josh Pihl, Buildings and Transportation Science Division Director, ORNL
8:40 am - 9:00 am	Keynote: Advancing High-Performance Envelopes: DOE R&D on Vacuum Insulated Technologies for Affordable, Resilient Buildings / Working Breakfast	Summit	Sven Mumme, Technology Manager for Opaque Envelope and Thermal Energy Storage R&D, Building Technologies Office (BTO) at the U.S. Department of Energy (DOE)
9:00 am - 10:15 am	Session 1: Core Materials and Their Properties. Session Chair: Prof. Harjit Singh, Brunel University of London, UK. Location: Summit		
9:00 am - 9:25 am	S1P1: Analysis of outgassing from natural fibers VIP core to improve their long-term performance. Achutha Tamraparni, Oak Ridge National Laboratory, USA		
9:25 am - 9:50 am	S1P2: Thermal performance evaluation of Calcium Silicate and Fumed Silica composite core materials for Vacuum Insulation Panels. Mahmood Alam / Waseem Abbasi, University of Brighton, UK		

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9:50 am - 10:15 am	S1P3: Development of Compacted Panels Based on Micronized Micro- and Nanocellular Polymers for Vacuum Insulation Panels (VIPs) <i>Victoria Bernardo, University of Valladolid, Spain</i>
10:15 am - 10:30 am	Coffee Break
10:30 am - 12:10 pm	Session 2: Core Materials and Their Properties. Session Chair: <i>Dr. Stefano Fantucci, Politecnico di Torino, Italy</i> . Location: Summit
10:30 am - 10:55 am	S2P1: Life cycle assessment of various core materials for vacuum insulation panels used at temperatures up to 70 °C. <i>Harjit Singh / Tarek Raad, Brunel University of London, UK</i>
10:55 am - 11:20 am	S2P2: Core materials for vacuum insulation panels made of renewable resources – characterization of selected thermal and mechanical aspects. <i>Sebastian Treml, Forschungsinstitut für Wärmeschutz, Germany</i>
11:20 am - 11:45 am	S2P3: On the reusability of expanded perlite cores- A critical step towards green vacuum insulation panels, <i>Dron Kaushik / Tarek Raad, Brunel University of London, UK</i>
11:45 am - 12:10 pm	S2P4: Development and Research of VIP Cool Box Manufactured with High-performance Phase Change Materials and its Ultra Long-term Thermal Insulation Performance. <i>Jason Lee, Nantong Ecotherm Insulations Co., Ltd., China</i>
12:10 pm - 1:30pm	Working Lunch: Summit Posters Presentations: Salon A. Lead: Som Shrestha - Developing an Active Vacuum Insulation System for Buildings. <i>Kaarle Strailey, University of Alaska Fairbanks, USA</i>. - Study of Low-Cost VIP Core by Utilizing High-Fibrous Content. <i>Mark Connell, Rincon Consulting, USA</i>. - Thermal Testing Challenges in Conversion of Waste Sourced Bio Fiber Material into Vacuum Insulation Panel. <i>Sai Bhargav Annavaajala, University of Massachusetts Lowell, USA</i> - Innovative Vacuum Insulated Glass Manufacturing: Low-Temperature Metallic Soldering and Pump-Out-Port-Free Sealing. <i>Adrian Song, LEADUS</i> Exhibition: Mezzanine
1:30 pm - 3:10 pm	Session 3: Core Materials Properties, Performance Evaluation, and Testing. Session Chair: <i>Achutha Tamraparni, Oak Ridge National Laboratory, USA</i> . Location: Summit
1:30 pm - 1:55 pm	S3P1: Medium-term thermal insulation performance test of an in situ-installed transparent vacuum insulation panel. <i>Erkki Hirvonen, Hokkaido University, Japan</i>
1:55 pm - 2:20pm	S3P2: Cost-effective thermal conductivity measurement system for vacuum insulation panels at temperatures up to 500 °C. <i>Dron Kaushik, Brunel University of London, UK</i>

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2:20 pm - 2:45 pm	S3P3: Long-term performance of glass fiber Vacuum Insulation Panels exposed to severe operating conditions in buildings. <i>Stefano Fantucci, Politecnico di Torino, Italy</i>
2:45 pm - 3:10 pm	S3P4: Cost-effective VIPs with aerogel cores. <i>Massimo Bertino, Virginia Commonwealth University, USA</i>
3:10 pm - 3:25 pm	Coffee Break
3:25 pm - 5:05 pm	Session 4: Performance Evaluation and Testing. Session Chair: <i>Anthony Aldykiewicz, Saint-Gobain USA</i> . Location: Summit
3:25 pm - 3:55 pm	S4P1: Long-term thermal performance of vacuum insulation panels in district heating pipes: Nine years of field measurements. <i>Ali Naman Karim, Chalmers University of Technology, Sweden</i>
3:50 pm - 4:15 pm	S4P2: Vacuum Insulation Panel Heat-Loss and Overall Thermal Resistance Based on Thermal Modeling. <i>David Yarbrough, R&D Services, Inc., USA</i>
4:15 pm - 4:40 pm	S4P3: Climate Dependent Aging of Vacuum Insulation Panels (VIPs). <i>Phalguni Mukhopadhyaya, University of Victoria, Canada</i>
4:40 pm - 5:05 pm	S4P4: Performance Evaluation of Vacuum Insulated Panel (VIP) Retrofits. <i>John Peavey / Emishaw Iffa, Home Innovation Research Lab, USA / Oak Ridge National Laboratory, USA</i>
5:05 pm - 6:00 pm	IVIS Board meeting – Summit Lead: <i>Harjit Singh, Brunel University of London, UK</i>
6:30 pm - 8:30 pm	Working Dinner , Location Summit Lead: Anthony Aldykiewicz IVIS Lifetime Achievement Awards Keynote presentations <i>Prof. Harjit Singh, IVIS Scientific Committee, Brunel University of London, UK</i> <i>Vladimir Pogac / Turvac (President of VIPA International), Sebastian Baars / Vaku-Isotherm (Vice President of VIPA International), John Balazs / Panasonic</i> . Shaping the Future of Insulation: Activities and projects that drive change. <i>John Peavey, Home Innovation Research Lab, USA</i> . Next Generation Wall Retrofit Panels with Integrated VIPs: Installation Options and Methods.
8:30 pm	Adjourn

Day 2

Thursday, September 11, 2025

Time	Event	Location & Topics	Other Details
8:00 am - 8:30 am	Registration/Breakfast Served	Summit	Nicole White Kristen Summey Deandra Scott
8:30 am - 8:45 am	Keynote “Overview of ARPA-E GLASING (Galvanizing Leaps in Advanced Super Insulating Glass) Program” / Working Breakfast	Summit	Jungho Kim, Program Director, Advanced Projects Research Agency-Energy (ARPA-E), USA
8:45 am - 9:00 am	Keynote “All About VIPA International”	Summit	Vladimir Pogač, President of the Vacuum Insulation Panel Association (VIPA)
9:00 am - 10:15 am	Session 5: Innovations in Vacuum Insulated Glazing. Session Chair: <i>Dr. Som Shrestha, Oak Ridge National Laboratory, USA</i> . Location: Summit		
9:00 am - 9:25 am	S5P1: Experimental and Simulation Analysis of Thermal Transmittance of Vacuum Insulated Glazing for Predicting Service Life. <i>Alexander Hayes, National Research Council of Canada, Canada</i>		
9:25 am - 9:50 am	S5P2: Transparent vacuum insulation panels for window insulation retrofit. <i>Takao Katsura, Hokkaido University, Japan</i>		
9:50 am - 10:15 am	S5P3: Innovations in VIG and the Barriers to Adoption. <i>Mahabir Bhandari, Oak Ridge National Laboratory, USA</i>		
10:15 am - 10:30 am	Coffee Break		
10:30 am - 12:10 pm	Session 6: Monitoring and Predictive Techniques of VIPs and Innovations in Vacuum Insulated Glazing. Session Chair: <i>Prof. G. Kumaresan, Anna University, India</i> . Location: Summit		
10:30 am - 10:55 am	S6P1: Residual Gas Conductance in Vacuum Insulated Glass. <i>Alliston Watts / Cenk Kocer, National Renewable Energy Laboratories (NREL) / University of Sydney</i>		
10:55 am - 11:20 am	S6P2: Updated VIG Thermal Performance Model in the WINDOW Software Tool. <i>Charlie Curcija, Lawrence Berkeley National Laboratory, USA</i>		
11:20 am - 11:45 am	S6P3: Real-Time Vacuum Monitoring and Lifespan Prediction of Vacuum Insulation Panels Using Fiber Bragg Grating Sensors and Acoustic Vibration Techniques. <i>Jason Lee / Zhaofeng Chen, Nanjing University of Aeronautics and Astronautics, China</i>		

Day 2

Thursday, September 11, 2025

Time	Event	Location & Topics	Other Details
11:45 am - 12:10 pm	S6P4: Real-Time Structural Health Monitoring of VIPs Using Metal Oxide and MXene-Based Sensors. <i>Jason Lee / Mahdi Mourad Laichaoui, Nantong Ecotherm Insulations Co., Ltd. / Nanjing University of Aeronautics and Astronautics, China</i>		
12:10 pm – 12:20 pm	Group Photo		
12:20 pm - 1:30 pm	Working Lunch: Summit Posters Presentations: Salon A. Lead: Som Shrestha - Developing an Active Vacuum Insulation System for Buildings. <i>Kaarle Strailey, University of Alaska Fairbanks, USA.</i> - Study of Low-Cost VIP Core by Utilizing High-Fibrous Content. <i>Mark Connell, Rincon Consulting, USA.</i> - Thermal Testing Challenges in Conversion of Waste Sourced Bio Fiber Material into Vacuum Insulation Panel. <i>Sai Bhargav Annavaajala, University of Massachusetts Lowell, USA</i> - Innovative Vacuum Insulated Glass Manufacturing: Low-Temperature Metallic Soldering and Pump-Out-Port-Free Sealing. <i>Adrian Song, LEADUS</i> Exhibition: Mezzanine		
1:30 pm – 4:40 pm	VIG Forum. Location Salon C		
1:30 pm - 3:10 pm	Session 7: Applications in Industry and Construction. Session Chair: <i>Dr. Mahmood Alam, University of Brighton, UK.</i> Location: Summit		
1:30 pm - 1:55 pm	S7P1: Industrialization of Vacuum Insulation in Aviation Industry. <i>Vakhtang Latsuzbaya, University of Stuttgart, Germany</i>		
1:55 pm - 2:20 pm	S7P2: Performance Assessment of District Cooling System for a Commercial Building in hot climate zone of India. <i>Kumaresan Govindaraj, Anna University, India</i>		
2:20 pm - 2:45 pm	S7P3: All-in-One Design and Fabrication of Vacuum Insulation Panels for Ultra-Efficient Pipeline Thermal Management. – Online Presentation. <i>Zhou Chen, Nanjing Tech University, China</i>		
2:45 pm - 3:10 pm	S7P4: Advanced Cryogenic Insulation Solutions Utilizing Vacuum Insulation Panels for Temperatures Below - 150°C. <i>Jason Lee / Zhaofeng Chen, Nanjing University of Aeronautics and Astronautics, China</i>		
3:10 pm - 3:25 pm	Coffee Break		

Day 2

Thursday, September 11, 2025

Time	Event	Location & Topics	Other Details
3:25 pm – 4:40 pm	Session 8: Innovations and Advanced Designs. Session Chair: <i>Prof. Phalguni Mukhopadhyaya, University of Victoria, Canada</i> . Location: Summit		
3:25 pm - 3:50 pm	S8P1: Self-Healing Ultra-High Barrier Films for Vacuum Insulation Panels. <i>Natasha Ghezawi, University of Tennessee, USA</i>		
3:30 pm - 4:15 pm	S8P2: Scalable Thermal Insulation Structures with Switchable Thermal Resistance for Thermal Insulation and Storage. <i>Yao Zhai / Vladyslav Sazhen, University of Missouri, USA</i>		
4:15 pm - 4:40 pm	S8P3: Structure design and performance study of high temperature resistant Vacuum Insulation Panel. <i>Lixia Yang, Nanjing University of Aeronautics and Astronautics, China</i>		
4:40 pm - 5:20 pm	Brainstorming session: Deployment barriers of VIPs and VIGs Lead: <i>Mark Connell, Rincon Consulting</i> Location: Summit		
5:20 pm - 5:30 pm	Best Paper Awards, Closing remarks, announcement of next IVIS location & adjourn Location: Summit Lead: Mark Connell		

International Vacuum Insulated Symposium 2025

Oak Ridge National Laboratory Tour

Prior registration and approval are required for the lab tour

Agenda as of August 13, 2025

Event contact	Host: Som Shrestha, 865-241-8772 (office); 515-509-4646 (mobile); shresthass@ornl.gov Host: Andre Desjarlais, 865-574-0022 (office); 865-368-2364 (mobile); desjarlaisa@ornl.gov Admin: Nicole White, 865-341-2242 (office); whitenl@ornl.gov			
ORNL Tours				
Time	Event	Lead	Attendees	Place
September 12 th , 2025				
8:00 a.m. – 8:30 a.m.	Load Buses for ORNL Tours	Nicole White	All registered for the tour	Crown Plaza Knoxville 401 W Summit Hill Dr Knoxville, TN 37902
8:30 a.m. - 9:00a.m.	Depart Crown Plaza Knoxville Downtown head towards ORNL (Rocky Top Tours)	Nicole White	All registered for the tour	Crown Plaza Knoxville 401 W Summit Hill Dr Knoxville, TN 37902
9:00 a.m. - 9:50a.m.	Arrive at ORNL and badge in	Nicole White	All	Visitor Center
9:50 a.m. – 10:00 a.m.	Arrive at MaxLab & Unload bus; meet in the front lobby	Nicole White	All	Bldg. 4020, Front Lobby
10:00 a.m. – 10:45 a.m.	MaxLab Tours	Kuma Sumathipala, Achutha Tamraparni, Mahabir Bhandari, Mikael Salonvaara	All	Bldg. 4020
10:45 a.m. – 10:50 a.m.	Load Buses Transition to Graphite Reactor	Nicole White	All	

10:50 a.m. – 11:45 a.m.	Graphite Reactor (first nuclear reactor intended for continuous operation) Tour	Brian Fricke	All	Bldg. 3001
11:45a.m. – 12:00 p.m.	Load Buses Transition to 5100	All	All	
12:00 p.m. – 1:15 p.m.	Highlights from the ORNL Building Technologies Program Working Lunch	Melissa Lapsa	All	Bldg. 5100 RM 128
1:15 p.m. – 1:20 p.m.	Transition to Summit Supercomputer Tour	Nicole White	All	
1:20 p.m. – 1:50 p.m.	Summit Supercomputer Tour	John Holmen Bill Renaud	All	Bldg. 5600
1:50 p.m. – 2:20 p.m.	Transition to Manufacturing Demonstration Facility (MDF) Hardin Valley Campus	Nicole White	All	
2:20 p.m. – 2:30 p.m. -	Unload buses; Meet in front lobby	Nicole White	All	Bldg. 2360HVC
2:30 p.m. – 3:30 p.m.	MDF Tour (4 groups)	Emma Betters Tyler Crisp Justin West Shramana Ghosh	All	Bldg. 2360HVC
3:30 p.m. – 3:45 p.m.	Load buses	Nicole White	All	Outside 2360HVC
3:45 p.m. – 4:10 p.m.	Depart for Crown Plaza Knoxville Downtown	All		Crown Plaza Knoxville 401 W Summit Hill Dr Knoxville, TN 37902
4:10 p.m.	Arrival at Crown Plaza Knoxville Downtown; then depart	Depart	Depart	Depart