



2024

HERRICK CONFERENCES

COMPRESSORS | REFRIGERATION | BUILDINGS

WEST LAFAYETTE, IN, USA

JULY 15-18, 2024

HOSTED BY:

**PURDUE CENTER FOR HIGH PERFORMANCE BUILDINGS
RAY W. HERRICK LABORATORIES**

27TH COMPRESSOR ENGINEERING | 20TH REFRIGERATION AND AIR CONDITIONING | 8TH HIGH PERFORMANCE BUILDINGS

2024 ANNOUNCEMENT AND CALL FOR PAPERS

SHORT COURSES AND INTELLIGENT BUILDING OPERATIONS (IBO) WORKSHOP • JULY 14, 2024
HERRICK CONFERENCES • JULY 15-18, 2024

THANK YOU TO OUR 2022 CONFERENCE SPONSORS

Interested in sponsoring the 2024 Conferences?

Email Ben Prickel for more information at herrickconferences@purdue.edu.



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2024 PROPOSED SESSION TOPICS

Compressor Engineering Conference

Screw Compressors
Rotary Compressors
Scroll Compressors
Reciprocating and Linear Compressors
Dynamic Compressors
Novel Compressor Mechanisms and Concepts
Numerical Modeling of Compressors
Thermal Management
Valve Design and Analysis
Compressors for Alternative Refrigerants
Compressors for Air and Industrial Gases
CO₂ Compressors and Expanders
Compressor Efficiency Enhancements
Tribology and Lubrication in Compressors
Noise Identification and Reduction
Variable Speed Compressor Technologies
Capacity Modulation Concepts
Compressor Testing and Evaluation

Refrigeration & A/C Conference

Refrigerant Properties and Assessments
Lubricants and their Properties
Heat & Mass Transfer Characterization, Modeling, and Enhancements
Advancements in Heat Exchangers
Work Recovery Devices
Domestic, Commercial, & Industrial Refrig. Systems
Residential and Commercial Heat Pumps
Industrial Heat Pumps
Transportation AC & Refrigeration of Equipment
Thermal Management of Electric Vehicles
Steady-State & Dynamic HVAC&R Equip. Modeling
Advanced Controls for HVAC&R Equipment
Automated Diagnostics for HVAC&R Equipment
HVAC&R Cycle Enhancements
Alternative Cooling and Heating Technologies
Heat-Driven Refrigeration & Heat Pump Technologies
Power and Co-Generation Equipment

Refrigeration & A/C Conference (cont.)

Energy Storage Technologies
Heat Recovery Technologies
Next-Gen Testing/Rating of HVAC&R Equipment

High Performance Buildings Conference

Grid-responsive Buildings and Intelligent Controls
Adaptive and Human-centered Building Operation
Building Performance Monitoring and Simulation
Indoor Environmental Quality (Thermal, Acoustic, Visual, Air)
IoT, AI Applications and Data Analytics
Energy Storage and Heat Pump Technologies
Building Envelope and Facade Systems
Lighting and Daylighting
Building Life-cycle Assessments (LCA)
Off-site (modular) Building Construction
Solar Energy Integration in Buildings
Innovative Building Materials

2024 SHORT COURSES

System Modeling Short Course – Steady-state and Dynamic Models of Heat Pump Systems and their Components

Coordinated by: Davide Ziviani (Purdue University), Haotian Liu (Purdue University), Jinwoo Oh (Purdue University)

The HVAC&R industry is facing numerous challenges including transition to low-GWP refrigerants, upcoming energy standards, decarbonization targets and electrification of heating. Model-based engineering design is an essential tool to evaluate design trade-offs, investigate new technologies and optimize year-round operation of equipment. In this Short course, steady-state and dynamic modeling techniques will be covered to predict the performance of HVAC&R systems. Case studies will include residential, commercial, and industrial applications as well as integration of thermal storage.

Refrigeration Short Course – Heat Pumps - Technology and Policies Update

Coordinated by: Prof. William Murphy (retired University of Kentucky) and the U.S. National Committee of the IIR in collaboration with Herrick Laboratories Faculty

Heat pumps are being promoted globally as an environmentally conscious alternative to carbon fuel combustion heating in buildings and even in industrial applications. This short course will have recognized speakers who will address current and future advances in heat pump technologies as well as policy decisions that will encourage their use around the world.

INTELLIGENT BUILDING OPERATION (IBO) WORKSHOP

Coordinated by: Kevin Kircher (Purdue University), Jim Braun (Purdue University), Gregor Henze (University of Colorado)

The IBO workshop began in 2011 and typically alternates between the University of Colorado Boulder and Purdue University. In 2024, Purdue will host the IBO workshop in combination with the International Conferences on Compressor Engineering, Refrigeration and Air Conditioning, and High Performance Buildings (HPB). IBO-Purdue will focus on enabling scalable and cost-effective intelligent building operations (such as controls, fault detection and diagnostics, analytics, and data-driven business services) through theoretical developments, algorithmic advances, technology innovations, case studies, and field demonstrations. IBO-Purdue will combine a one-day workshop, featuring invited presentations, with several technical sessions held during the subsequent HPB conference. The technical session presentations will accompany peer-reviewed papers published in the HPB conference proceedings. IBO-Purdue and HPB conference participants can also attend any of the technical sessions associated with the compressor and refrigeration conferences.

2024 STUDENT PAPER AWARDS

The conference organizing committee is pleased to invite students to submit abstracts for the **2024 Student Best Paper Award Competition**. Please note the following updated eligibility information and other guidelines for the competition:

- Students at the undergraduate level and graduate level at the time of the paper submission are eligible to compete.
- Students must be the first author on the submitted papers and must present their work at the conferences to compete.
- Every student paper submission to the 2024 Student Best Paper Award Competition must be accompanied by a separate nomination statement by the advising professor.
- Every advising professor may nominate a maximum of two student paper submissions to the 2024 Student Best Paper Award Competition.
- Cash prizes for each conference will be presented to the top three papers in the amounts of \$1000, \$500 & \$250

ABSTRACT & PAPER SUBMISSIONS

Visit www.conftool.org/Herrick2024 to submit online. Choose most closely related topic area. Submit your 500 word abstract and after acceptance, an 8 page paper. Please note that presenting authors must be registered by the June 13, 2024 manuscript deadline. Abstracts and papers must be submitted in English.

	Conference Registration	Conference and IBO Workshop	Deadlines
ConfTool Abstract Submission System Opens			August 28, 2023
Abstract Submission			December 22, 2023
Abstract acceptance notification & instructions to authors for manuscript preparation			January 24, 2024
Manuscripts submission deadline			April 18, 2024
Notification to presenting authors of acceptance or rejection of manuscripts			May 16, 2024
Pre-registration for conference ends. Final version of papers must be uploaded at this time			June 13, 2024
Presenting Author Registration (2 Presented Papers Maximum)	\$750	\$900	June 13, 2024
Student Author Registration (2 Presented Papers Maximum)	\$350	\$500	June 13, 2024
Non-Author Registration	\$850	\$1000	June 13, 2024
Student Non-Author Registration	\$450	\$600	June 13, 2024
System Modeling Short Course Registration	\$700		June 13, 2024
USNC/IIR Refrigeration Short Course Registration	\$700		June 13, 2024
Student Short Course Registration	\$300		June 13, 2024

All registration rates will increase by \$150 after the deadline date. Groups of 6 attendees from the same employer receive 1 complimentary registration for every 5 paid registrations. Group registration fees are \$4,250 before May 30, 2024 and \$4,750 starting May 31, 2024.

IMPORTANT FACTS

- Conference registration will be available online starting January of 2024 at www.conf.purdue.edu/Herrick2024
- Companies wishing to register using a wire transfer will need to contact Amanda Johnson at john2145@purdue.edu or (765) 494-0874. Note that additional wire transfer fees are included.
- All fees must be paid in U.S. funds and drawn on a U.S. bank. Fees paid in advance but not used will be refunded upon written request by June 27, 2024. We are not responsible for costs incurred due to cancellation.
- Letters of invitation to obtain your travel visa can be found in ConfTool. Letters will be available as soon as abstracts are accepted. Please contact Ben Prickel at herrickconferences@purdue.edu if you require additional documentation for travel.
- For additional registration information, daily schedule, etc. – please visit engineering.purdue.edu/HerrickConf
- Continuing Education Units (CEU's) may be available.

CONTACT INFORMATION

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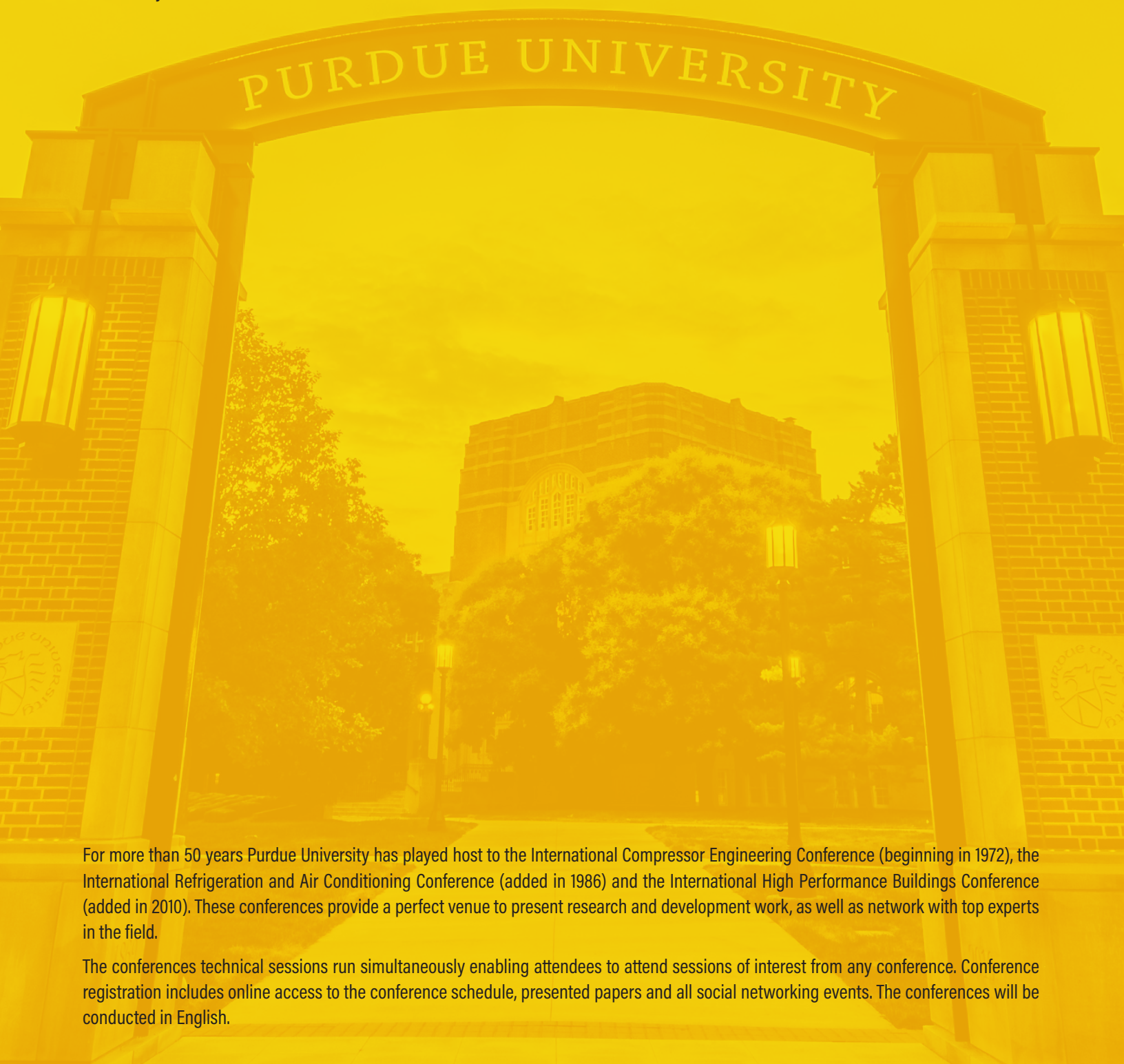


Ray W. Herrick Laboratories

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For more than 50 years Purdue University has played host to the International Compressor Engineering Conference (beginning in 1972), the International Refrigeration and Air Conditioning Conference (added in 1986) and the International High Performance Buildings Conference (added in 2010). These conferences provide a perfect venue to present research and development work, as well as network with top experts in the field.

The conferences technical sessions run simultaneously enabling attendees to attend sessions of interest from any conference. Conference registration includes online access to the conference schedule, presented papers and all social networking events. The conferences will be conducted in English.

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