

ICSERA 2026 Program at a Glance

Oct. 20 (Tue)				
Sono Calm Goyang, West Tower 2F, Lilac Hall 2				
Registration				
17:00-18:00	Welcome Reception			
18:00-20:00				
Oct. 21 (Wed)				
KINTEX 1 2F, Room 207			KINTEX 1 2F, Room 208A	
08:30-09:20	Registration (KINTEX 1 2F, Room 207)			Room 207 only (No parallel sessions)
09:20-09:30	Welcome Speech (Prof. Young Soo Chang, President of SAREK (The Society of Air-Conditioning and Refrigerating Engineers of Korea))			
09:30-10:00 (30 min)	Plenary Lecture I			
	09:30-10:00	Control of Boiling Phenomena in Confined Spaces — from Nanopores to Microchannels Prof. Hirofumi Daiguji (The University of Tokyo, Japan)		
10:00-10:15	Coffee Break			
10:15-11:30 (75 min)	Session 1: Heat Pump Systems I: Performance & Control (Session Chair: Prof. Dongchan Lee (University of Seoul))			Session 2: Heat Pump Systems II: Sorption & Thermal Storage Integration (Session Chair: Prof. Donghui Lee (Jeonbuk National University))
	10:15-10:30	Virtual Sensing-Based Predictive Defrost Control for Inverter-Driven Air-Source Heat Pumps (Jungwoo Lee)		10:15-10:30 Ammonia Adsorption Heat Pump for Low Grade Heat Utilization (Young Kim)
	10:30-10:45	Performance Evaluation of a 300°C High Temperature Heat Pump System for Industrial Heat Supply (Jin Sub Kim)		10:30-10:45 Experimental Study on the Performance of an AI-MOF-Based Adsorption Heat Pump Driven by Low-Temperature Waste Heat in Data Center (Jeongwoo Kim)
	10:45-11:00	Energy Consumption Analysis of a Ground-Source Heat Pump System under Various Design Parameters (Juhyun Lee)		10:45-11:00 Operating Strategy for Heat Pump-Assisted Waste Heat Upgrading in a Greenhouse Proton Exchange Membrane Fuel Cell-Based Combined Cooling and Power System (Hyunjoon Yoon)
	11:00-11:15	AI - Based Fouling Detection Algorithm for Air Source Heat Pumps Under High Ambient Temperature Conditions (Dohyun Woo)		11:00-11:15 Performance Evaluation of a Residential Heat Pump Water Heating System with PCM Thermal Energy Storage under Different Priority Operation Modes (Taehwan Song)
	11:15-11:30	Performance Impact of Fault Parameters in a Water-Source Heat Pump Based on Dynamic Simulation (Seul-ki Kim)		11:15-11:30 A Study on Dynamic Simulation of Integrated Absorption Heat Pump MVR System (Van Cong Le)
11:30-12:50	Lunch (Coupon Provided)			
12:50-14:05 (75 min)	Session 3: Refrigeration & Cold Chain Systems (Session Chair: Prof. Yongseok Jeon (Ajou University))			Session 4: Refrigerants & Two-Phase Flow Characteristics (Session Chair: Prof. Dongsoo Jang (Kookmin University))
	12:50-13:05	Experimental Study on a Power-to-Cold System Using Ice Thermal Storage Integrated with a Showcase Refrigeration System Under Renewable Energy Curtailment (Deuk-won Kim)		12:50-13:05 Heat transfer coefficient and dryout of R454C inside mini-channel tube (Hoang Ngoc Hieu)
	13:05-13:20	Sustainable Cold Thermal Energy Production for Cold-Chain Systems Using Low-GWP Refrigerants and Cold Energy Utilization (Seongsoo Heo)		13:05-13:20 Pressure drop investigation of R454C inside mini-channel tube (Hoang Ngoc Hieu)
	13:20-13:35	1D Simulation-Based Performance and Efficiency Optimization of a Refrigerated Truck Refrigeration System (Jaewoo Song)		13:20-13:35 Experimental and Numerical Investigation of the Cooling Performance of an Automotive R744 Flash-Tank Gas Injection System (Seungyeon Lee)
	13:35-13:50	Multi-Sensor-Based Optimization of Refrigeration and Defrost Operations (Yongseun Kim)		13:35-13:50 Heat Transfer Enhancement in Low-Pressure Absorbers: A Comparative Study of Tube Designs under Sub-Zero Conditions (Duong Van Hau)
	13:50-14:05	Experimental validation and thermal analysis of meat Cold Chain packaging for refrigerated and frozen delivery (Sieuu Lee)		13:50-14:05 Experimental Investigation of Condensation Heat Transfer in Two-Phase Immersion Cooling Systems for Data Centers (Van Trung Mai)
14:05-14:20	Coffee Break			
14:20-15:35 (75 min)	Session 5: High-Performance Heat Exchangers & Heat Pipes (Session Chair: Prof. Sangwook Lee (Chung-Ang University))			Session 6: EV & Battery Thermal Management (Session Chair: Prof. Donghui Lee (Jeonbuk National University))
	14:20-14:35	Experimental Analysis of Air-Side Heat Transfer Performance in a Refrigerator Fin-Tube Heat Exchanger (Byeonghyeon Kang)		14:20-14:35 Experiment-Informed Reduced-Order Thermal Modeling of EV Cabin Dynamics under Directional Solar Loading (Jinhyuk Lee)
	14:35-14:50	Data-Efficient Surrogate Modeling for 1-D Droplet-Based Heat Recovery Simulation (Barah Ahn)		14:35-14:50 Satellite-Assisted Machine Learning Framework for Short-Term Ambient Temperature and Humidity Prediction Along Urban Electric Vehicle Driving Routes (Ahmad Gufron)
	14:50-15:05	Effects of Surface treatment of Gas-liquid contactor on Liquid Desiccant Air Conditioning Systems (Koharu YOKOO)		14:50-15:05 Performance analysis of an advanced integrated thermal management system for fuel cell electric vehicles based on multi-heat source utilization (Yungu Lee)
	15:05-15:20	A Numerical Investigation of Flow Uniformity in a Printed Circuit Heat Exchanger with a Lenticular Rib (Seong-Ju Choi)		15:05-15:20 Comparative Study of Inter-Cell Thermal Barriers for Lithium-Ion Battery Module Safety and Thermal Management (Taewon Han)
15:20-15:35	An experimental investigation on the effect of hydraulic diameter on the thermal performance and EMF voltage generation of a ferrofluid pulsating heat pipe (Thanh Phuong Nguyen)		15:20-15:35 Electric Vehicle Cabin Dehumidification Using a Super Desiccant Polymer Rotor Regenerated by Low-Grade Waste Heat (Yehyeon Lee)	
15:35-15:50	Coffee Break			
15:50-16:50 (60 min)	Session 7: Thermal Energy Storage & Waste Heat Utilization (Session Chair: Prof. Dong-Wook Oh (Chosun University))			Session 8: Renewable & Sustainable Energy Applications (Session Chair: Dr. Jin Sub Kim (Korea Institute of Machinery & Materials, KIMM))
	15:50-16:05	Thermal Performance Evaluation of Spiral Coil and Encapsulated PCM Thermal Energy Storage Systems (Junhan Hwang)		15:50-16:05 Optical Analysis of Nano-Fluid Based Direct Absorption Solar Receiver for Parabolic Dish Concentrator (Akash Patel)
	16:05-16:20	Economic and Environmental Impact Analysis of Water-Heating Equipment by Heat Source Type (Leon KOBAYASHI)		16:05-16:20 Energy-Efficient Atmospheric Water Harvesting for Sustainable Freshwater Production in Arid Regions: Experimental Validation and Heat–Mass Transfer Modeling (Raid Alrowais)
	16:20-16:35	Operating Characteristics and Costs Analysis of Thermal Energy Storage Systems for P2H (Jaehyeok Heo)		16:20-16:35 Energy Performance Assessment and Operational Optimization of a Tropical University Building Toward Net-Zero Energy Using EnergyPlus (Nguyen Ba Chien)
	16:35-16:50	Field Evaluation of a Power-to-Heat System with Thermal Energy Storage for Greenhouse Applications (JongHun Lee)		16:35-16:50 Self-Assembled Pellet Adsorbents for Energy-Efficient Direct Air Capture at Sub-Ambient Temperature (Ronghuan Xu)
16:50-17:00	Coffee Break			
17:00-18:00 (60 min)	Plenary Lecture II			Room 207 only (No parallel sessions)
	17:00-17:30	Adsorption Technology Applications: Hybrid System Prof. Jae Dong Chung (Sejong University, Republic of Korea)		
	Plenary Lecture III			
	17:30-18:00	Sorption Thermal Battery and Dipolar Caloric Refrigeration Cycle for Plus Energy Building Applications Prof. Yong Tae Kang (Korea University, Republic of Korea)		
18:30-20:30	Banquet (Sono Calm Goyang, East Tower 1F, Diamond Hall 1+2)			
Oct. 22 (Thu)				
KINTEX 1 2F, Room 207			KINTEX 1 2F, Room 208A	
08:30-09:00	Registration (KINTEX 1 2F, Room 207)			
09:00-09:30 (30 min)	Plenary Lecture IV			Room 207 only (No parallel sessions)
	09:00-09:30	Sustainable Cooling, Indoor Air Quality and Energy Performance: Technical Insights and Policy Perspectives from Viet Nam Dr. Quoc Dung Trinh (Hanoi University of Science and Technology, Vietnam)		
09:30-09:45	Coffee Break			
09:45-11:00 (75 min)	Session 9: Micro/Nano-Scale Transport & Novel Materials (Session Chair: Dr. Yeong Chung (Korea Institute of Machinery & Materials, KIMM))			Session 10: Advanced Numerical Modeling, Nuclear & Process Engineering (Session Chair: Prof. Dongchan Lee (University of Seoul))
	09:45-10:00	Engineering Anisotropic Thermal Pathways Through Process-Induced Fiber Alignment in Additive Manufacturing (Quoc-Viet Le)		09:45-10:00 Numerical Model Development and Performance Assessment of Liquid Hydrogen No-Vent Fill Strategies (Hyunseo Lee)
	10:00-10:15	Enhancing Thermal Rectification in Polymer Composites through Fiber Orientation Manipulation (Duc-Cuong Nguyen)		10:00-10:15 Thermodynamic Performance Evaluation of Steam Rankine and Helium Brayton Cycles for Nuclear Fusion Balance of Plant (Seok Jun Moon)
	10:15-10:30	Composition Engineering of Sr-Doped BaTiO3 Ceramics toward Lead-Free Electrocaloric Cooling Applications (Zahid Ali)		10:15-10:30 Experimental and analytical study of evaporation characteristics on heat sink material surfaces using an optical fiber sensor (Yeongyu Lee)
	10:30-10:45	Thickness-Dependent Selection of Gas-Side Resistance and Linear Driving Force Models for Desiccant Wheel Adsorbents (Jun Jeong)		10:30-10:45 Numerical Investigation of Energy Separation Phenomenon in Vortex Tubes (Nguyen Ba Chien)
	10:45-11:00	An Experimental Investigation on CO2 Separation and Thermodynamic Performance of a Vortex Tube with Convergence Orifice Angles (Sunmook Im)		10:45-11:00 CFD-Based Optimization of Airflow Distribution for Enhanced Thermal Uniformity in an Industrial Drying Chamber (Nguyen Ba Chien)
11:00-11:15	Coffee Break			
11:15-12:15 (60 min)	Session 11: Data Center & Electronics Thermal Management (Session Chair: Prof. Chan Woo Park (Jeonbuk National University))			Session 12: Desiccant & Air Conditioning Systems (Session Chair: Prof. Namkyu Lee (Yonsei University))
	11:15-11:30	Thermal Performance Enhancement of a Micro-Fin Cold Plate for Hotspot Mitigation in High-Heat-Flux Chips (Minsu Lee)		11:15-11:30 IoT-Enabled Autonomous Robotic Air Purification for Targeted Mitigation of Dynamic Indoor Pollution (Sien Jie Wong)
	11:30-11:45	Preliminary Study on the Design and Control Strategy of a Rack-Level Coolant Distribution Manifold for Energy-Efficient Liquid Cooling in Data Centers (Min-Gyu Ham)		11:30-11:45 Accelerating Softgel Drying Optimization: A Coupled CFD and Machine Learning Surrogate Modelling Approach (Sien Jie Wong)
	11:45-12:00	Experimental Study of an Automatic Valve System for Uniform Coolant Flow Distribution Unit for Efficient MVDC Liquid Cooling System Design (Doboon Lee)		11:45-12:00 Development of a Data-Driven Multi-Output Virtual Sensor for a Two-Phase Microchannel Heat Transfer System (Maziah Mohamad)
	12:00-12:15	Experimental investigation of nanoparticle-enhanced solar salt for high-temperature thermal energy storage applications (Han Thi Thu)		12:00-12:15 Influence of Coconut-Fibre Cooling-Pad Inclination on Direct Evaporative Cooling Performance under Hot-Humid Conditions (M F H Rani)
12:20-12:25	Closing Remarks (Dr. Chan Ho Song, Conference Chair)			Room 207 only (No parallel sessions)
Oct. 23 (Fri)				
10:00-17:00	HARFKO 2026 Exhibition Tour			

***Guidelines for Presenters**
- Each oral presentation is allotted 15 minutes in total (12 minutes for the presentation and 3 minutes for Q&A).
- Presenters should be seated in the session room at least 10 minutes prior to the start of the session and introduce themselves to the session chair.