

2026 JSRAE Annual Conference, Presentation Program

- (1) Each general presentation has 20 minutes including 5 minutes for discussion. Keynote presentations has 40 minutes including 10 minutes for discussion.
- (2) Symbols ○/◎ show speakers. ◎ is the candidates for the best presentation awards.
- (3) The authors whose affiliation are not mentioned belong to the same institute as the preceding author.

— — — — — Day 1 — — — — —

Room A <Wed. Sep. 2>

Organized Session OS-1

Technological Development in Heat Exchangers

09:00 ~ 10:20 OS-1 (1)

Chairperson: FUKUDA Sho (Kyushu Sangyo University)

A111 Scalable fabrication of superhydrophobic surfaces
○ CHOI Junho (Tokyo City University),
ASAKAWA Tomohiko

A112 Enhancing Surface Temperature Uniformity in
Semiconductor Wafer Chucks through Fractal
Channel Design
○ TSAO Chun-Chieh (National Chin-Yi University
of Technology), LUO Win-Jet, PANIGRAHI Bivas

A113 Experimental study on condensation rate of moist air
flow over vertical flat plate
◎ KUROSAWA Haruki (Yokohama National Univ.),
NOZUE Shota, YOKOTA Ryuya, KUROSE Kizuku

A114 Effect of Orientation and Flow Direction on
Evaporative Heat Transfer Characteristics in Flat
Multiport Tube
YOSHIDA Tomohiro (Kobe Univ.), YAMAMOTO
Keita, ○ ASANO Hitoshi

10:40 ~ 12:20 OS-1 (2)

Chairperson: ONISHI Hajime (Komatsu University)

A121 Numerical Analysis of Bubble Discharge Behavior in
Self-Suction Boiling Cooling Using an Expansion
Channel
◎ HIROMI Hayakawa (University of Fukui)

A122 Numerical simulation of pressure drop characteristics
of single-phase flow in gyroid-structured channel
◎ LI Rui (Yokohama National Univ.), HIROKAWA
Tomoki (Univ. Hyogo), KUROSE Kizuku
(Yokohama National Univ.)

A123 Analysis of Heat and Mass Transfer in Liquid
Dehumidification Systems: Insulated and Internally
Cooled Types
○ LIN Yu-Hua (National Chin-Yi University of
Technology), ZHENG Jia-Wei (National Kaohsiung
Normal University), GAO Jia-Ping (National Chin-
Yi University of Technology), WU Yu-Lieh

A124 Study on Heat Transfer and Flow Characteristics of

Evaporating Flow in Parallel Mini-channels under
Non-uniform Heating Conditions

◎ YUSEI Nakayama (Kobe Univ.), KATSUMI
Sugimoto, HITOSHI Asano

A125 Gas-Liquid Distributions of Refrigerant Flows in
Multi-pass Channels with Vertical Headers
Influence of Cross-sectional Area of Inlet Header on
Liquid Distribution
IKEDA Akihiro (Former Mie Univ.), ONODERA
Ayumi (Carrier Japan), HATADA Takafumi,
MARUYAMA Naoki (Mie Univ.), ○ HIROTA
Masafumi (AICHI INSTITUTE OF
TECHNOLOGY)

13:20 ~ 15:00 OS-1 (3)

Chairperson: JIGE Daisuke (Tokyo University of Marine
Science and Technology)

A131 Prediction of Boiling Heat Transfer Coefficient up to
the Onset of Dryout Using Machine Learning
◎ MOCHIZUKI Takeshi (Kyushu Univ.), NAKANO
Hayato (The University of Electro-Communications),
MIYAZAKI Takahiko (Kyushu Univ.), ENOKI Koji
(The University of Electro-Communications)

A132 High-Accuracy Prediction of Heat Transfer
Coefficient and Frictional Pressure Gradient in
Refrigerant Two-Phase Flow Using Uncertainty-
Aware Deep Learning
◎ SATO Seiya (The University of Electro-
Communications), ISHIDA Yasukazu, KOKI Raika,
YOKOYAMA Haruki, SATO Ken (Panasonic HVAC
& CC Co., Ltd.), SEI Yuichi (The University of
Electro-Communications)

A133 Heat Transfer Prediction in Plate Heat Exchangers
Based on Correction Factors
◎ ZHOU Yingxin (Kyushu Univ.), THU Kyaw,
MIYAZAKI Takahiko

A134 Corrosion of copper tubes used in heat exchangers of
air conditioner in hot spring regions.
○ NAKAJIMA Takahito (Panasonic), MIYAO
Kotaro, TANIMURA Hiroshi

A135 Effect of Salt Deposits on Corrosion of Fin & Tube
Heat Exchangers with Aluminum Tubes
○ KODAMA Hayato (Panasonic), NAKAJIMA
Takahito, RI Yasuyuki, YAMASAKI Noriko,
TANIMURA Hiroshi

15:20 ~ 17:00 OS-1 (4)

Chairperson: KAYUKAWA Yohei (AIST)

A141 Effect of Liquid Level on Boiling Heat Transfer of Zeotropic Refrigerant Mixtures Composed of R32 and R1234yf
© TSUGITA Yosei (Kobe Univ.), SUGIMOTO Katsumi, ASANO Hitoshi

A142 Performance Evaluation of a Loop Heat Pipe Using Heat Transfer Fluids SS-49 and SS-54
○ FUJIWARA Shinji (Nagasaki Univ.), KODA Keitaro, KOUDOU Chieko

A143 Experiment on Heat Transfer of R32/R1132(E)/R1234yf Refrigerant Mixtures in Horizontal Parallel Minichannels
© NISHIZAKI Ayami (Tokyo University of Marine Science and Technology), NUMATA Natsumi, BABA Jimpei, JIGE Daisuke, INOUE Norihiro

A144 Experimental Study on Supercritical Heat Transfer of R1234ze(E) in Plate Heat Exchangers
○ FUKUDA Sho (Kyushu Sangyo Univ.), MIYATA Kazushi (Fukuoka Univ.), UMEZAWA Shuichi (Tokyo Electric Power Company Holdings)

A145 Study on the Utilization of Cryogenic Energy from Liquefied Hydrogen
Report 4: Utilization Characteristics of Cryogenic Energy from Liquefied Hydrogen for a Refrigerated Display Cabinet and Building Air-Conditioning Systems
© YAMANAKA Yuya (Iwatani Corporation), HIROTANI Ryuichi, YOSHINO Yu, SHIMA Kiyoshi (Obayashi Corporation), AIZAWA Norio, MATSUMOTO Ryosuke (Kansai Univ.), OZAWA Mamoru, CHU Qi, DU Xiaoyuan

Room B <Wed. Sep. 2>

Workshop WS-4 Collaborations between Food Engineering and Food Freezing

09:00 ~ 10:20 WS-4 (1)

Chairperson: WATANABE Manabu (Tokyo University of Marine Science and Technology)

B111 【 Keynote 】 Progress in Food Refrigeration Technology Based on Collaboration with Food Engineering
○ NABETANI Hiroshi (Tokyo Kasei University)

B112 Progress in quality preservation technologies for frozen fruit and vegetables
○ ANDO Yasumasa (NARO)

B113 An Engineering Understanding of Food Freezing Based on Microstructural Analysis
○ KONO Shinji (MAYEKAWA MFG.)

10:40 ~ 12:00 WS-4 (2)

Chairperson: ARAKI Tetsuya (The University of Tokyo)

B121 【 Keynote 】 Food engineering approaches in the

technological development of frozen foods

An introduction to the history of frozen food product development and examples of engineering approaches.

○ FURUHASHI Toshiaki (JSFE)

B122 Food Engineering and Refrigeration Technologies Supporting Institutional Food Service Systems as Social Infrastructure

○ IYOTA Hiroyuki (Osaka Metropolitan University)

B123 Possibilities for Further Collaboration between Food and "Refrigeration"

○ WATANABE Manabu (Tokyo University of Marine Science and Technology)

Organized Session OS-6 Low Temperature Application and Technology for Food and Biomaterials

13:00 ~ 15:00 OS-6 (1)

Chairperson: MIYAO Norio (Toyo College of Food Technology), ARAKI Tetsuya (The University of Tokyo)

B131 Effects of Different Stunning Methods on the Frozen–Thawed Quality of Horse Mackerel

© HIROWATARI Uran (Tokyo University of Marine Science and Technology), REDO Mark Anthony, WATANABE Manabu

B132 Visualization of In-Container Temperature Distribution and Quality Evaluation of Fresh Produce during Refrigerated Rail Transport

© HONDA Moe (Kyushu Univ.), KIYOMATSU Ai, KIBA Naoya, SHIOTANI Kousuke (Resource Utilization Research Center, Fukuoka Agriculture and Forestry Research Center), SAIKI Yumi, TSUKAZAKI Morihito, NAGATA Moeri (Agricultural Systems Research Institute, Kumamoto Prefectural Agricultural Research Center), KOGA Shiori, SARUWATARI Makoto, TANAKA Fumina (Kyushu Univ.), TANAKA Fumihiko

B133 Effect of Ice Coarsening on Retrogradation of Gelatinized Suspensions

○ KIMIZUKA Norihito (Hiroshima Univ.)

B134 Rapid Food Freezing Utilizing the Phase Change Latent Heat of Fine Ice Derived from Highly Concentrated Sodium Chloride Aqueous Solutions

○ TETSUJI INOUE (Kyushu Univ.), FUMINA TANAKA, FUMIHIKO TANAKA

B135 Development of a Freeze–Thaw Subcellular Damage Evaluation Method in Fish Muscle by Mitochondrial Membrane Integrity Analysis

© YIN Zhongzhuan (Tokyo University of Marine Science and Technology), REDO Mark Anthony, WATANABE Manabu

B136 Effect of industrial freezing methods on microstructural changes and transient heat flow

behavior in food tissues

© PRANAV Deevi (Gifu Univ.), YOSHIDA Kyoichiro (Hoshizaki Electric Co., Ltd.), NISHIZU Takahisa (Gifu Univ.), IMAIZUMI Teppei

15:20 ~ 17:00 OS-6 (2)

Chairperson: ANDO Yasumasa (National Agriculture and Food Research Organization)

B141 Effect of Fan Speed Variation in an Air Blast Freezer on Energy Consumption

© HIROSE Rin (Tokyo University of Marine Science and Technology), REDO Mark Anthony, WATANABE Manabu

B142 Effect of Static Magnetic Field Application During Food Freezing on Ice Crystal Size

© HOSHINAKA Takashi (Tokyo University of Marine Science and Technology), REDO Mark Anthony, WATANABE Manabu

B143 Validity and limitations of performance evaluation methods for food freezing equipment

SUZUKI Toru (FF Tech), YAMASHITA Masahiro, ○ SUZUKI Akane, WATANABE Manabu (Tokyo University of Marine Science and Technology)

B144 Reduction of Moisture Sublimation from Food during Frozen Storage by Controlling Temperature Distribution

© TAGUCHI Shoichi (Hitachi Global Life Solutions, Inc.), ITANO Shunya, ISHIZAKI Yuri, ITAKURA Hiroshi, IKEDA Yuki, KOMATSUZAWA Yuna, HORIUCHI Keisuke

B145 Verification and Evaluation of Frost Growth Prediction Theory: An Approach Using a Packaging Model

© JODO Kana (Tokyo University of Marine Science and Technology), SUZUKI Toru (FF tech), LEE Younju (Tamagawa Univ.), HAGIWARA Tomoaki (Tokyo University of Marine Science and Technology), SHI Zhenyu (Haier Asia R&D), IWAMOTO Tomoharu, HOSHINO Hitoshi

Room C <Wed. Sep. 2>

Workshop WS-7

Development of Refrigeration and Air-Conditioning Technologies for Practical Use of Next-Generation Low-GWP Refrigerants

09:00 ~ 10:00 WS-7 (1)

Chairperson: HIGASHI Tomohiro (CRIEPI)

C111 LCCP evaluation of low GWP refrigerant mixtures through heat exchanger optimization

○ MIYAOKA Yoichi (WASEDA Univ.), GIANNETTI Niccolo, TANAKA Chitose, SAITO Kiyoshi

C112 Study on the Practical Applications of R-1132(E)-based refrigerant blends
Performance Evaluation using Air Conditioners

○ TAKENAKA KEI (Daikin Industries), NISHIDA TERUO, TANIGUCHI SHINICHI

C113 Experimental Evaluation of an Air Conditioner Performance under using R-1132(E)-based refrigerant blends

○ AMANO Seiichi (Hisense Japan Corporation)

10:40 ~ 12:00 WS-7 (2)

Chairperson: MIYATA Akio (Saga University)

C121 Demonstration Test for Safety Evaluation of Self-Decomposition Reactions in Next-Generation HFO Refrigerants

○ HIGASHI Tomohiro (CRIEPI), ITO Makoto, KOTARI Masashi, HASHIMOTO Katsumi, HIHARA Eiji (The University of Tokyo)

C122 Performance evaluation of residential air conditioners using R474B (R1132(E)/R1234yf: 31.5/68.5 mass %) and measurement of compressor efficiency

© MORI Keita (Nagasaki Univ.), MIAO Yufeng, IDO Kazuki, KONDOU Chieko

C123 Discharge Behavior of Electrical Short Circuit in Inverter-powered and Constant-speed Compressors

© TAKAGI Masato (Suwa University of Science), AIDA Shugo, SUEMATSU Jun-ichi, IMAMURA Tomohiko

C124 Evaluation of self-decomposition for R-1132(E)-based refrigerant blends

© SUGA Sakura (Daikin Industries), USUI Takashi, INOUE Tomohito, ABE Masahiro, YAMADA Yasuho

13:20 ~ 14:40 WS-7 (3)

Chairperson: AKASAKA Ryo (Kyushu Sangyo University)

C131 Investigation of disproportionation mechanisms and suppression methods in HFO Refrigerants (Part 2)

© KARIN Domoto (Panasonic), HIKARU Murakami, HIRONORI Tsunoyama, NAOKI Hayashi, YU Tokoro, HIROYUKI Aoyama, TAKAHIKO Hashimoto, YUKIO Nakano (Tokyo Gakugei University)

C132 Experimental Validation of Genetic Programming for Optimizing R454C refrigerant Circuitry

○ GIANNETTI Niccolo (WASEDA Univ.), KIM Cheol Hwan, AGUI Haruka, TANAKA Chitose, SEI Yuichi (The University of Electro-Communications), SAITO Kiyoshi (WASEDA Univ.)

C133 Experimental Investigation on Solubility Characteristics of PVE/R474A Mixture near Critical Temperature

© RAKPAKDEE Wannarat (Shizuoka University), FUKUTA Mitsuhiro, MOTOZAWA Masaaki

C134 Prediction of Burning Velocity for HFO Refrigerants by Developing Reaction Models using Graph Network Analysis

○ TOYODA Kenji (Panasonic Holdings Cooperation), NAGAO Nobuaki, OOGOE Takahiro, DOMOTO Karin (Panasonic), MURAKAMI Hikaru, HASHIMOTO Takahiko, HIWATA Akira, MARUTA Kaoru (Tohoku University)

Workshop WS-10
Thermal Utilization Technologies and Its Applications
for Carbon Neutrality

15:20 ~ 17:00 WS-10 (1)

Chairperson: YAMAGUCHI Seiichi (Waseda University)

C141 **【Keynote】** Adsorption technologies contributing to carbon neutrality Advances and emerging applications of AQSOA for data center cooling, industrial waste heat utilization, and atmospheric water generation

○ KAKIUCHI Hiroyuki (POLASTECH)

C142 Study on Smart Communities with Heat Pump (20th Report)

Effect of a High-Precision Solar Radiation Prediction Model on the Optimization of Battery in HEMS in Cold Region.

○ DANG Bozhou (Hokkaido University), DANG Haobin, LIU Hongzhi, KATSURA Takao, NAGANO Katsunori (The National Institute of Technology's Tomakomai College)

C143 Energy Management System(EMS) for Industrial Heat Pumps -3rd Report-

© MIYABAYASHI Hiroka (MAYEKAWA MFG.), HASHIGUCHI Kenji, TSUKADA Kenichi

C144 Field test of an air-source/ground-source hybrid cooling and heating system

○ KARIYA Keishi (Saga Univ.), MIYARA Akio

Room D <Wed. Sep. 2>

Organized Session OS-2
Technologies of Desiccant, Adsorption, Absorption and
Chemical Reaction

09:00 ~ 10:20 OS-2 (1)

Chairperson: LIU Hongzhi (Hokkaido University)

D111 Experimental Concept of the Effects of Steel Mesh Geometric Parameters on the Wetting Characteristics and Dehumidification Performance of Ionic Liquid dehumidification System

© TU Wen-Ching (National Chin-Yi University of Technology), WU Yu-Lieh

D112 Investigation of the Effects of Solution Distributor Geometry on Liquid Desiccant Air Conditioning Systems

© YOKOO Koharu (WASEDA Univ.), MASUNO Katsuya, MAEDA Kento, KIM Moojoong, NICCOLO Giannetti, SAITO Kiyoshi

D113 Application of Energy-Efficient Desiccant Adsorption Dehumidification Wheel Equipment in

Air-Conditioning Systems

© LIANG Chih Chao (National Atomic Research Institute), CHANG Chun Liang, LI Heng Yi, CHEN Chun Liang, CHEN Yu Ren, LIN Wei Ting, CHO Hsien Ho, CHEN Meng Chun, YANG Sheng Fu

D114 Computational Fluid Dynamics simulations of Rotary Desiccant wheel: humidity-based mapping

© ROKHADE Kiran Kumar (NCUT-Taichung, Taiwan), LUO Dr. Win Jet, PANIGRAHI Dr. Bivas Panigrahi

10:40 ~ 12:20 OS-2 (2)

Chairperson: ESAKI Takehiro (Kyushu University)

D121 Evaluation of Heat Charging and Discharging Behaviors of Composite Potassium Carbonate in an Open Thermochemical Energy Storage System

© SAIJO Shizune (Hokkaido University), LIU Hongzhi, NAGANO Katsunori (National Institute of Technology, Tomakomai College)

D122 Pore widening of anodic aluminum oxide films by cathodic polarization

© SUGAWARA Izumi (Kanazawa Univ.), KAWAKAMI Shohei, TSUJIGUCHI Takuya, KODAMA Akio, KUMITA Mikio

D123 Design of a Double-Effect Adsorption Refrigeration Cycle with a 100 kW Cooling Capacity and Investigation of the Effects of Temperature Conditions on Performance

© TANAKA Hiromu (Tokyo University of Agriculture and Technology), CASTIL Jundy, AKISAWA Atsushi

D124 Measurement of Equilibrium Adsorption Capacity of Ionic Liquid Solutions at Evaporation temperature below 0°C

© HASHIMOTO Ikuma (Tokyo University of Agriculture and Technology), CASTIL Jundy, AKISAWA Atsushi

D125 Investigation of MgCl₂/NH₃-based Thermochemical Energy Storage Materials Compositing with Silicone Rubber for Air Conditioning Systems Utilizing Low-Grade Waste Heat

© SUZUKI Ryo (Institute of Science Tokyo), ENOSAWA Tetta, FUNAYAMA Shigehiko, KATO Yukitaka, TAKASU Hiroki

International Session IS
Advancement in HVAC&R Technologies in Asia

13:20 ~ 15:00 IS (1)

Chairperson: KUROSE Kizuku (Yokohama National University)

D131 Using CFD simulation to improve indoor ventilation outcomes of elevated Minxiong railway station

○ LIN Nian-Zhen (National Taipei University of Technology), O Wen-Chueh (CECI Engineering Consultants), CHIEN Tsung-Chi, HSU Fu-Chun, YANG An-Shik (National Taipei University of

Technology), LEE Yee-Ting

D132 Effects of Building Corner Designs with Cylindrical Structures on Rooftop Vertical-Axis Wind Turbines
○ CHEN Wan-Yi (National Taipei University of Technology), CHANG Ming-Liang, JUAN Yu-Hsuan

D133 The effects of tunnel air quality on vehicle cabin indoor air quality - a case study of Baguashan Tunnel
CHANG Tong-Bou (TSHRAE), HUANG Jhong-Wei,
○ YANG Tzu-Yi

D134 Simulation and Analysis for Performing Optimization of Stainless Steel Freezer Worktables
○ ZHOUNG Cheng-Wen (TSHRAE), SHIH Yang-Cheng, LI Yungming (ITRI), ZHANG Zhaochen, LIN Yuchen, LAI Tsung-Yu (NYCU)

D135 THE NEW DEVELOPMENTS OF GREEN AIR CONDITIONING IN THE ERA OF SUSTAINABLE CIVILIZATION
© ZONG Min (USGBC CA)

15:20 ~ 16:20 IS (2)

Chairperson: MIYARA Akio (Saga University)

D141 Experimental investigation of pool boiling heat transfer enhancement using micro-pin-finned surfaces
○ HE Bing-Xuan (National Taipei University of Technology), LUO Wei-Lun, HU Wei-En, LEE Yee-Ting, YANG An-Shik

D142 Comparison of Flow Boiling Heat Transfer Performance in Copper and Aluminum Microchannel Cold Plates
© LIN Wen-Hua (National Central University, Taiwan), LEE Guan-Youh, YANG Chien-Yuh

D143 Experimental Investigation of Evaporation Heat Transfer of Low GWP Refrigerants in a Plate Heat Exchanger
© ANOWAR S M Sayeed (Saga Univ.), DIAW Saide, KARIYA Keishi, MIYARA Akio

Room E <Wed. Sep. 2>

Organized Session OS-7

Thermophysical Properties of Refrigerants

09:20 ~ 10:20 OS-7 (1)

Chairperson: MARUKO Kohei (Carrier Japan Corporation)

E111 【Keynote】Flammability Evaluation of Fluoroolefins
○ TAKIZAWA Kenji (AIST), IGARASHI Naoharu, TOKUHASHI Kazuaki

E112 Surface Tension Measurement of Fluorinated Liquids SS-49 and SS-54
○ MIYANISHI Ruma (Nagasaki Univ.), FUJIWARA Shinji, ENOKUMA Sota, KONDOU Chieko

10:40 ~ 12:00 OS-7 (2)

Chairperson: KARIYA Keishi (Saga University)

E121 Liquid Density Measurements of R474B Using a Vibrating-Tube Densimeter
© YAMAUCHI Haruto (Fukuoka Univ.), ISHIBASHI Ryota, NISHIYAMA Takashi, GAO Lei

E122 Liquid-Phase Speed of Sound Measurements for Binary Refrigerant Mixtures R474A and R474B
NISHIYAMA Takashi (Fukuoka Univ.), © ISHIBASHI Ryota, YAMAUCHI Haruto, GAO Lei

E123 Liquid-Phase Speed of Sound Measurements for R32/R1132(E)/R1234yf Ternary Refrigerant Mixtures.
○ NISHIHASHI Kanako (AIST), KANO Yuya

E124 Development of a Helmholtz Energy Equation of State for R152a
Evaluation of Experimental Data and Modeling Optimal Function
© SATO Akane (AIST), KAYUKAWA Yohei, LEMMON W Eric (RUB), AKASAKA Ryo (Kyushu Sangyo Univ.)

Workshop WS-9

Trends in the Technology Development and Deployment of Industrial Heat Pumps

13:20 ~ 15:00 WS-9 (1)

Chairperson: ASANO Hitoshi (Kobe University)

E131 【Keynote】The latest developments in industrial high-temperature heat pumps
Progress report on IEA HPT Project 68
○ KAIDA Takenobu (CRIEPI), ANAMI Keiko (Osaka Electro-Communication Univ.), TANAKA Katsuyuki (Nihon Univ.), MATSUDA Keigo (Nagoya Univ.), ASANO Hitoshi (Kobe Univ.)

E132 Development of high-temperature water and 120°C steam supply non-fluorocarbon heat pump
○ OUE Takahiro (KOBELCO COMPRESSORS CORPORATION), OKADA Kazuto

E133 Development of High-Efficiency Centrifugal Heat Pump using HFO-1233zd(E)
SHIMIZU Yuki (Mitsubishi Heavy Industries Thermal Systems), FUKASAWA Kazuma, NITTA Tomonori, ○ KANEKO Miki, SUEMITSU Ryosuke, MIYOSHI Naoya, MATSUKURA Noriyuki

E134 Introduction to Technology Deployment of Large-Capacity Centrifugal Heat Pump
Contribution to Energy Saving and Carbon Neutrality for Diverse Heat Demands
○ MURAKOSHI Masaya (EBARA REFRIGERATION EQUIPMENT & SYSTEMS), YAGISHITA Hideaki, OIKAWA Yoshio (EBARA CORPORATION)

15:20 ~ 17:00 WS-9 (2)

Chairperson: ANAMI Keiko (Osaka Electro-

Communication University)

E141 The need for integrators to promote widespread adoption of industrial heat pumps
○ KAIDA Takenobu (CRIEPI)

E142 Case Studies of Industrial Heat Pump Installations and Key Considerations for Implementation
HAYASHI Yujiro (MIURA CO., LTD.), ○ OOTANI Kazuyuki

E143 Regarding the plan for introducing waste heat utilization systems in existing factories, etc. Considerations for efficiency and stable operation
○ AKIJI M mashiko (kraftwerk)

E144 Development of Integrated Planning Methodology for Manufacturing Processes, Industrial Heat Pumps, and Building Configuration in Factory Construction
○ YOKOYAMA Shigenori (Takenaka Corporation), ASANO Mao, KATO Saeka, URIYA Masataka, HIGASHI Arumi, KURIHARA Reiko

E145 【Discussion】
○ KAIDA Takenobu (CRIEPI), OOTANI Kazuyuki (MIURA CO., LTD.), MASHIKO Akiji (Kraftwerk), YOKOYAMA Shigeki (Takenaka Corporation)

----- Day 2 -----

Room A <Thu, Sep. 3>

Organized Session OS-1

Technological Development in Heat Exchangers

09:00 ~ 10:20 OS-1 (5)
Chairperson: MIYATA Kazushi (Fukuoka University)

A211 Experimental study on condensation heat transfer for vertical downward flow in a multiport tube
© IPPOMMATSU Koki (Tokyo University of Marine Science and Technology), JIGE Daisuke, INOUE Norihiro

A212 Performance evaluation of a heat exchanger considering the temperature glide of zeotropic refrigerants mixture
○ KARIYA Keishi (Saga Univ.), SUGISAKI Yuki, MIYARA Akio

A213 Preliminary Experiments on the Flow and Heat Transfer Characteristics of a Metal 3D-Printed Gyroid Heat Exchanger
○ FUNAMI Yuki (NDA), NAKAMURA Hajime

A214 Topology Optimization of Flow Channel Structures for Liquid Cooling Plates
© HEI Runqi (University of Fukui), MATSUMOTO Kensuke, WU Qining, DANG Chaobin

10:40 ~ 12:20 OS-1 (6)
Chairperson: KARIYA Keishi (Saga University)

A221 Experimental Study on Flow Boiling Heat Transfer of

a Low-GWP Refrigerant in Minichannels
© KATSUTA Shintaro (Tokyo University of Marine Science and Technology), NUMATA Natsumi, AOSAWA Takuto, JIGE Daisuke, INOUE Norihiro

A222 Effect of Fin Height on Heat Transfer Enhancement of R474A in Channel with Micro Fins
© NUMATA Natsumi (Tokyo University of Marine Science and Technology), NISHIZAKI Ayami, BABA Jimpei, JIGE Daisuke, INOUE Norihiro

A223 Effect of Tube Length on Thermal-Hydraulic Characteristics of Thin Finless Flat Tube Heat Exchangers
○ ONISHI Hajime (Komatsu Univ.), TSUNAZAKI Rikuto

A224 Measurement of boiling heat transfer for R1336mzz(E) in a heating horizontal circular tube using high-speed infrared thermography
○ YAMADA Shunsuke (National Defense Academy), NAKAMURA Hajime

A225 Quantifying Inter-Tube Liquid Column Dynamics for Falling-Film Heat Exchangers via High-Speed Visualization
○ CHEN Yu-Jie (National Chin-Yi University of Technology), ZHENG Jia-Wei (National Kaohsiung Normal University), WU Yu-Lieh (National Chin-Yi University of Technology)

13:20 ~ 14:40 OS-1 (7)
Chairperson: NAKAMURA Hajime (National Defense Academy)

A231 【Keynote】Understanding heat transfer and boiling crisis mechanisms in pool boiling of water
○ YABUKI Tomohide (Kyutech)

A232 Experiment on Pool Boiling Heat Transfer of R1234ze(E) outside a T-Shaped Finned Tube
© YOKOTA Kazuki (Tokyo University of Marine Science and Technology), JIGE Daisuke, INOUE Norihiro, MATSUNO Tomonobu (KMCT)

A233 Heat Transfer and Flow Characteristics of R-1234yf in mini tubes
© OKA Takao (Kobe Univ.), SOU Akira, WADA Yoshitaka (Mazda Motor Corporation), UEKI Yoshiharu

Room B <Thu. Sep. 3>

Seminar SN-1

Seminar on Compressor Technology

09:20 ~ 10:20 SN-1 (1)
Chairperson: OKU Tatsuya (MAYEKAWA MFG. CO., LTD.)

B211 Biltin Horizontal Refrigerated Display cabinet using R290 (SV series Freeco)
YAMAMOTO Hiroaki (Mitsubishi Electric Applied Refrigeration Systems), ○ HOSAKA Keiko,

SUGIMOTO Takeshi, MASUDA Masato, SASAKI Ryo (Mitsubishi Electric Corporation)

B212 Vertical Flat Tube Heat Exchanger for Outdoor Unit in VRF Air Conditioning System for Buildings
○ YATSUYANAGI Akira (Mitsubishi Electric Corporation), KOIKE Takanori, HATOMURA Takeshi, ONAKA Yoji, KISHIDA Nanami

B213 Air-Conditioner for ICT Equipment “FMACS-VI(M)”
○ SHOJI Noritaka (Daikin Industries)

10:40 ~ 12:00 SN-1 (2)

Chairperson: TOJO Kenji (WASEDA University/TOJO R&D Office)

B221 Summary Report on the 14th International Conference on Compressors and their Systems
○ OKU Tatsuya (MAYEKAWA MFG.), HATTORI Kazuhiro, BUCKNEY David

B222 2026 Purdue Conference Summary Report
○ TOJO Kenji (WASEDA Univ./TOJO R&D Office)

B223 【Keynote】The story of Scroll type compressor development
○ SATO Taizo (Sanden corporation), HIRAGA Masaharu (Individual)

Organized Session OS-8

"OS-8 Present Status and Future Development of Compressors"

13:20 ~ 14:40 OS-8 (1)

Chairperson: MOTOZAWA Masaaki (Shizuoka University)

B231 Simplified Simulation of Rotor-to-Rotor Contact in Twin-Screw Compressors Using a Multi-Section Contact Model
○ OKU Tatsuya (MAYEKAWA MFG.), YAMASHITA Hironori, TANABE Hiroyuki, JULIO Ortiz

B232 Investigation of a Compressor Efficiency Measurement Method for Refrigeration Oil Evaluation
© KIMURA Ken (ENEOS Corporation), TAKAKI Tomohiro, KAWAGUCHI Masaki, SAKAMOTO Shouta, YOSHIMOTO Yasunori

B233 About the orbit radius misalignment of a scroll compressor, and the contact force and radial clearance between Scroll wraps under operating conditions.
○ HIDENOBU Shintaku (Midea Japan Corporation), OSAMU Aiba, SADAYUKI Yamada

B234 Basic characteristics of POE refrigeration oil for R290 Part 2
○ KIMURA Takefumi (ENEOS Corporation), TAKAKI Tomohiro, KAWAGUCHI Masaki, MIZUTANI Yuya

Room C < Thu. Sep. 3 >

Workshop WS-5

Smart Heat Pump Technologies for Co-creating Sustainable Future Society

09:20 ~ 10:20 WS-5 (1)

Chairperson: KONO Kyoji (Waseda University)

C211 【Keynote】Next generation heat pump technology
Toward smart heat pump technology
○ SAITO Kiyoshi (WASEDA Univ.)

10:40 ~ 12:00 WS-5 (2)

Chairperson: INNAMI Yukio (Waseda University)

C221 Impact of Heat Pumps Using Renewable Energy as a Heat Source on the Energy Society
○ MATSUDA Kenji (WASEDA Univ.), SAITO Kiyoshi

C222 A Discussion on the Roles of Future Heat Pumps from the Demand Side Perspective, part 4
○ OKAMOTO Hiroaki (Jyukankyo Research Institute Inc.)

C223 Study of comprehensive evaluation index for home air conditioners
Identification of issues and implementation of sensitivity analysis
○ NISHIMURA Kuniyuki (WASEDA Univ.), SAITO Kiyoshi

C224 Circular Economy Policy and Examples of Initiatives in the Air Conditioning and Cold Chain Business for Panasonic
○ MASARU Matsui (Panasonic)

13:20 ~ 14:40 WS-5 (3)

Chairperson: KONO Kyoji (Waseda University)

C231 【Panel Discussion】Considering the Future of Refrigerants in the Circular Economy
○ KIYOSHI Saito (WASEDA Univ.)

Room D < Thu. Sep. 3 >

International Session IS

Advancement in HVAC&R Technologies in Asia

09:00 ~ 10:20 IS (3)

Chairperson: FUKUDA Sho (Kyushu Sangyo University)

D211 Study on THM Coupling Effects in Closed-loop GSHP: Impacts of Thermal Pressurization and Borehole Decoupling on Long-term Operation
○ LIN Rui-Chen (National Taiwan Normal University and Kyushu University), MIYAZAKI Takahiko (Kyushu Univ.), YEH En-Chao (National Taiwan Normal University)

D212 Investigation of UV Radiation for Defrosting Applications
○ HU Ming-Hsuan (National Yang Ming Chiao

Tung University), ZAMANIFARD Majid, WANG Chi-Chuan, MURUGAN Muneeshwaran (Oak Ridge National Laboratory), LIN Hao-Yu, NAWAZ Kashif

- D213 Dynamic Analysis of a Double-Effect Adsorption Refrigeration System Using a Tetrabutylphosphonium Trifluoroacetate Ionic Liquid–Water as Refrigerant for Chilled Storage Applications
© CASTIL R Jundy (Tokyo University of Agriculture and Technology), TANAKA Hiromu, AKISAWA Atsushi

D214 【Cancelled】

Organized Session OS-7•IS Joint Session

10:40 ~ 12:20 OS-7•IS (1)

Chairperson: KANO Yuya (AIST)

- D221 Thermodynamic Properties of Highly Asymmetric CO₂/Oil-Surrogate Mixtures: A Critical Benchmark of Available Equations of State
© SCHNEEGANS Felix Marcel (TU Dresden), BREITKOPF Cornelia, JÄGER Andreas

- D222 Measurement of thermal conductivity of HFO-1123/HFC-32 binary mixture using transient hot wire method

© SABER Tachadduk Md. (Saga Univ.), HOIMONTEE Islam Taskira, MORSHED Monjur, AHMED Sayef, MATSUNAGA Takayoshi, KARIYA Keishi, MIYARA Akio

- D223 CFD Analysis of Geometric and Integrated Part Load Value Performance of an R-1233zd Two-Stage Centrifugal Compressor
○ KUO Chin-Chih (TSHRAE), HUNG Kuo-Shu (ITRI), KUAN Yean-Der (TSHRAE), LAI Yu-Jin (ITRI), HUANG Jeng-Min (National Chin-Yi University of Technology), LIN Jun-Jie (ITRI)

- D224 Speed of Sound in Mixtures of Low-GWP Refrigerant R-1234yf with Polyol Ester (POE) and Polyvinyl Ether(PVE) Oils
© SAMEEN Isha (Kyushu Univ.), ITAIWI Alaa, MIYAZAKI Takahiko, HIRATSUKA Kengo (Mitsubishi Electric Corporation), FUJIWARA Tomoya, THU Kyaw (Kyushu Univ.)

- D225 Measurement of Saturation Pressure and Speed of Sound at the Saturated Liquid State for R-1224yd(Z) and R-1336mzz(E)
○ ITAIWI Alaa (Kyushu Univ.), SAMEEN Isha, MIYAZAKI Takahiko, HIGASHI Yukihiro, THU Kyaw

International Session IS Advancement in HVAC&R Technologies in Asia

13:20 ~ 14:40 IS (4)

Chairperson: KANEDA Masayuki (Osaka Metropolitan University)

- D231 Field-Calibrated XGBoost and Satellite Reanalysis Meteorology for Warm-Season Thermal Derating of a Bare Photovoltaic Module

© WANG Ching-Wei (National Kaohsiung Normal University), ZHENG Jia-Wei

- D232 Experimental Validation and CFD Study of a Protruded-Plate Air-to-Air Heat Exchanger with Varying Reynolds Number and Protrusion Height

○ LIU Yiming (Xi'an Jiaotong-Liverpool University), ZHANG Keliang, HIROKAWA Tomoki (University of Hyogo), QIAN Suxin (Xi'an Jiaotong Univ.), HUANG Long (Xi'an Jiaotong-Liverpool University)

- D233 Study on the Influence of Lattice Fin Structure on Heat Transfer Performance

CHANG Tong-Bou (TSHRAE), ○ TSAI Cheng-Yen, CAI Zhi-Cheng

- D234 Experimental Study on Condensation Heat Transfer of R454C Refrigerant in a 4.7 mm ID Horizontal Smooth Tube

© QUROTUL AINI (Saga Univ.), YOKANAN GUSTINO DJENTOE, HAKIMATUL UBUDIYAH, KEISHI KARIYA, AKIO MIYARA

Room E <Thu. Sep. 3>

Workshop WS-3 Ice, Water, and Steam: Properties and Their Industrial Applications

09:00 ~ 10:20 WS-3 (1)

Chairperson: MUROMACHI Sanehiro (Yokohama National University), AKASAKA Ryo (Kyushu Sangyo University)

- E211 【Keynote】Studies on the nucleation mechanism of gas hydrates and development of the nucleation-promoting technology

○ UCHIDA Tsutomu (Hokkaido University)

- E212 Measurement of the Triple Point and Solid-Liquid Equilibrium Properties of Refrigerants

○ KONDOU Chieko (Nagasaki Univ.)

- E213 Building Environmental Management Based on the Physical Properties of Three-Phase Water

○ KAGAWA Harumi (Kyushu Sangyo Univ.)

10:40 ~ 12:20 WS-3 (2)

Chairperson: ASAKA Tasunori (Shinshu University), KAYUKAWA Yohei (AIST)

- E221 【Keynote】Room-Temperature Thermoelectric Conversion Enabled by the Integration of Semiclathrate Hydrates and Electrochemistry

○ MATSUI Yohei (CRIEPI)

- E222 The analysis methods for shaved ice using the snow observation methods

○ IMAMURA Koji (Miyashita Ice Co., Ltd.)

E223 Practical example of a slurry ice system
Contribution to maintaining the freshness and improving the quality of seafood
○ IMAMURA Michiko (Kanadevia Engineering), KOBAYASHI Hiroki, SAGIYAMA Mitsuhiko

E224 Development of an Ice Slurry Beverage for Heat Illness Prevention
○ SHOGO Mochizuki (Otsuka Pharmaceutical)

General Session GS GS General Session

13:20 ~ 14:40 GS (1)
Chairperson: MATSUMOTO Ryosuke (Kansai University)

E231 Effect of Magnetic Flux Distribution around the Magnetic Circuit on Temperature Span Generation Behavior of an Active Magnetic Regenerator
© OGASAWARA Kusuke (Meiji Univ.), KAWANAMI Tsuyoshi

E232 Development study of a high-performance cryogenic vaporizer utilizing boiling heat transfer characteristics
○ KIYOSUE Taiki (Shizuoka Univ.), FUKIBA Katsuyoshi

E233 Performance Evaluation of an Ejector Refrigeration Cycle Using an Ejector Designed Using a One-Dimensional Real Gas Model
© SEKIZUKA Shu (Tokyo University of Marine Science and Technology), FUJITA Sho, KUNIYOSHI Nao, KOJIMA Mitsuo

E234 Study on Environmental Control and Reduction of Air Conditioning Load in Plant Factories with Artificial Light
© KIZAWA Rikuto (Osaka Metropolitan University), KINOSHITA Shinichi, YOSHIDA Atsumasa, KAGATA Kakeru (Osaka Institute of Technology)

Room F <Thu. Sep. 3>

Workshop WS-1 The Challenge Toward a Hydrogen Society Starting in the Kansai Region

09:00 ~ 10:20 WS-1 (1)
Chairperson: YOSHIDA Atsumasa (Osaka Metropolitan University)

F211 **【Keynote】**Japan's Recent Policy Developments on Hydrogen and Ammonia and the Initiatives of METI Kansai
○ ATSUSHI Tsuji (METI-Kansai)

F212 Efforts to build an international liquefied hydrogen supply chain
Contribution to Decarbonization
○ INOUE Kenji (Kawasaki Heavy Industries, Ltd.)

F213 Iwatani's Initiatives for a Hydrogen Society and the

Utilization of Liquid Hydrogen Cold Energy
○ HIROTANI Ryuichi (Iwatani)

10:40 ~ 12:00 WS-1 (2)
Chairperson: ASANO Hitoshi (Kobe University)

F221 **【Keynote】**Liquid Hydrogen Supply System and Open Laboratory of HyTec, KOBE UNIV.
○ TAKEDA Minoru (Kobe Univ.)

F222 Paving the Way to Carbon Neutrality: Liquefied Hydrogen Pumps Powered by High-Temperature Superconducting Motors
An Innovative Drive System that Transforms Cryogenic Temperatures into a "Resource"
© KARASUDA Go (Torishima Pump Mfg. Co., Ltd.)

F223 Visualization and Measurement of Liquid Water Behaviors in PEFC
○ ASANO Hitoshi (Kobe Univ.), MURAKAWA Hideki, SUGIMOTO Katsumi, SHIRASE Yuto (Univ. Yamanashi), SCHREIBER Christofer, DZRAMADO Eric, INUKAI Junji, ADACHI Hironori (Enomoto Corp.), NASU Mitsunori, ODAIRA Naoya (Kyoto Univ.), ITO Daisuke, SAITO Yasushi

----- Day 3 -----

Room A <Fri. Sep. 4>

Workshop WS-2 Trends in Development of Heat Exchangers

09:00 ~ 10:40 WS-2 (1)
Chairperson: OKUMURA Takuya (Panasonic HVAC & CC Corporation)

A311 Activity Report II of the Research Project "Advanced Heat Exchanger Technology for the Adjustment to Carbon Neutrality"
○ HAMAMOTO Yoshinori (Kyushu Univ.)

A312 Study on a Flat-Tube Evaporator for Household Refrigerators
○ OHKI Tatsuya (Haier Asia R&D), ZHENG Pengcheng (Xi'an Jiaotong University), YANG Peng, IWAMOTO Tomoharu (Haier Asia R&D), LIU Yingwen (Xi'an Jiaotong University), SHI Shingyoku (Haier Asia R&D)

A313 Optimization of refrigerant circuitry of fin-and-tube heat exchangers
Development of a novel method considering manufacturability constraints
© HIRAI Sho (Mitsubishi Electric Corporation)

A314 Development of a Vertical Header for Side-Flow Outdoor Units
© SHOGO Kikuchi (Mitsubishi Electric Corporation), YOJI Onaka, ATSUSHI Takahashi, YUTA Ichinose, SHUSUKE Takeyama, YOHEI Kato

A315 Visualization Experiments and CFD Analysis of Two-Phase Refrigerant Flow Phenomena in Loop-

Type Heat Exchanger Headers

○ UETSUKI Yusuke (Daikin Industries), MATSUMOTO Yoshiyuki, UDA Masafumi, TANI Kazuma (MQue inc.), YOSHIDA Kosuke, HIMENO Takehiro (The University of Tokyo)

11:00 ~ 12:20 WS-2 (2)

Chairperson: TSUNODA Isao (Shizuoka University)

A321 **【Keynote】**The Role of Latent Heat Treatment in Thermal and Air Environments of Buildings for Decarbonization

○ KOBAYASHI Hikaru (Tohoku University)

A322 Evaluation of Condensation Performance in a Microchannel Heat Exchanger with Corrugated Channels

○ SAITO Takashi (WELCON Inc.), YAMANOUE Takuya, IKARASHI Shingo, TAKEISHI Hiroaki, SUZUKI Yutaka

A323 Experimental Study on Performance Characteristics of R454C for Heat Exchangers and Air Conditioning Units

○ SATO Ken (Panasonic), KANESHI Masataka, SHIRAI Eiichi

13:20 ~ 14:20 WS-2 (3)

Chairperson: SUZUKI Hideaki (Carrier Japan Corporation)

A331 Development of an Outside Heat Exchanger to Extend the Driving Range of Battery Electric Vehicles

○ KENJI Hata (DENSO), SATOSHI Sakimichi, DAISUKE Takahashi

A332 Evaluation of Ventilation Thermal Load for Window Defogging in Electric Vehicles

○ TSUNODA Isao (Shizuoka Univ.)

A333 Improved Drainage Performance of Micro-channel Heat Exchanger with Hydrophilic Pre-coated Brazing fins

○ SUZUKI Nayuta (UACJ Corp.), FUJIMURA Ryoko, SUZUKI Taichi, SEKO Yoshiya, KOSUGI Yohei

Organized Session OS-1•IS Joint Session

14:40 ~ 16:40 OS-1•IS (1)

Chairperson: HIROKAWA Tomoki (University of Hyogo)

A341 Dual-Pitch Helical Wire Array for Pool Boiling Heat Transfer

◎ WANG Chen Kuang (National Chung Hsing University), HUANG Yu Ting, LO Ching Wen

A342 Characterization of top surface wettability effect on bubble dynamics and flow boiling heat transfer within microchannels

○ HUNG Chen-Yu (National Taipei University of Technology), WANG Jia-Zhen, KAO Hao-Dun, YANG An-Shik, LEE Yee-Ting

A343 Research on Refrigerant Noise in Household Air Conditioners Based on System Dynamic Changes

○ QIN JingYi (Guangdong Meizhi Compressor Co., Ltd), FAN YuFei, WANG ZhenQin, LIAO JianSheng, REN WeiFeng

A344 Passive Thermal Regulation of PV Modules via Gravity-Assisted Capillary Evaporation in High-Porosity Burlap Under High-Humidity Subtropical Conditions

◎ CHANG Chia-Chuan (National Kaohsiung Normal University), ZHENG Jia-Wei

A345 Radiative Cooling Applications for a Data Center

○ KO Wonjun (Kyung Hee University), SONG Jaeman

A346 Thermal-Hydraulic Performance of a TPMS Heat Exchanger under Flow Condensation

○ KIM Hyeonseo (Seoul National University of Science and Technology), KIM Seulki, YUN Sunu, CHOI Wonjae, CHA Jongmin, PARK Changyong

Room B <Fri. Sep. 4>

Organized Session OS-8 Present Status and Future Development of Compressors

09:00 ~ 10:40 OS-8 (2)

Chairperson: TOJO Kenji (WASEDA University/TOJO R&D Office)

B311 **【Keynote】**Property measurements of refrigeration oil/refrigerant mixture

for better understanding of refrigerant compressors

○ FUKUTA Mitsuhiro (Shizuoka Univ.)

B312 Analysis of Trajectories of Crankshaft and Crankpin Centers Due to Oil Film Pressure between Scroll Wraps (Effect of Initial Gap between Scroll Wraps)

◎ MUTO Taichi (Osaka Electro-Communication Univ.), NOMA Kengo (Daikin Industries), MAYUMI Yuki (Osaka Electro-Communication Univ.), TAKEDA Jin (Daikin Industries), SATA Kenichi, DEGUCHI Ryohei, NISHIMURA Kosuke, MORIMOTO Takashi, FUKUDA Akinori, ANAMI Keiko (Osaka Electro-Communication Univ.)

B313 Dissolution Behavior of Refrigerant at the Oil Interface under Increasing Pressure

◎ MIURA Shuma (Shizuoka Univ.), FUKUTA Mitsuhiro, MOTOZAWA Masaaki, ATOBE Shohei (Carrier Japan)

B314 Evaluation of a New PVE Refrigeration Lubricant for the Next-Generation Refrigerant R474B

○ NAKAMURA Shuya (Idemitsu Kosan), MATSUMOTO Tomoya, KITA Shota

11:00 ~ 12:40 OS-8 (3)

Chairperson: CHIKANO Masatsugu (Hitachi, Ltd.)

- B321 Experimental Evaluation of Lubricating Oil Backflow at a Branch Section of Low-Pressure Pipe in an Automotive Refrigeration Cycle
© KOARASHI Takuma (Shizuoka Univ.), FUKUTA Mitsuhiro, MOTOZAWA Masaaki
- B322 Flow Phenomenon Analysis Inside an Air-Conditioning Compressor Using Large-Scale High-Resolution Simulation
○ KAWABATA Shinichi (Daikin Industries), SANO Satoki (Institute of Science Tokyo), NAGASAKI Takao, KATAYAMA Tatsuya (Daikin Industries), AOKI Takayuki (Institute of Science Tokyo)
- B323 Large-Scale Multiphase Flow Simulation of the Oil Discharge Process in an Air-Conditioning Compressor
○ KATAYAMA Tatsuya (Daikin Industries), SANO Satoki (Institute of Science Tokyo), NAGASAKI Takao, KAWABATA Shinichi (Daikin Industries), AOKI Takayuki (Institute of Science Tokyo)
- B324 Fundamental study on an optical measurement technique for flow rate of lubricant droplets in a discharge pipe of air-conditioning compressor
○ ZAMA Yoshio (Gunma University), SEJIMA Shugo (Daikin Industries), KATAYAMA Tatsuya, FURUSHO Kazuhiro
- B325 Finite Element Simulation-Based Fracture Failure Analysis and Optimization Design of Compressor
○ XU Jiajie (Guangdong Meizhi Compressor Company), PAN Wen, HUANG Jian, LIAO Jiansheng, ZHANG Hao

Room C <Fri. Sep. 4>

Organized Session OS-5

Next Generation Refrigeration System Technology

09:00 ~ 10:40 OS-5 (1)

Chairperson: ZHANG Li (CRIEPI)

- C311 Study on consideration of direct expansion system for environmental laboratory
9th Report: CFD Analysis Model for Predicting Outlet Temperature Distribution of an Evaporator(2)
○ NAGATA Junichiro (Sanki Engineering), HAMAMOTO Yoshinori (Kyushu Univ.), MATSUOKA Fumio (Heat Pump Laboratory)
- C312 Miscibility of Refrigeration Oil with Low GWP Refrigerants
SAITO Rei (JAPAN SUN OIL), SUZUKI Yoshinori,
○ NAKANO Ryoichi, NANSO Hiei
- C313 Performance Evaluation of a Condensing Unit Using Next-Generation Refrigerant R474B
○ JEONG Jongsoo (WASEDA Univ.), SAITO Kiyoshi
- C314 **【Keynote】**Advances in Optical Quantum Sensing
○ TAKEUCHI Sigeki (Kyoto University)

11:00 ~ 12:20 OS-5 (2)

Chairperson: NUKAGA Haruki (Hitachi, Ltd.)

- C321 Prototype Development and Heating Performance Evaluation of an EV Air-Conditioning System Using a Desiccant-Coated Heat Exchanger
○ ZHANG Li (CRIEPI), HIGASHI Tomohiro, TADA Kazuhiro (DENSO), INABA Atsushi, KAMI Yuichi
- C322 Evaluation of Water Absorption and Evaporation Characteristics of a Desiccant-Coated Heat Exchanger and Its Application Potential
○ HIGASHI Tomohiro (CRIEPI), ZHANG Li, TADA Kazuhiro (DENSO), INABA Atsushi, KAMI Yuichi
- C323 Visualization and heating experiments of the evaporator in a natural-circulation evaporative cooling heat recovery system
© HASEGAWA Akiyuki (Kyushu Univ.), HAMAMOTO Yoshinori, YAJIMA Takeshi (MESH-X/Tokyo Electric Power Company Holdings), TAIRA Hiroto (Tokyo Electric Power Company Holdings), KAKEHI Takato
- C324 Strain Gauge-Based Non-Intrusive Pressure Estimation for Thermal Systems: A Comparative Study of Thin-Walled and Thick-Walled Approximations Model
© JOURDAN A. Gabriel (Waseda Univ.), GIANNETTI Niccolò, SAITO Kiyoshi, TANAKA Katsuhiko (Tokyo Electric Power Company), YONEDA Rysouke

13:20 ~ 14:40 OS-5 (3)

Chairperson: NAGATA Junichiro (Sanki Engineering Co.,Ltd)

- C331 Initiatives in Centrifugal Chillers for Data Centers
○ YAMAMOTO Hiroyuki (Mitsubishi Heavy Industries Thermal Systems), YOGO Ichiro, DAIMO Masashi
- C332 Development of a Machine Learning Model for Predicting the Dynamic Behavior of Air Conditioners
○ LI YILONG (Daikin Industries), KASAHARA Shinichi, KUSAKABE Yuma
- C333 Simulation of leakage of mildly flammable refrigerants into a Store from Showcases
Part 2: Evaluation of Time-Space Product During Leakage
○ SHIRAKI Takashi (Fuji Electric), KOUNO Amane, IZUNO Yusaku
- C334 Fundamental Properties of EC-NaI Slurry for The Realization of an Ionocaloric Refrigeration Cycle
© KAWADA Kodai (Aoyama Gakuin Univ.), WATANABE Hiroto, MORIMOTO Takashi, KUMANO Hiroyuki

15:00 ~ 16:00 OS-5 (4)

Chairperson: WATANABE Satoshi (Mitsubishi Heavy

Industries Thermal Systems, Ltd.)

AKIO Miyara (Saga Univ.), RYO Akasaka (Kyushu Sangyo Univ.)

C341 Experimental Investigation of an Open Cycle Steam Generating Heat Pump with Direct Steam Compression

○ SEKIYA Sachio (Hitachi), NUKAGA Haruki, MAITA Hiroshi, HASHIMOTO Kento, KAWAMURA Hironobu

C342 Development of a Liquid Refrigerant Amount Estimation Technology for Accumulators in Commercial Multi-Split Air Conditioning Systems

1st Report: Construction of a Physical Model for Liquid Level Height Estimation Using Superheat Difference and Experimental Verification

○ SEKI Tadakiyo (Mitsubishi Electric Corporation), ITO Masahiro

C343 Analysis of Internal Flow in Linear Expansion Valves and The Effect on Refrigerant Noise

© TAKIKAWA Yukiya (Mitsubishi Electric Corporation), ARAI Tatsuya

Room D <Fri. Sep.4>

Workshop WS-8

Current Applications of Natural Refrigerant Systems

09:00 ~ 10:40 WS-8 (1)

Chairperson: FUKUDA Sho (Kyushu Sangyo University), MATSUMOTO Tomoya (Idemitsu Kosan Co., Ltd.)

D311 Market Trends of Natural Refrigerants

○ SEKO Takuhisa (Iwatani Corporation), KANEHARA Yudai

D312 Visualization of refrigerant and oil flow in refrigeration systems

© SUZUKI Kazuya (MAYEKAWA MFG.), TOMIYAMA Yasushi, MIYABAYASHI Hiroka

D313 Development of Refrigeration Oil for Refrigerant Leak Detection for Natural Refrigerants

○ NAKANO Taeko (Idemitsu Kosan), NAKAMURA Shuya, MATSUMOTO Tomoya, KITA Shota, MAEZONO Hiroki

D314 Development of immersion cooling fluid for AI data centers

○ IWAI Toshiaki (Idemitsu Kosan)

D315 "Dear Cool," an air conditioning chiller with R290

○ NOBUHIRO Nakagawa (FUJINETSU)

11:00 ~ 12:20 WS-8 (2)

Chairperson: MIYAOKA Yoichi (Waseda University)

D321 【 Panel Discussion 】 Recent Trends in Natural Refrigerant Technologies

Reports from GL2026 and HVAC&R JAPAN 2026

○ YOHEI Kayukawa (AIST), TAKERU Kimura (MAYEKAWA MFG.), SHO Fukuda (Kyushu Sangyo Univ.), TOMOYA Matsumoto (Idemitsu Kosan), JUN Aoyama (EBARA CORPORATION),

Workshop WS-6

Current Status on the Research and Development of Alternative Refrigerants to R23

13:20 ~ 15:00 WS-6 (1)

Chairperson: SHIMOSAKA Koh (ETAC Engineering co., Ltd.)

D331 R485A: GWP<150, non-PFAS, Non-Flammable-as-Applied for Ultra-Low-Temperature Applications

○ OKUBO Kei (Orbia F&EM), YAMAMOTO Tsuyoshi, LOW E Robert

D332 Performance prediction of cascade cycles using R1132a/CO₂/Ethylene as R23 replacement candidates for ultra-low temperature applications

© MORISAKI Kotaro (Nagasaki Univ.), JUNG Jisu, TAKAMI Shogo, KONDOU Chieko

D333 【Keynote】ULT-Refrigeration Technologies No7

Moisture control issues in the ULT-Refrigerating Circuits

○ TAKEAMSA Kazuo (TTO)

15:20 ~ 16:40 WS-6 (2)

Chairperson: AKASAKA Ryo (Kyushu Sangyo University)

D341 【Panel Discussion】

KAYUKAWA Yohei (AIST), ○ AKASAKA Ryo (Kyushu Sangyo Univ.)

Room E <Fri. Sep. 4>

Organized Session OS-9

Simulation and AI Technologies for Refrigeration, Air-conditioning and Heat Pumps

09:00 ~ 10:40 OS-9 (1)

Chairperson: HAIKAWA Tomoyuki (Daikin Industries, LTD.)

E311 Development of a digital twin simulator toward thermal energy management system in retail stores

© SHINOHARA Kanta (WASEDA Univ.), TANAKA Chitose, SAITO Kiyoshi

E312 Dynamic Performance Evaluation of Air Conditioners Using a Variable Thermal Environment Model Room and Coupled Simulation of Air Conditioners and Buildings

SHIROMIZU Kiri (WASEDA Univ.), KARIYA Taiyou, ○ TANAKA Chitose, SAITO Kiyoshi

E313 Development of an EnergyPlus-Coupled Testing Facility for Air Conditioning Field-test in the Laboratory

© FIRDAUS H Nazwan (Waseda Univ.), SHOLAHUDIN Sholahudin (University of Indonesia), CHIENCHIEH Lin (Waseda Univ.), DONDINI Damiano, GIANNETTI Niccolo, SAITO Kiyoshi

E314 A Building-Information-Independent Method for HVAC Thermal Load Estimation and Prediction Using Equivalent Thermal Disturbance
© KOIDE Tatsuya (GENERAL LABORATORIES LIMITED), MORI Hayato, KIMOTO Yuto, TAKEUCHI Yuga

E315 Demand Response of an Individual Air-Conditioning System Based on Model Predictive Control
Potential Evaluation of Demand Response on Expected Activation Days
© MAYUMI Ryuto (Osaka Metropolitan University), NISHIKAWA Reona, WAKUI Tetsuya

11:00 ~ 12:20 OS-9 (2)

Chairperson: HIGASHIUE Shinya (Mitsubishi Electric Corp.)

E321 Demonstration of Thermal Comfort Maintenance and Energy-Saving Effects of Local Air Conditioning Using Coaxial Mist in a Casting Factory
○ ICHIYANAGI Wataru (TOYOTA INDUSTRIES CORPORATION), OHARA Taku, YAMAMOTO Takanori (TOYOTA CENTRAL R&D LABS., INC.), YAMAUCHI Takafumi, HASHIMOTO Shunsuke, YOGO Yasuhiro

E322 Simultaneous Thermal Comfort Maintenance and Energy Saving by Local Air Conditioning Superimposed with Evaporative Cooling in Extremely Hot Factories
○ YAMAMOTO Takanori (TOYOTA CENTRAL R&D LABS., INC.), YAMAUCHI Takafumi, HASHIMOTO Shunsuke, YOGO Yasuhiro, ICHIYANAGI Wataru (TOYOTA INDUSTRIES CORPORATION), OHARA Taku

E323 Estimation of Occupants' Latent Discomfort Based on Setpoint Temperature Adjustment Behavior Using a State-Space Model
OKAHANA Haruto (Shiga Univ.), MURASE Ryota, ○ MATSUSHIMA Hiroyasu, IMAI Takashi, KATO Kei (Panasonic HVAC & CC CO., Ltd.), ONOUE Saya, TANNO Yuka, HAYASHIDA Gaku, KAWAMOTO Kaoru (Shiga Univ.)

E324 Achieving Both Energy Efficiency and Thermal Comfort with Cold-Climate Air Conditioners (Report 6) Effect of Weather Conditions in Cold Regions on the Heating Performance of Air Conditioners
© MATSUMOTO Taichi (Hokkaido University), WANG Jinru, LIU Hongzhi, WAKABAYASHI Hitoshi, LEE Sangil, NAGANO Katsunori, LEE Sangmu (Samsung R&D Institute Japan Co)

13:20 ~ 14:40 OS-9 (3)

Chairperson: NONAKA Masayuki (Hitachi Global Life Solutions, Inc.)

E331 Proposal of a Fault Diagnosis Method for Commercial Air Conditioning Systems Using an FTA-Integrated Large Language Model and Specific-

Fault-Detection AI

© TAKADA Ryo (GENERAL Laboratories Inc.), KOZONO Rinto, ZHANG Xinyue, MORI Hayato, SHIGIHARA Go (GENERAL Inc.), TOYA Kotarou, OISHI Tsuyoshi, MOROOKA Masaya

E332 A Study on a Failure Diagnosis Method Based on the Operating State of an Outdoor Heat Exchanger in Simultaneous Heating and Cooling Multi Systems
© TANABE Yusuke (Daikin Industries), TOMINAGA Jun (Daikin Comfort Technologies North America, Inc.), INOUE Hiroyuki (Daikin Industries), KURODA Kohei

E333 AI-Based Vibration Feature Analysis and Embedded Fault Diagnosis for Air Conditioning Systems
○ QIU Kui-Yuan (TSHRAE), SUNG Min-Feng (Ming Chi University of Technology), CHANG Wei-Hsuan (National Chin-Yi University of Technology), KUAN Yean-Der (TSHRAE), LIN Yi-Ting (National Chin-Yi University of Technology)

E334 Research on zone air conditioning systems for factories using air curtains
Optimization study of cold air containment effect using machine learning
○ NAKAYAMA Hiroshi (Chubu Electric Power), HIROTA Masafumi (AICHI INSTITUTE OF TECHNOLOGY)

15:00 ~ 16:00 OS-9 (4)

Chairperson: YAMAGUCHI Seiichi (Waseda University)

E341 Study on a Data-Driven Approach for Optimal Heat Exchanger Design
○ YOSHIDA Atsushi (Panasonic), KANESHI Masataka, SATO Ken, SHIRAI Eiichi

E342 Advanced AMR Simulation Using Self-Adaptive Physics-Informed Neural Networks
Optimization Search of Design Parameters via Autonomous Thermal-Fluid Simulator
© MASARU Mitamura (UF)

E343 REAL-TIME PREDICTION OF ICE-WATER PHASE-CHANGE INTERFACE DYNAMICS USING TEMPORAL SIGNED DISTANCE FUNCTION-BASED DEEP LEARNING
© YANG Qingyu (Beijing Institute of Technology), YANG Tao, LI Yongliang, JIN Zhixu, ZHANG Wenqiang, YANG Yingying (University of Shanghai for Science and Technology), SHEN Jun (Beijing Institute of Technology)

Room F <Fri. Sep. 4>

Organized Session OS-3

Heat and Mass Transfer in Solid-Liquid Phase Change

09:20 ~ 10:40 OS-3 (1)

Chairperson: ASAOKA Tatsunori (Shinshu University)

F311 Advanced Effective Utilization for Cold Heat of Waste Plastic Energy.

5th report: Experimental evaluation of ice making system driven by waste heat based on the advanced ice slurry.

○ KOYAMA Toshie (Tokyo Denki Univ.), SOMEYA Satoshi, TANINO Masayuki (Takasago Thermal Engineering), MASUDA Masao, KAMATA Haruyuki, ORITA Hisayuki (Hachinohe Institute of Technology), KUMANO Hiroyuki (Aoyama Gakuin Univ.), MORIMOTO Takashi

F312 EFFECT OF SOLUTE CONCENTRATION AND TYPE ON THE FLOW CHARACTERISTICS OF ICE SLURRY IN A HORIZONTAL CIRCULAR PIPE

© ISHIGAKI Takumi (Aoyama Gakuin Univ.), MORIMOTO Takashi, KUMANO Hiroyuki

F313 The seasonal heat storage system by 24°C phase change material

Third report - Investigation of seasonal variation in radiative cooling

○ TAKAHASHI Hisashi (YAZAKI Energy System Corporation)

F314 Preparation of thermal energy storage microcapsule with a melting point higher than 100 °C using O/W emulsion of stearic acid

○ YAMADA Yutaka (Okayama Univ.), KAIHARA Ibuki, MATSUMI Soya, ISOBE Kazuma, HORIBE Akihiko

Organized Session OS-3•4 Joint session"

11:00 ~ 12:20 OS-3•4 (1)

Chairperson: YAMADA Yutaka (Okayama University), HATTORI Akihiro (The University of Tokyo)

F321 【Keynote】Structure of vapor-deposited ice (H₂O) through three-step transformation at 120 K

○ SATO Reo (Tokushima University), NOGUCHI Kentaro (The University of Tokyo), KOSHIDA Hiroyuki, ISHIBASHI Atsuki (Hokkaido University), HAMA Tetsuya (The University of Tokyo)

F322 Measurement of the rate of change in the basal plane orientation of ice crystals growing on a solid surface.

© TAKERU Takeru (Kanazawa Univ.), TERAOKA Yoshikazu

F323 COP Evaluation of an Absorption Ice Slurry Generator Based on Vapor Pressure Measurements of a Water–LiBr–PG Solution

© ASAKAWA Yua (Shinshu Univ.), URAKI Jin, ABE Shunsuke, ASAKAWA Tatsunori

Organized Session OS-4 Phenomena and Application Technology on Frost, Snow and Ice

13:20 ~ 15:00 OS-4 (1)

Chairperson: MATSUMOTO Ryosuke (Kansai University)

F331 A Study on Rapid Heating Recovery for Cold-

Climate Heat Pumps

Effect of Optimizing Refrigerant Distribution During Defrosting

© OGATA Keito (Mitsubishi Electric Corporation), TAKENAKA Naofumi, HATOMURA Takeshi, ASANUMA Hiroaki

F332 Frost formation caused by the influx of moist air when opening and closing cold storage, and countermeasures against it

© KISHIYAMA Sho (Shizuoka Univ.), FUKIBA Katsuyoshi

F333 Prediction of Frost Distributions in Fin-and-Tube Outdoor Heat Exchangers for Lorenz Cycle Heat Pumps

○ TANG Jinchun (The University of Tokyo), SHIKAZONO Naoki

F334 Effect of Leading Edge on Frost Layer Growth Model

○ INOUE Sho (National Institute of Technology, Ichinoseki College), OYAMADA Tomonori

F335 Development of a Frosting CFD Method Incorporating Mist Generation in General Curvilinear Coordinates and Its Application to Frost Formation Prediction around a Low Temperature Cylinder

© HATTORI Akihiro (The University of Tokyo), HIMENO Takehiro, WATANABE Toshinori, SATO Tetsuya (WASEDA Univ.), HYODO Kai, KANEKO Ryo

15:20 ~ 16:40 OS-4 (2)

Chairperson: HATTORI Akihiro (The University of Tokyo)

F341 Classification and Development of Frost Crystal Morphologies

© IKAWA Kaito (Kansai Univ.), YAMASHITA Riku, MATSUMOTO Ryosuke, ODA Yutaka

F342 Frost Growth Model Considering the Temperature Dependence of Tip Frost Density and X-ray CT Characterization of Internal Structure

○ MAEHARA Ryota (Yokohama National Univ.), KATSUNAGA Kyohei, ARAKI Takuto, MATSUMOTO Ryosuke (Kansai Univ.), OHKUBO Hidetoshi (Tamagawa Univ.)

F343 Study of frost shape measurement on a cylinder using the light-section method

○ HYODO Kai (WASEDA Univ.), HATTORI Akihiro (The University of Tokyo), TOMITA Taisei (WASEDA Univ.), NISHIKAWA Hikaru, KANEKO Ryo, SATO Tetsuya

F344 Experimental PIV Measurement of the Flow Field Around a Cooled Cylinder Under Frosting Conditions

○ KANEKO Ryo (WASEDA Univ.), TOMITA Taisei, NISHIKAWA Hikaru, HYODO Kai, SATO Tetsuya, HATTORI Akihiro (The University of Tokyo)