2019 JSRAE Annual Conference Program

(1) Each presentation has 20 minutes including 5 minutes for discussion.
(2) Symbol (○/◎) shows speakers.
(3) For multiple authors from the same institution, the affiliation of the first author from each institution is mentioned. The affiliation(s) of other author(s) is same as the preceding author.

――――― Day #1 ――――

Room A <11 September (Wed.)>

Organized Session OS-2
"Technological Development in Heat Exchangers"
Organizers: HASHIMOTO Katsumi (Central Research Institute of Electric Power Industry), DANG Chaobin (The Univ. of Tokyo), KONDOU Chieko (Nagasaki Univ.)

10:40 ～ 12:20 OS-2 (1) [Chairperson: TANAKA Saburo (Nihon Univ.)]

A111 Experimental study on boiling heat transfer of HFO1336mzz(E) in a horizontal multiport tube
◎ MIKAJIRI Naoki (Tokyo Univ. of Marine Science and Technology), KIKUCHI Shogo, JIGE Daisuke, INOUE Norihiro

A112 Effect of Lubricating Oil on Flow Boiling Heat Transfer and Flow Pattern of Low GWP Refrigerants (R-1234yf, R-290, R-32) in Multi-Port Mini Channels
○ SAITOH Shizuo (The Univ. of Tokyo), DANG Chaobin, HIHARA Eiji

A113 Effects of tube shape for boiling heat transfer on tube of R1233zd(E)
◎ FUKUDA Sho (Kyushusangyo Univ.), SHIMIZU Yuki (Mitsubishi Heavy Industries Thermal Systems, Ltd.), MIYOSHI Naoya, HASEGAWA Yasushi

A114 Study on the Effect of Tube Arrangement on Boiling Heat Transfer in Horizontal Tube Bundle
○ ZENZAI Hideki (Kobe Univ.), SUGIMOTO Katsumi, MURAKAWA Hideki, ASANO Hitoshi, MAKIMOTO Shizuka (Fuji Electric), MYOUGAN Ichiro

A115 Experiment on Condensation Heat Transfer of R1336mzz(Z) as a Low GWP Refrigerant inside a Horizontal Microfin Tube
◎ LIU Yufei (Tokyo Univ. of Marine Science and Technology), JIGE Daisuke, INOUE Norihiro

Workshop WS-1
"Trends in Development of Heat Exchangers"
Moderators: HIGASHIIUE Shinya (Mitsubishi Electric Corporation), SATOH Keiji (Panasonic Corporation), HIROTA Masafumi (Mie Univ.)

13:30 ～ 14:50 WS-1 (1) [Chairperson: SATOH Keiji (Panasonic Corporation)]

A121 [Keynote] Study on Heat Transfer Characteristics and Phase Change Phenomena in High Pressure Resistant Microchannel Heat Exchanger
○ KANEKO Akiko (Univ. of Tsukuba), ABE Yutaka, FUTSUTA Akihiro, SUZUKI Yutaka (WELCON Inc.)

A122 Development of water unit with 'Innovative Smart Channel®' Heat Exchanger
WANG Kaijian (Fujitsu General Laboratories Limited), TAKAHASHI Toshihiko, ○ SAGAWA Kentaro, TOMITA Kosuke

A123 Heat Pump using Low Pressure Refrigerant for Vehicle
○ TSUNODA Isao (Keihin corporation)

15:10 ～ 16:30 WS-1 (2) [Chairperson: HIGASHIIUE Shinya (Mitsubishi Electric Corporation)]

A131 Heat Transfer Characteristics of flat tube for Micro Channel Heat Exchanger in Air conditioner using R32
○ ZHENG Chen (Daikin Industries, Ltd), KAJI Ryuhei, HIROKAWA Tomoki, FUJINO Hirokazu

A132 Fabrication of thin multi-port tube by tube forming and improvement of its heat transfer characteristics
○ SHINOMIYA Naruaki (ORIST), SHIRAKAWA Nobuhiko

A133 Effect of Refrigerant-Flow Pass Pattern on Condensation Performance of Parallel Flow Heat Exchanger for Air Conditioner
○ HIKARU Eda (UACJ), TOMOAKI Toyama, SAYO Fukada, SHIRO Katahira

A134 Effect of Micro-channel Inner Rib on Parallel Flow Type Heat Exchanger for Air Conditioner
○ TOYAMA Tomoaki (UACJ), FUKADA Sayo, KATAHIRA Shiro, MIZUTA Yoshihiko

Room B <11 September (Wed.)>

Organized Session OS-3
"Heat and Mass Transport Phenomena with Solid-Liquid Phase Change"

Organizers: TERAOKA Yoshikazu (Kanazawa Univ.), ASAOKA Tatsunori (Shinshu Univ.)

09:40 ～ 10:40 OS-3 (1) [Chairperson: TERAOKA Yoshikazu (Kanazawa Univ.)]

B111 The effect of crystals fixation of slurry heat storage material on heat transfer characteristics
◎ MATSUMOTO Yoshikazu (Shinshu Univ.), ABE Shunsuke, NAKAZONO Junichi (Mitsubishi Electric), ASAOKA Tatsunori (Shinshu Univ.)

B112 Heat storage characteristics of sugar alcohol for high temperature latent heat storage material
◎ ITO Taiki (Aoyamagakuin Univ.), ABE Syunsuke (Shinshu Univ.), ASAOKA Tatsunori, MORIMOTO Takashi (Aoyamagakuin Univ.), KUMANO Hiroyuki

B113 Numerical analysis of natural convection of a suspension with melting and solidification of dispersoid in a system with vertical heating/cooling walls
◎ MORIMOTO Takashi (Aoyama Gakuin Univ.), ASAOKA Tatsunori (Shinshu Univ.), KUMANO Hiroyuki (Aoyama Gakuin Univ.)

11:00 ～ 12:20 OS-3 (2) [Chairperson: ASAOKA Tatsunori (Shinshu Univ.)]

B121 Continuous generation of ice containing ozone MBs due to cycle reversal of belt velocity
Investigation on temperature-dependencies of concentrations of ozone MBs fixed in ices under conditions of maximum and minimum ice formations
◎ AYATANI Rikuto (Chuo Univ.), UMEHARA Yuri, INABA Yotaro, MATSUMOTO Koji

B122 Crystal State of Ice Crystal during Directional Solidification along a Cooling Surface at a High Growth Velocity
◎ KOBAYASHI Hokuto (Kanazawa Univ.), TERAOKA Yoshikazu, YOKOYAMA Yumi (JFE Steel Corp.)

B123 Suppression of non-uniformity of additives during solidification of cooling storage material
◎ NAKAYAMA Naoya (Tokyo Institute of Technology), HAMAGUCHI Kohei, OKAWA Seiji, HOZUMI Tsutomu

B124 Study of sessile droplet freezing delay on micro/nano structured surfaces
○ YAMADA Yutaka (Okayama Univ.), HORIBE Akihiko

Organized Session OS-8
"Phenomena and Application Technology on Frost, Snow and Ice"

Organizers: INOUE Sho (National Institute of Technology, Ichinoseki College), ONISHI Hajime (Kanazawa Univ.)

13:30 ～ 14:50 OS-8 (1) [Chairperson: FUJINAWA Takeshi (Central Research Institute of Electric Power Industry)]

B131 Development of continuous heating cycle
1st Report: Theoretical study on high efficiency defrost operation
○ TAKENAKA Naofumi (Mitsubishi Electric Corporation), WATANABE Kazuya, HATOMURA Takeshi, WAKAMOTO Shinnichi

B132 Development of continuous heating cycle
2nd Report: Verification experiments of high-efficiency defrosting operation
◎ ISHIMURA Shohei (Mitsubishi Electric), TAKENAKA Naofumi, WATANABE Kazuya, KONDO Masakazu, SATO Masakazu, HAYAMARU Yasuhide, KAWASHIMA Atsushi, TASHIRO Yusuke

B133 Simulation Study of Water Retention and Drainage on Heat Exchanger for Heat-pump Air-conditioners.
PANDA Kanishka (Daikin Industries, Ltd.), HUANG Long, ○ KAMADA Toshimitsu

B134 Study on measurement of frost layer thickness using image processing
○ INOUE Sho (National Institute of Technology, Ichinoseki College), EMOTO Taiga (Seiko Epson)

15:10 ～ 16:50 OS-8 (2) [Chairperson: INOUE Sho (National Institute of Technology, Ichinoseki College)]

B141 Prediction of frost formation on flat plate by mathematical model based on nucleation theory
◎ KURATA Takumi (Waseda Univ.), HATTORI Akihiro, HORIKOSHI Daiki, TOKAWA Satoru, SATO Tetsuya

B142 Effect of Surface Properties on Microstructure of Frost Layer
○ NISHIURA Yuto (Kansai Univ.), MATSUMOTO Ryosuke, SHIOKAWA Takahiro, SHIMIZU Tomohiro, YORIOKA Takuya, ARAKI Takuto (Yokohama National Univ.)

B143 Study on mechanism of frost-crystals-generation
◎ AGUI Haruka (Tamagawa Univ.), OHKUBO Hidetoshi, HIROTANI Toshiki

B144 Heat and mass Transfer in Frost Formation on Surfaces of Copper Spheres under Natural Convection
◎ TAKAHASHI Kyohei (Tamagawa Univ.),

MOROKUMA Takayuki (Kanagawa Univ.), OKUBO Hidetoshi (Tamagawa Univ.), UTAKA Yoshio (Tenshin Univ.)

B145 Clarification of characteristics of cohesive force of ice particles in ice slurry during long time storage
Investigation on influence of surfactant added
○ UMEHARA Yuri (Chuo Univ.), MAEZAWA Kazuomi, AYATANI Rikuto, INABA Youtaro, MATSUMOTO Koji

Room C <11 September (Wed.)>

Organized Session OS-7
"Performance Evaluation of Refrigerators, Air-conditioners and Heat Pump Water Heaters"
Organizers: WATANABE Choyu (Chubu Electric Power), SAITO Kiyoshi (Waseda Univ.), NISHIMURA Nobuya (Osaka City Univ.), WAKUI Tetsuya (Osaka Prefecture Univ.)

09:40 ～ 10:40 OS-7 (1) [Chairperson: WATANABE Choyu (Chubu Electric Power)]

C111 Prediction of refrigerant flow condition in small diameter copper tube by strain measurement
◎ KOMORI Daisuke (Osaka City Univ.), NISHIMURA Nobuya, YAMADA Kenji (Osaka Gas)

C112 Experimental study on ZEB realization of air conditioning and ventilation system
○ MATSUDA Ryusuke (Osaka City Univ.), ICHIKAWA Kazuya, NISHIMURA Nobuya, UEDONO Norio, SHIBA Toru (Osaka Gas)

C113 Performance Analysis of Vapor-Compression Type Air-Conditioning Systems
Impact Analysis of Mixing Ratio of Refrigerants
WAKUI Tetsuya (Osaka Prefecture Univ.), ◎ OKAMURA Hiroaki, YOKOYAMA Ryohei

11:00 ～ 12:00 OS-7 (2) [Chairperson: NISHIMURA Nobuya (Osaka City Univ.)]

C121 Integrated simulation technology of industrial heat pump
Simulation concept and logic for evaluation of system performance
◎ ICHIKAWA Akihiro (Waseda Univ.), JEONG Jongsoo, MIYAOKA Yoichi, YAMAGUCHI Seiichi, SAITO Kiyoshi

C122 (Canceled)

C123 Development and Evaluation of Heat Receiver istallled on Hot-Aile
Local Cooling Technology utilizing Phase Change of Refrigerant for Data Center
◎ NATSUMEDA Takafumi (NEC), TODOROKI Koichi, CHIBA Masaki, MIYAMOTO Yoshinori, RAJPUT Singh Nirmal, ISHIHARA Kunihiko, TSUZUKI Akio (NTT Communications Corporation), YOSHIKAWA Minoru (NEC)

Workshop WS-3
"The latest HVAC&R technology of natural refrigerants"
Moderators: SAITO Kiyoshi (Waseda Univ.), KANDO Masanori (Mayekawa Manufacturing), OHNO Keisuke (Waseda Univ.), IRIE Tomoyoshi (EBARA REFRIGERATION EQUIPMENT & SYSTEMS)

13:30 ～ 14:50 WS-3 (1) [Chairperson: NISHIYAMA Noriyuki (Waseda Univ.)]

C131 Latest refrigerant regulations for refrigeration and air-conditioning systems
○ SAKAI Takeshi (JRAIA)

C132 Adaption automotive compressor to refrigeration unit.
Simulation of refrigeration unit which is equipped with HC and CO2 refrigerant
○ YAMAGUCHI Yukio (Sanden Automotive Components Corporation)

C133 Trends in Research and Development on Heat Transfer Technology of Natural Refrigerants
○ MIYARA Akio (Saga Univ.)

C134 Development trends of desiccant related technologies
○ KODAMA Akio (Kanazawa Univ.)

Organized Session OS-9
"Application of Simulation Technology for Refrigeration, Air-conditioning and Water Heating"
Organizers: YAMAGUCHI Seiichi (Waseda Univ.), NONAKA Masayuki (Hitachi-Johnson Cntrols Air-Conditioning, Inc.), YAMASHITA Koji (Mitsubishi Electric Corp.), TAIRA Shigeharu (Daikin Industries, LTD.)

15:10 ～ 16:50 OS-9 (1) [Chairperson: YAMAGUCHI Seiichi (Waseda Univ.)]

C141 Performance Analysis of Residential Air Conditioner for High Ambient Temperature Region using Low GWP Refrigerants
○ NAKAJIMA Komei (JRAIA), HAIKAWA Tomoyuki, YAMASHITA Koji, TAIRA Shigeharu

C142 Characteristics of gas injection cycle heat pump for system control
◎ YOSHIDA Chihiro (Waseda Univ.), OHNO Keisuke, YAMAGUCHI Seiichi, SAITO Kiyoshi,

FUTAWATARI Naoki (NTT FACILITIES), UDAGAWA Yosuke

C143 Unsteady analysis of centrifugal chiller by numerical simulation
◯ TERASAKI Yutaka (Waseda Univ.), YAMAGUCHI Seiichi, SAITO Kiyoshi, MIYOSHI Naoya (MTH), TATEISHI Koki (MHI), HASEGAWA Yasushi (MTH)

C144 Simulation technology of Oil circulation rate with Moving particle analysis
Flow analysis of oil mist in scroll compressor
◯ MATSUNAGA Kazuyuki (JCH), NOZAKI Tsutomu (Hitachi)

C145 Research on data generation technology for verification
On development and evaluation of the condition prediction model for refrigeration and freezing showcase
◯ SHIRAKI Takashi (Fuji Electric), SHIOTA Hideaki

Room D <11 September (Wed.)>

Workshop WS-5
"Evaluation of safety, properties and cycle performance of next generation low GWP refrigerants"
Moderator: Research Committee on Next Generation Refrigerants

09:40 ～ 10:40 WS-5 (1) [Chairperson: HIHARA Eiji (The Univ. of Tokyo)]

D111 [Keynote] NEDO Projects Related to Fluorocarbon Countermeasures
◯ ABE Masamichi (NEDO)

D112 Evaluation of Ignition Probability by Electric Parts and Appliances to Next-Generation Refrigerant Installed to Room Air Conditioner
◯ TOMOHIKO Imamura (Suwa Univ. of Science), KYOHEI Shirahata, HIROAKI Narusawa

11:00 ～ 12:20 WS-5 (2) IMAMURA Tomohiko (Suwa Univ. of Science)]

D121 A Helmholtz Energy Equation of State for R1336mzz(E)
◯ AKASAKA Ryo (Kyushu Sangyo Univ.)

D122 Leakage of next generation refrigerants from an air conditioner to a room
◎ NAOYA Ashihara (The Univ. of Tokyo), MAKOTO Ito, CHAOBIN Dang, HIHARA Eiji

D123 Risk assessment of built-in refrigerated display cabinet using A3 refrigerant
◯ YAMASHITA Koji (JRAIA), SAKAMOTO Yoshihisa, KATO Toshimasa, ISHIHARA Shigeki, KOBAYASHI Akira, KAINUMA Hidekazu, HASEGAWA Takaharu, OSAWA Katsuyuki, NAGAI Hiroshi, HOSAKA Keiko

D124 Risk Assessment of Mini-split Air Conditioners using A3 Refrigerant
◯ TAKAICHI Kenji (JRAIA), TAIRA Shigeharu, BABA Atsushi, IMOTO Tsutomu, ITAKURA Syunji, MORI Hironori, MAKINO Hiroaki

13:30 ～ 14:50 WS-5 (3) [Chairperson: SAITO Kiyoshi (Waseda Univ.)]

D131 Development of refrigerant information communication site “w-refrigerant.com”
◯ SAITO Kiyoshi (Waseda Univ.)

D132 Development of Assessment Techniques for Next-Generation Refrigerant with Low GWP Values
◯ MIYAOKA Yoichi (Waseda Univ.), GIANNETTI Niccolo, YAMAGUCHI Seiichi, SAITO Kiyoshi, ENOKI Koji (The Univ. of Electro-Communications), INOUE Yohei, SEI Yuichi, MINATO Akihiko, SEKIGUCHI Michie

D133 Numerical investigation of mixed refrigerants flow in the expansion valve
◯ INOUE Yohei (UEC), MINATO Akihiko, SEI Yuichi, SEKIGUCHI Michie, SAITO Kiyoshi (Waseda Univ.), YAMAGUCHI Seiichi, GIANNETTI Niccolo, MIYAOKA Yoichi

D134 The Exergetic Analysis of a Mechanical Vapour Compression System using a Ternary Mixture (R32/R1234yf/R744) for Low GWP Applications
◯ THU Kyaw (Kyushu Univ.), TAKEZATO Kosei, SENBA Sho, PERERA U.C.A., TAKATA Nobuo, MIYAZAKI Takahiko, HIGASHI Yukihiro

Organized Session OS-5
"Thermophysical Properties of Refrigerants"
Organizers: AKASAKA Ryo (Kyushu Sangyo Univ.), MATSUDA Kenji (MITSUBISHI HEAVY INDUSTRIES THERMAL SYSTEMS), KAYUKAWA Yohei (AIST)

15:10 ～ 16:30 OS-5 (1) [Chairperson: AKASAKA Ryo (Kyushu Sangyo Univ.)]

D141 Assessment of surface tension measurement results and correlations for HFO low-GWP pure refrigerants
◎ IWASAKI Shun (Nagasaki Univ.), KONDOU Chieko, HIGASHI Yukihiro (Kyushu Univ.)

D142 Speed of Sound Measurement of Liquid Phase

HFO-1336mzz(Z)
◎ SUENAGA Shuto (Fukuoka Univ.), NISHIYAMA Takashi, GAO Lei, HONDA Tomohiro, AKASAKA Ryo (Kyushu Sangyo Univ.)

D143 Development of Low GWP Refrigerant R468A for Refrigeration
○ OHKUBO Shun (Daikin Industries, Ltd.), GOBOH Kenji, TSUCHIYA Tatsumi

D144 Vapor Pressure Measurements of HFO1336mzz(Z) and HFO1336mzz(E)
○ SAKODA Naoya (Kyushu Univ.), HIGASHI Yukihiro

Room E <11 September (Wed.)>

Organized Session OS-11
"Refrigerators/Heat Pumps based on Absorption, Adsorption or Chemical Reactions"
Organizers: IKUMI Yonezo (Waseda Univ.), HAMAMOTO Yoshinori (Kyushu Univ.), KUBOTA Mitsuhiro (Nagoya Univ.), MIYAZAKI Takahiko (Kyushu Univ.)

09:40 ～ 10:40 OS-11 (1) [Chairperson: KUMITA Mikio (Kanazawa Univ.)]

E111 Study on Adsorption Heat Pump using Natural Mesoporous Material
Part 10: Cost reduction of composite adsorbent and performance enhancement with mass recovery
○ TOGAWA Junya (Nihon Netsugen System), HIRATA Ryusuke (Hokudai), FANG He, SEOL Sunghoon, NAGANO Katsunori

E112 Study on Adsorption Heat Pump using Natural Mesoporous Material
Part 11: Performance Improvement with heat and mass recoveries
◎ HE Fang (Hokkaido Univ.), NAGANO Katsunori, JUNYA Togawa (Nihon Netsugen Systems CO., LTD)

E113 (Canceled)

11:00 ～ 12:20 OS-11 (2) [Chairperson: KUBOTA Mitsuhiro (Nagoya Univ.)]

E121 Analysis of Adsorption behavior of Silica Gel Particles in an Oscillating Flow Field Using CFD
◎ SATO Shu (Tokyo Univ. of Agriculture and Technology), AKISAWA Atsushi, UEMICHI Akane, UEDA Yuki, FUJIKI Junpei

E122 Influence of vapor pressure on adsorption rate consolidated on a heat exchanger
◎ ADACHI Yuma (Kyushu Univ.), NAGAYOSHI Ryota, HAMAMOTO Yoshinori, MIYATA Kazushi

E123 Measurement of Time Constants for Water Vapor Adsorption to a consolidated Silica-gel Micro Particle layer on QCM sensor
◎ FURUYA Kohei (Kyushu Univ.), HAMAMOTO Yoshinori, MIYATA Kazushi

E124 Measurement of adsorption kinetics by using image processing
◎ YANINGSIH Indri (Kyushu Univ.), ENOKI Koji (The Univ. of Electro-Communications), WIJAYANTA T Agung (Sebelas Market Univ.), THU Kyaw (Kyushu Univ.), MIYAZAKI Takahiko

13:30 ～ 14:50 OS-11 (3) [Chairperson: IKUMI Yonezo (Waseda Univ.)]

E131 Story of Type-2 Absorption Heat Pump or Heat Transformer
○ IKUMI Yonezo (Waseda Univ.), MASHIMO Katsuyuki, TANAKA Takao (Former SANYO Electric Co., Ltd.)

E132 Development of a Middle-low Temperature Absorption Chiller with Output of 1 to 3°C Chilled Water
Chilled water characteristics by calculation and experiment
○ FUJII Tatsuo (Johnson Controls Building Efficiency Japan), MIYAUCHI Minoru, TAKEDA Nobuyuki, UCHIDA Shuichiro (Hitachi-Johnson Controls Air Conditionings, Inc.)

E133 Energy saving of Waste heat utilization absorption chiller/Heater on power saving PR type by operation improvement.
Waste heat recovery improvement by cooling water control at partial load operation.
ISHIZAKI Shuji (Panasonic), ○ ENOMOTO Eiichi

E134 Dynamic Characteristic Analysis of Solar-assisted Absorption Air-conditioning System
Modeling and Dynamic Analysis of Combined Operation with Solar Heat and City Gas
◎ SAKATA Keijyu (Osaka City Univ.), FUKUTOMI Naoki, NISHIMURA Nobuya, YAMADA Kenji (Osaka Gas)

15:10 ～ 16:30 OS-11 (4) [Chairperson: GIANNETTI Niccolo (Waseda Univ.)]

E141 Membrane wrapped absorber for automobiles
○ EBATA Yusuke (Aisin seiki), TSUBOUCHI Osamu, INADA Takaaki (AIST), TAKEMURA

Fumio, DANG Chaobin (The Univ. of Tokyo), HIHARA Eiji

E142 Experimental measurement of HFC-134a absorption/desorption rate for absorption chiller cycle
◎ ESAKI Takehiro (Fukuoka Univ.), UCHIYAMA Hiroki, MATSUKUMA Yosuke

E143 Generation characteristics of PTFE hollow fiber membrane module for absorption chiller
◎ HE JIACHENG (The Univ. of Tokyo), DANG CHAOBIN, HIHARA Eiji

E144 Numerical Simulation of Falling-Film Considering Wettability at High Temperature
◎ FUKUI Ryota (Waseda Univ.), YAMAGUCHI Seiichi, SAITO Kiyoshi

－－－－－ Day #2 －－－－

Room A <12 September (Thu.)>

Organized Session OS-2
"Technological Development in Heat Exchangers"
Organizers: HASHIMOTO Katsumi (Central Research Institute of Electric Power Industry), DANG Chaobin (The Univ. of Tokyo), KONDOU Chieko (Nagasaki Univ.)

09:20 ～ 10:40 OS-2 (2) [Chairperson: KARIYA Keishi (Saga Univ.)]

A211 The Visualization of Two-Phase Flow Refrigerant Distribution of Vertical Header with Insertion Structure of Branch Pipe to Main Pipe
○ ONAKA Yoji (Mitsubishi Electric Corporation), MATSUMOTO Takashi

A212 A Characteristic of Distribution of R134a Two-phase Flow in a Horizontal Multi Tube
Change the shape of Header Pipe for improvement of Mal-Distribution in vertical Upward Flow
KATSUTA Masafumi (Waseda Univ.), ◎ ISHIKAWA Yusuke, BAE Sangchul

A213 Gas-Liquid Distribution of Refrigerant Flow in Multi-pass Channels with Vertical Headers
Measurements of Gas-Liquid Distribution Ratios and Pressure Losses
◎ ONODERA Ayumi (Toshiba Carrier), HATADA Takafumi, ARAKI Yuto (Mie Univ.), HIROTA Masafumi

A214 (Canceled)

11:00 ～ 12:20 OS-2 (3) [Chairperson: MIYATA Kazushi (Kyushu Univ.)]

A221 Air-side performance of Fin-flat-tube heat exchanger
◎ YAMAMURA Shuji (The Univ. of Tokyo), MUROFUSHI Takahiko, HIGASHI Tomohiro, DANG Chaobin, HIHARA Eiji

A222 Prediction of Fin efficiency and External Heat Transfer Coefficient and Pressure Drop of Cross-Finned Flat Tube Heat Exchangers
○ YATSUYANAGI Akira (Mitsubishi Electric), ISHIBASHI Akira, NAKAMURA Shin

A223 Method for improving air-side heat transfer using metal sintered body
◎ WATANABE Ren (The Univ. of Electro-Communications), ENOKI Koji, OTOMO Yusuke, KOBAYASHI Takuto, OKAWA Tomio, AKISAWA Atsushi (Tokyo Univ. of Agriculture and Technology), UEDA Yuki

A224 Heat transfer and pressure drop characteristics of curved tube with discrete ribs for ground source heat exchanger
◎ KURIYAMA Goichi (Saga Univ.), ARIWIBOWO H Teguh, KARIYA Keishi, MIYARA Akio

13:30 ～ 14:50 OS-2 (4) [Chairperson: HASHIMOTO Katsumi (Central Research Institute of Electric Power Industry)]

A231 [Keynote] Progress in heat transfer field with MEMS technology
○ NAKABEPPU Osamu (Meiji Univ.), YABUKI Tomohide (Kyushu Institute of Technology), DEJIMA Kazuhito (The Univ. of Shiga Prefecture)

A232 Visualization and Void Fraction Measurement of Refrigerant Flow in Cross-Flow Type Mini-channel Evaporator
Improvement effect in flow distribution by using perforate or offset rib.
◎ MORIYASU Ryosuke (Kobe Univ.), SUGIMOTO Katsumi, MURAKAWA Hideki, ASANO Hitoshi, KUBO Yohei (Kobe Steel), YAMADA Sayaka, FUKUTANI Kazuhisa

A233 A Study on Quality Measurement in Refrigeration Cycle (Ⅱ)
◎ NISHIHATA Katsuya (Shizuoka Univ.), FUKUTA Mitsuhiro, MOTOZAWA Masaaki, MORISHITA Shota, MAKIMOTO Naoya (DENSO CORPRATION)

Room B <12 September (Thu.)>

General Session GS-1
"General Session"

11:00 ～ 12:20 GS-1 (1) [Chairperson: OTAKA Toshio (Kokushikan Univ.)]

B211 Next Generation Low-GWP Refrigerant "AMOLEA"
○ FUKUSHIMA Masato (AGC), HAYAMIZU Hiroki, SOGA Tamaki, HASHIMOTO Mai

B212 Clarification of disproportionation reaction of HFO-1123 and evaluation of reaction inhibitor
◎ ZHIHUA Zhang (The Univ. of Tokyo), MAKOTO Ito, CHAOBIN Dang, HIHARA Eiji

B213 Effect of Lubricant Additive on Diesel Combustion Characteristics of Compressor during Pump-Down of Air Conditioner
○ SAITOH Shizuo (The Univ. of Tokyo), HIGASHI Tomohiro, DANG Chaobin, HIHARA Eiji

B214 Development of a large capacity compound-type centrifugal chiller and centrifugal heat pump using R1234ze (E)
○ MIYAMOTO Jyun (MTH), TANIMURA Hirotaka, KONO Takahiro, SHIMIZU Kazumi, NISHII Kazuki, TANAKA Hidehiro

13:30 ～ 14:50 GS-1 (2) [Chairperson: WATANABE Manabu (Tokyo Univ. of Marine Science and Technology)]

B221 Field environment measurement using wireless sensing unit
○ AYAME Hisao (SNK), TAKATSUKA Takeshi, KISHIWADA Taka, OMOUE Tomomi, YOSHIDA Gaku

B222 Effect of subcooling water flow rate on the energy conservation of refrigerated cabinet by using PCM
KATUTA Masahumi (Waseda Univ.), ◎ YASUKOCHI Akira, BAE Sangchul, WATANABE Tosiyasu (NTT)

B223 A study for energy saving of a domestic air conditioner
○ MANIWA Kana (Kanagawa Institute of Technology), YADA Naoyuki, SAKAI Ryuji (CONTINEWM Co.,Ltd.)

B224 Examination of Correspondence to ZEH and Energy Management in Detached House
◎ HORII Masato (Waseda Univ.), KAWAMATA Mei (Sekisui House, Ltd.), SEKIYA Hiroshi (Waseda Univ.)

Room C <12 September (Thu.)>

International Session IS
"Advancement in HVAC&R Technologies in Asia"
Organizers: TOJO Kenji (Tojo R&D design office / Waseda Univ.), MIYARA Akio (Saga Univ.), KUMANO Hiroyuki (Aoyama Gakuin Univ.), JUN Xue (Hitachi Ltd.)

09:20 ～ 10:40 IS (0) [Chairperson: MIYARA Akio (Saga Univ.)]

C201 Climate Change & Zero Energy Building in Korea
○ PARK Jin Chul (Chung-Ang Univ.)

C202 Design and Development of Monitoring Modules and Improvement Systems for Air Purifiers and Total Heat Exchanger Purification
CHANG Ya-Ling (National Chin-Yi Univ. of Technology), ○ LIU Yu-Ling, KUAN Yean-Der, CHIU Yu-Wei

C203 A Study of Application of CFD to Enhancement of Low Load Performance of Centrifugal Refrigerant Compressor
HUNG Kuo-Shu (Industrial Technology Research Institute), ○ HO Kung-Yun (National Chin-Yi Univ. of Technology), LIN Huang-En, KUAN Yean-Der, HUANG Jeng-Min, LIU Chung-Che (Industrial Technology Research Institute)

10:40 ～ 12:20 IS (1) [Chairperson: KUMANO Hiroyuki (Aoyama Gakuin Univ.)]

C211 An Experimental Study of Large-Scale Graphene-Based Membrane Used in Enthalpy Recovery Ventilators
LUO Jet Win (National Chin-Yi Univ. of Technology), HISYAM Nor Mohamad, ○ FARIDAH - Dini

C212 Performance Investigation of a New HVAC System for Electric Vehicle
HUANG Jhong-Wei (Southern Taiwan Univ. of Science and Technology), ○ HSIAO Yi-Jhong (National Chiayi Univ.), HSU Jer-Jia (Southern Taiwan Univ. of Science and Technology), CHANG Tong-Bou (National Chiayi Univ.)

C213 Field Test of an Optimal Control Method for Central Air-conditioning Water-Side Systems
○ HSIEH Chia-Hsing (Industrial Technology Research Institute), WU Hsiao-Yuan, HU Chih-Jian, CHEN Guan-Wen, CHAI Min-Lun

C214 A Parametric Analysis on the Performance of Adsorption Rotating Wheel Desiccant Systems
YANG Chien-Yuh (National Central Univ.), ○ CHEN Wei-Liang

C215 Heat Transfer and Pressure Drop during Condensation of R1234yf inside a 2.5 mm OD Microfin Tube
○ BASHAR M. Khairul (Saga Univ.), NAKAMURA Keisuke, KARIYA Keishi, MIYARA Akio

13:30 ～ 15:10 IS (2) [Chairperson: JUN Xue (Hitachi Ltd.)]

C221 CFD Investigation for a Solar-Driven Ventilation Cooling System of Vehicle
CHANG Tong-Bou (National Chiayi Univ.), ○ WU Pei-Yi, CHENG Yo-Jia

C222 Apply CFD and Taguchi Method to Optimize Motorcycle Helmet Cooling Effect
CHANG Tong-Bou (National Chiayi Univ.), ○ HUANG Po-Yuan, YANG Cheng-Tse

C223 The Development of the Optimized Casing Shape with Superior Hydraulic Performance for a Split-Type Air-Conditioner

○ SHIH Yang-Cheng (National Taipei Univ. of Technology), CHEN Po-Hsun, HSIEH Ting-Yi, LI Chun-Kai

C224 A High Efficient DC Drive Inverter Control Duo Loop Air-Cooled Chiller
○ CHUAH Khoy Yew (National Taipei Univ. of Technology)

C225 Air Bubbles in Frozen Two-dimensional Water Droplets
○ SONG Mengjie (The Univ. of Tokyo), DANG Chaobin, HIHARA Eiji

Room D <12 September (Thu.)>

Seminar SN-1
"Seminar on compressor technology"
Moderators: TOJO Kenji (Tojo R&D design office / Waseda Univ.), CHIKANO Masatsugu (Hitachi Ltd.)

09:20 ～ 10:40 SN-1 (1) [Chairperson: TOJO Kenji (Tojo R&D design office / Waseda Univ.)]

D211 High Efficiency Reciprocating Compressor with Low-speed Oil pump for Refrigerator
○ NAGATA Shuhei (Hitachi, Ltd.), NAGAO Tomohiro (Hitachi Global Life Solutions, Inc.), KANOU Masakazu, KOSOKABE Hirokatsu (Hitachi, Ltd.(retired))

D212 Development of Outer Rotor Fan motor for Air conditioning
○ TAKAYAMA Yoshinori (Daikin Industries, Ltd.), OHTSUJI Motofumi, FUJII Hideki

D213 A CFD simulation of gas-liquid two-phase flow in a screw compressor by using SCORG and PumpLinx
○ MIYAKAWA Akira (Wave Front Co., Ltd.)

D214 Presentation of hydro-dynamic lubrication calculation method for tribology needs
○ KAKOI Kunihiko (TriboLogics Corp.)

11:00 ～ 12:20 SN-1 (2) [Chairperson: CHIKANO Masatsugu (Hitachi Ltd.)]

D221 Adaptability of CFD analysis in the oil circulation design of the scroll compressor
○ KAWABATA Shinichi (Daikin Industries, Ltd.), DEGUCHI Ryohei, ISOME Yuka, MATSUURA Hideki

D222 Development of Self-Healable Superhydrophilic Materials
○ HOZUMI Atsushi (AIST)

D223 Development of Mist Type Cooling Equipment for Outdoor Space using Ultra-miniaturization Technology of Mist
○ OGAWA Osamu (Panasonic), OGATA Takeshi, KOBAYASHI Yosuke, KURODA Ryo, TABATA Daisuke, ISOMI Akira, UEDA Yuki

D224 Reduction of energy consumption by temperature and humidity individual control system
○ MATSUI Nobuki (Daikin Industries, Ltd)

Organized Session OS-4
"Present status and future development of compressors"
Organizers: Mitsuhiro FUKUTA (Shizuoka Univ.) Kiyoshi SAWAI (Hiroshima Institute of Technology)

13:30 ～ 15:10 OS-4 (1) [Chairperson: FUKUTA Mitsuhiro (Shizuoka Univ.)]

D231 Visualization inside compressor of using transmission X-ray
○ ITO Yasutaka (Toshiba Corporation), HONGO Takuya, HATO Takehiro, OTA Satoshi (Toshiba Carrier Corporation), KIMURA Shigeki

D232 Measurements of oil level and refrigerant concentration in oil by maximum bubble pressure method
◎ TSUJITA Ryo (Shizuoka Univ.), KIMURA Ryota, HUKUTA Mitsuhiro, MOTOZAWA Masaaki

D233 LEAKAGE AND FRICTION MEASUREMENT UNDER TIP SEAL OF SCROLL COMPRESSOR
◎ SOTANI Takeru (Shizuoka Univ.), FUKUTA Mitsuhiro, MOTOZAWA Masaaki

D234 Experimental Study of Leakage Reduction on Reciprocating Compressor（2nd Report）
MINEMOTO Atsushi (Hiroshima Institute of Technology), ◎ TACHIBANA Yuya, SAWAI Kiyoshi, ISHII Noriaki (Osaka Electro-Communication Univ.)

D235 Fundamental study on a rotary expander for a miniature Rankin cycle system using waste heat
○ RYUSEI Ebine (Kokushikan Univ.), SHUN Sekine, RYOSUKE Hagiya, TOSHIO Ootaka

Room E <12 September (Thu.)>

Organized Session OS-10
"Desiccant/Humidity Control/Open Cycle Air Conditioning"
Organizers: YAMAGUCHI Seiichi (Waseda Univ.), TSUJIGUCHI Takuya (Kanazawa Univ.), NABESHIMA Yuki (Shizuoka Institute of Science and Technology), AKAHIRA Akira (Aomori Prefectural Industrial Technology Research Center)

09:20 ～ 10:40 OS-10 (1) [Chairperson: YAMAGUCHI Seiichi (Waseda Univ.)]

E211 Challenge to new air conditioning technology realization
Smart hydrogels that absorb moisture and ooze water
○ SAKIKAWA Nobuki (SHARP Corporation), MATSUMOTO Kazuya (KANSAI Univ.), MIYATA Takashi

E212 Investigation of air-conditiioning system performance utilizing solor energy in snowy region
○ AKAHIRA Akira (Aomori Prefectural Industrial Technology Research Center)

E213 Performance evaluation on desiccant air conditioning system
◎ HIGASHI Tomohiro (The Univ. of Tokyo), DANG Chaobin, HIHARA Eiji

E214 Study on Latent Heat Sensible Heat Separation Air Conditioning
3rd Report: Development of outside air treatment air conditioner using lithium chloride solution
○ EBINE Takeshi (Techno Ryowa Ltd.), TAKIGUTI Yosuke

11:00 ～ 12:20 OS-10 (2) [Chairperson: TSUJIGUCHI Takuya (Kanazawa Univ.)]

E221 Performance evaluation on enhanced polymer sorbent
◎ HIGASHI Tomohiro (The Univ. of Tokyo), KO Huigon (Seoul National Univ.), DANG Chaobin (The Univ. of Tokyo), HIHARA Eiji

E222 Sorption characteristics of a thermal storage vessel using organic sorbent particles
HORIBE Akihiko (Okayama Univ.), YAMADA Yutaka, ○ MARUNO Tomohiro

E223 Experimental analysis of dehumidification and humidification characteristics of desiccant module
○ ZHANG Li (Central Research Institute of Electric Power Industry), HIGASI Tomohiro (The Univ. of Tokyo), SAIKAWA Michiyuki (Central Research Institute of Electric Power Industry), HASEGAWA Hiromi, HIHARA Eiji (The Univ. of Tokyo), DANG Chaobin

E224 Heat and mass transfer of gas-liquid contactor for liquid desiccant air-conditioning system
◎ KANEKO Takuya (Waseda Univ.), JAYSON VARELA Richard, YAMAGUCHI Seiichi, KIYOSHI Saito, NAKAYAMA Hiroshi (Chubu Electric Power Co.), WANG Xinming (Evonik Japan Co.)

Organized Session OS-11
"Refrigerators/Heat Pumps based on Absorption, Adsorption or Chemical Reactions"
Organizers: IKUMI Yonezo (Waseda Univ.), HAMAMOTO Yoshinori (Kyushu Univ.), KUBOTA Mitsuhiro (Nagoya Univ.), MIYAZAKI Takahiko (Kyushu Univ.)

13:30 ～ 14:50 OS-11 (5) [Chairperson: HAMAMOTO Yoshinori (Kyushu Univ.)]

E231 Preparation of LiOH/Mesoporous Carbon Composites and Their Hydration Characteristics
◎ NISHIZAWA Junya (Kanazawa Univ.), KUBOTA Mitsuhiro (Nagoya Univ.), HIGASHI Hidenori (Kanazawa Univ.), SETO Takafumi, OTANI Yoshio, KUMITA Mikio

E232 Formation of Adsorbent Layer on Aluminum Substrate and Its Water Vapor Adsorption Characteristics
◎ OTA Shinji (Kanazawa Univ.), NISHIZAWA Junya, HIGASHI Hidenori, SETO Takahumi, OTANI Yoshio, KODAMA Akio, KUMITA Mikio

E233 Heat Storing and Releasing Characteristics of Chemical Heat Storage System with LiOH/Mesoporous Carbon Composite Material
○ KUBOTA Mitsuhiro (Nagoya Univ.), YAMASHITA Seiji, KITA Hideki, KUMITA Mikio (Kanazawa Univ.)

E234 Study on heat battery working by using oxidation and reduction reversible reaction
KOBAYASHI Noriyuki (Nagoya Univ.), ◎ ICHINOSE Atsuhiro, SHIMIZU Takuya

－－－－－ **Day #3** －－－－

Room A <13 September (Fri.)>

Organized Session OS-2
"Technological Development in Heat Exchangers"
Organizers: HASHIMOTO Katsumi (Central Research Institute of Electric Power Industry), DANG Chaobin (The Univ. of Tokyo), KONDOU Chieko (Nagasaki Univ.)

09:20 ～ 10:40 OS-2 (5) [Chairperson: KONDOU Chieko (Nagasaki Univ.)]

A311 Heat Transfer Enhancement of Falling Film Evaporation on a Horizontal Tube by Thermal Spray Coating
◎ UBARA Tsutomu (Kobe Univ.), SUGIMOTO Katsumi, ASANO Hitoshi

A312 Flow Boiling Heat Transfer Characteristics at Inlet Two-phase Flow Condition in Radial Expanding Channel Heat Exchanger
HONG Sihui (The Univ. of Tokyo), ○ DANG Chaobin, HIHARA Eiji

A313 Measurement of thin liquid film behavior of two phase flow inside micro rectangle tube
◎ LI Zhaoyu (The Univ. of Tokyo), HIHARA Eiji, DANG Chaobin

A314 A simulation for the occurrence of flow oscillation of boiling flow in parallel mini-channels
◎ KUROSE Kizuku (Kyushu Univ.), MIYATA Kazushi, HAMAMOTO Yoshinori

11:00 ～ 12:20 OS-2 (6) [Chairperson: DANG Chaobin (The Univ. of Tokyo)]

A321 Design and performance test of LHP using wick with 3D structure.
Performance characteristics of the low GWP refrigerant.
KATSUTA Masafumi (Waseda Univ.), ◎ AMEYA Hiroyasu, ISHIKAWA Ken

A322 Improvement of looped thermosyphons using a LISS boiling surface with R1234ze(E)
Visualization results and heat transfer characteristics
RYO Nakao (Nagasaki Univ.), ○ YUYA Matsuda, CHIEKO Kondou, FUMITAKA Motomura

A323 Study on Boiling Heat Transfer Characteristics of Upward Boiling Flows in a Single-Channel Plate-Fin Heat Exchanger
○ SHIKICHI Kazuaki (Kepco), MINOURA Kenji (Kobe Univ.), ASANO Hitoshi

A324 Optimization of design specifications and surface wetting properties by frost-defrost multi cycle experiment
KATSUTA Masafumi (Waseda Univ.), BAE Sangchul, ○ ASAKAWA Rio, TERAKADO Yuki (Shell), YASUI Kenzo (AGC)

Room B <13 September (Fri.)>

Workshop WS-4
"Geothermal Heat Utilization"
Moderators: TAKEDA Tetsuaki (Univ. of Yamanashi), SASAKI Naoe (Nihon Univ.)

11:00 ～ 12:20 WS-4 (1) [Chairperson: TAKEDA Tetsuaki (Univ. of Yamanashi)]

B311 [Keynote] R&D frontiers in borehole type ground source heat pump system technologies toward to higher efficiency and reasonable cost
○ NAGANO Katsunori (Hokkaido Univ.), KATSURA Takao, SAKATA Yoshitaka

B312 Field test of ground source and air source hybrid air-conditioning system
◎ TABATA Ryoma (Saga Univ.), KURIYAMA Goichi, KARIYA Keishi, MIYARA Akio

B313 Simulation of ground and air source hybrid air-conditioning system
○ KARIYA Keishi (Saga Univ.), MIYARA Akio

13:30 ～ 14:50 WS-4 (2) [Chairperson: MIYARA Akio (Saga Univ.)]

B321 Performance evaluation and development of design methodology for LNG Vaporization system with ground source heat pump
Part1 Performance evaluation of hybrid ground source heat pump system for vaporization by field experiment
○ KATSURA Takao (Hokkaido Univ.), SHOJI Yutaka, ZHA Ying, NAGANO Katsunori, AKAI Hitoshi (Fukushima Univ.), ISHIKAWA Mitsuhiro (Hokkaido electric power), SASAKI Yuto, TAKEUCHI Susumu (Tohoku electric power), SHISHIDO Jun, YASHIMA Yuichi (Nippon gas development), TANIFUJI Koji (Zeneral Heat Pump Industry)

B322 Performance evaluation and development of design methodology for LNG Vaporization system with ground source heat pump
Part2 Development of simulation tool for hybrid ground source heat pump system
○ SHOJI Yutaka (Hokkaido Univ.), KATSURA Takao, ZHA Ying, NAGANO Katsunori, AKAI Hitoshi (Fukushima Univ.), ISHIKAWA Mitsuhiro (Hokkaido electric power), SASAKI Yuto,

TAKEUCHI Susumu (Tohoku electric power), SHISHIDO Jun, YASHIMA Yuichi (Nippon gas development), TANIFUJI Koji (Zeneral Heat Pump Industry)

B323 Performance evaluation and development of design methodology for LNG Vaporization system with ground source heat pump
Part3 Investigation of design methodology for hybrid ground source heat pump system with simulaiton
○ ZHA Ying (Hokkaido Univ.), KATSURA Takao, SHOJI Yutaka, NAGANO Katsunori, AKAI Hitoshi (Fukushima Univ.), ISHIKAWA Mitsuhiro (Hokkaido electric power), SASAKI Yuto, TAKEUCHI Susumu (Tohoku electric power), SHISHIDO Jun, YASHIMA Yuichi (Nippon gas development), TANIFUJI Koji (Zeneral Heat Pump Industry)

B324 Investigation on desing method contribute to improve the performance of VRF systems with different heat source
○ SUZUKI Daiya (Hokkaido Univ.), KATSURA Takao, FUJIMURA Masahiro (Kinden spinet), NAGANO Katsunori (Hokkaido Univ.)

15:10 ～ 16:30 WS-4 (3) [Chairperson: SASAKI Naoe (Nihon Univ.)]

B331 Study on Ground Source Heat Pump in Shallow Ground
Influence of Factors on Ground Temperature
○ TANAKA Saburo (Nihon Univ.), FUKUTOMI Sho, ITO Kosuke, SASAKI Naoe

B332 Thermal performance of a ground source heat pump using the steel pipe foundation pile of a house
○ AOKI Tomoya (Univ. of Yamanashi), TAKEDA Tetsuaki, YODA Osamu (Fujishima Co, Ltd.), OKUBO Hiroji

B333 Experimental study on hot water supply system by ground source heat pump that use direct expansion method
○ ZAYASU Yuichiro (YGS), NISIZAWA Ryouiti, TAKEDA Tetsuaki (YU)

B334 Performance evaluation of ground source heat pump for agricultural house air-conditioning system
◎ ISHIKAWA Kimiaki (Univ. of Yamanashi), OKAZAWA Ryousuke, TAKEDA Tetsuaki

Room C <13 September (Fri.)>

Organized Session OS-1
"Contribution to Environment by Next-Generation Refrigerating Systems"
Organizers: KANAI Hiroshi (Panasonic Corporation), SAITO Rei (JAPAN SUN OIL COMPANY, LTD.)

09:00 ～ 10:40 OS-1 (1) [Chairperson: KANAI Hiroshi (Panasonic Corporation)]

C311 Research on the thermal environment and air quality of the classroom equipped with air conditioning and ventilation equipment
BOHGAKI Kazuaki (Tokyo City Univ.), MURAKAMI Takanobu (ecofactory), MURAKAMI Takayoshi, ○ TSUTSUMI Tatsumoto

C312 Study on consideration of direct expansion system for environmental test laboratory
Part2 Invention of control method
○ NAGATA Junichiro (Sanki Engineering), SHIMMURA Koichi, FUKUMORI Kanta, UEMURA Satoshi

C313 Assessment of heat transfer decrease by corrision on heat excahanger
◎ KOYANO Takehiro (Mitsubishi Electric Corporation)

C314 Study of Suitable Refrigeration Oil for Low GWP Refrigerants
SAITO Rei (JAPAN SUN OIL), ○ SUZUKI Yoshinori, SHISHIKURA Toshio

C315 Molecular Theoretical Study on Phase Diagram of Refrigerants
○ SASAKI Mio (The Univ. of Tokyo), HSU Wei-Lun, DAIGUJI Hirofumi

11:00 ～ 12:20 OS-1 (2) [Chairperson: SAITO Rei (JAPAN SUN OIL COMPANY,LTD.)]

C321 Development of showcase Using HFO-1234yf Refrigerant with Built-In Cooling Unit
○ IWASAKI Takahiro (FUJI ELECTRIC), WATANABE Tadao

C322 Development and Application Example of an Air-source Heat Pump Using Low-GWP Refrigerants to Heat Circulation Water
○ MORI Takachika (Mitsubishi Heavy Industries Thermal Systems), OKADA Yuji, WATANABE Choyu (Chubu Electric Power), NAKAYAMA Hiroshi

C323 Novel Refrigeration Cycle with Continuous Cooling Turbo Compressor and Condensing Ejector Using Water (R718) as Refrigerant
◎ MARUHASHI Iori (Panasonic), SHOYAMA Tadayoshi, KAWANO Bunki, KUSAKA Michiyoshi, SUN Hongzhi, YOSHIMOTO Junki,

MATSUI Masaru

C324 Advanced PID Control for Refrigerant Control
○ MORI Yuki (Mitsubishi Electric), FUJITSUKA Masashi, NAKAI Takahiro

Workshop WS-2
"Globalization of Refrigerating and Air Conditioning Systems"
Moderators: KASAHARA Shinichi (DAIKIN INDUSTRIES, Ltd.), KOYANO Takehiro (Mitsubishi Electric Corporation)

13:30 ～ 14:50 WS-2 (1) [Chairpersons: KASAHARA Shinichi (DAIKIN INDUSTRIES, Ltd.), KOYANO Takehiro (Mitsubishi Electric Corporation)]

C331 [Keynote] Activities for Continuing Progress in Global Air conditioning business
○ SUZUKI So (Mitsubishi Electric Corporation)

C332 Overview of Virtual Power Plant Project in Toyota City
TOMINO Yuuki (Chubu Electric Power Co., Inc.), ○ YAMADA Takukan, OOWAKI Yoshinori

C333 Demonstration Project on Automated Demand Response with Air Conditioning System and IoT technology in the Portuguese Republic
The 2nd Report - Interim Report of the Project –
○ NAKAO Takuya (Daikin Industries, Ltd.), FONSECA Rui, FURUI Shuji, NAKAGAWA Koichi, SEGUCHI Teppei, FUJIMOTO Shuji

15:10 ～ 16:30 WS-2 (2) [Chairpersons: KOYANO Takehiro (Mitsubishi Electric Corporation), KASAHARA Shinichi (DAIKIN INDUSTRIES, Ltd.)]

C341 [Keynote] Current status and prospects of photonic quantum technologies
○ TAKEUCHI Shigeki (Kyoto Univ.)

C342 Research and Development of Remote Refrigerant Leak Monitoring System for VRF Systems
The 1st Report - Outline of the Leak Monitoring System and the Monitoring Test Result -
○ YOSHIMI Manabu (Daikin Industries, Ltd.), HIKAWA Takeshi, KASAHARA Shinichi

C343 Visualization of Congestion with People Flow Simulation Technology
○ TORIUMI Wataru (Hitachi Ltd.), NING Rui, FUJIWARA Masayasu, KATO Manabu

Room D <13 September (Fri.)>

Organized Session OS-6
"Low Temperature Application and Technology for Food and Biological Materials"
Organizers: TANAKA Fumina (Kyushu Univ.), IMAIZUMI Teppei (Gifu Univ.), TANAKA Fumihiko (Kyushu Univ.), WATANABE Manabu (Tokyo Univ. of Marine Science and Technology)

09:00 ～ 10:40 OS-6 (1) [Chairpersons: TANAKA Fumina (Kyushu Univ.), UENO Shigeaki (Saitama Univ.)]

D311 Effects of frozen storage and thawing conditions on physical properties of glutinous rice
○ ARAKI Tetsuya (The Univ. of Tokyo), DU Keren, UENO Shigeaki (Saitama Univ.), KONO Shinji (Mayekawa Mfg. Co., Ltd.), DO Gabsoo (Nihon Univ.), MAEDA Tatsuro (Teikyo Heisei Univ.)

D312 The study of degradation factors in bread dough prepared with different freezing and storage methods
◎ IIJIMA Rui (Nihon Univ.), KOBAYASHI Rika, NARISAWA Naoki, TAKENAGA Fumio

D313 Thawing of Frozen Tissue by Utilizing High-frequency Ultrasonic Wave
（Selective Heating Effect of Ultrasonic Wave for Ice Layer）
◎ AOKI Kazuya (Kanazawa Univ.), TADA Yukio, ONISHI Hajime, HARUKI Masashi

D314 Freshness evaluation of fruits and vegetables using biospeckle
◎ OKI Kanako (Kyushu Univ.), TANAKA Fumina, TANAKA Fumihiko

11:00 ～ 12:00 OS-6 (2) [Chairpersons: WATANABE Manabu (Tokyo Univ. of Marine Science and Technology), TANAKA Fumina (Kyushu Univ.)]

D321 Modeling for weight loss prediction during food cooling
○ TOBARI Yuta (MAYEKAWA MFG.), MASUDA Kazunori, KON Madoka, KONO Shinji

D322 The simulation of water loss prediction during storage and distribution of vegetables and fuits
◎ NISHIHARA Chinatsu (Kyushu Univ.), SEONGHEON Kim, TANAKA Fumina, TANAKA Fumihiko

D323 Prediction of the dry amount of packaged food considering temperature fluctuation during frozen preservation
◎ ITO Hiromichi (Tokyo Univ. of Marine Science and Technology), WATANABE Manabu, SUZUKI Toru

13:30 ～ 14:50 OS-6 (3) [Chairperson: ARAKI Tetsuya (The Univ. of Tokyo)]

D331 Ice Recrystallization of suspended aqueous solution
○ KIMIZUKA Norihito (Hirosaki Univ.)

D332 Micro- to macro-scale measurement of internal structure in frozen foods
○ NAKAZAWA Saki (Nihon Univ.), KIMURA Yuta, DO Gabsoo, SASE Sadanori

D333 Examinations of quantitative evaluation method of food freezing process
◎ MAEKAWA Ryunosuke (Tokyo Univ. of Marine Science and Technology), WATANABE Manabu, SUZUKI Toru

D334 The effect of supercooling-freezing on suppression of ice recrystallization during storage
◎ ISHIKAWA Yasuho (Tokyo Univ. of Marine Science and Technology), WATANABE Manabu, SUZUKI Toru

15:10 ～ 16:10 OS-6 (4) [Chairperson: KIMIZUKA Norihito (Hirosaki Univ.)]

D341 Influence of fish freshness on freezing process and quality
○ OZEKI Akihiro (Tokyo Univ. of Marine Science and Technology), WATANABE Manabu, SUZUKI Toru

D342 Effect of Freezing Condition and Lipid Content on the Quality Parameters of Mackerel
○ UENO Shigeaki (Saitama Univ.), TAKAHASHI Rei, LIU Hsiuming (The Univ. of Tokyo), SHIMADA Reiko (Saitama Univ.), DO Gab-Soo (Nihon Univ.)

D343 Verification of the effectiveness of the quick killing method of fish using ice slurry
◎ NISHI Kensuke (Tokyo Univ. of Marine Science and Technology), WATANABE Manabu, SUZUKI Toru