

The International Symposium on New Refrigerants and Environmental Technology 2023
November 16- 17, 2023

Program

November 16, 2023	
10:00 ~ 10:05	Opening Address1 Yasumichi Tazunoki (Chairman of the board, JRAIA) Opening Address2 Masao Imanishi (Deputy Mayor of Kobe City)
10:05 ~ 10:35	Accelerating Efforts towards Carbon Neutrality 2050 in Japanese HVAC Industry ○ Tetsuji Okada (The Japan Refrigeration and Air Conditioning Industry Association (JRAIA))
10:40 ~ 11:35	Environment 1 Moderator: Hironari Fujiki, Mitsubishi Heavy Industries Thermal Systems, Ltd./ Toru Yasuda, The Japan Refrigeration and Air Conditioning Industry Association Japan's Policy Measures for Phasing-down HFCs ○ Ayumi Kodama (Ministry of Economy, Trade and Industry) EU Fgas regulation revision latest developments ○ Russell Patten (EPEE) Update on PFAS restriction Difference by region for more better understanding ○ Junichi Ishikawa (Conference of Fluoro-Chemical Product Japan)
11:40~11:56	Poster Session Presentation Moderator: Masayuki Nonaka, Hitachi-Johnson Controls Air Conditioning, Inc.
13:00 ~ 14:25	Refrigerant safety / Refrigerant life cycle management 1 Moderator: Hiroichi Yamaguchi, Toshiba Carrier Corporation/ Takahiro Hashimoto, Sharp Corporation The leakage detecting system of fluorinated gases by continuous monitoring - JRA GL-17 : Guideline for commercial refrigerating and air conditioning appliances - ○ Yukio Kitade, Yukio Kiguchi, Yoshihito taniguti, Ryutarō Ono, Gen Yasuda, Kazuhiro Tsuchihashi, Shinya Asano, Takachika Mori, Yoshikazu Yaji, Takaharu Kadoi (The Japan Refrigeration and Air Conditioning Industry Association (JRAIA)) Development of refrigerant leak detection technology for air conditioners using IoT technology ○ Haruyasu Ueda, Shinji Sasaki, Satoshi Okumura (Fujitsu General (JAPAN)) Current Status and Future Outlook of Refrigerant Leakage Detection Technologies ○ Harumi Kato, Masahiro Ito, Hiroaki Hokari, Kazuki Higashi, Mitsuhiro Ishigaki (Mitsubishi Electric Corporation) Development of a Remote Refrigerant Leakage Detection System Using Machine Learning Technique ○ Manabu Yoshimi, Shinichi Kasahara, Takeshi Hikawa, Shohei Yamada, Naoko Noda, Kohei Kuroda, Shoya Kamiaka (Daikin Industries, Ltd.) Refrigerant Leak Detection of Air Conditioner by Deep Learning ○ Shinya Komure, Yukio kiguchi, Morio Hirahara (Toshiba Carrier Corporation), Yasuyuki Isobe (TOSHIBA DIGITAL SOLUTIONS CORPORATION)
14:35 ~ 15:45	New refrigerants and characteristics 1 Moderator: Masami Taniguchi, Denso Corporation/ Shuntaro Ito, Fujitsu General Laboratories Limited. Measurement and calculation model for viscosity and thermal conductivity of next-generation refrigerants ○ Akio Miyara, Monjur Morshed, Atiqur R Tuhin, Shotaro Mizuno, Takumi Tamura (Saga University) The refrigerant characteristics calculation determined by quantum chemistry and molecular dynamics ○ Takahiro Aoki, Hironori Tsunoyama (Panasonic Holdings Corporation), Takahiko Hashimoto, Akira Hiwata (Panasonic Corporation) HFO Refrigerants for Stationary Heat Pump Applications ○ Ankit Sethi, Bruno Y. K. de Carvalho, Henna Tangri, Ryan Hulse (Honeywell) Next Generation Low-GWP Refrigerants "AMOLEA" Hiroaki Mitsuoka, Mai Hashimoto, Hiroki Hayamizu, ○ Masato Fukushima (AGC Inc.)
15:55 ~ 17:35	Technology for equipment using new refrigerants 1 Moderator: Shigeharu Taira, Daikin Industries, Ltd./ Yoshihiro Sumida, Mitsubishi Electric Corporation Evolutionary optimization of heat exchanger refrigerant circuitry ○ Niccolo Giannetti (Waseda university), Yuichi Sei, Koji Enoki (The University of Electro-Communications), Kiyoshi Saito (Waseda University) Energy efficient residential and commercial heat pumps for renovation buildings with low GWP HFO refrigerants ○ Hans-Dieter Küpper (Chemours Deutschland GmbH), Samer Saab (The Chemours Company FC, LCC), Pietro Sonza-Reorda (Chemours International Operations Sarl) Performance Evaluation of Low-GWP Alternatives in Refrigeration Applications ○ Kaimi Gao, Nilesh Purohit, Patrick Birbarah, Ankit Sethi, Ryan Hulse (Honeywell) Development of Air to Water heat Pump for Europe using refrigerant R290 ○ Shunji Moriwaki, Yohei Matsunami, Kakeru Tsuru, Yuuki Yamaoka, Ko Inagaki (Panasonic Corporation Heating & Ventilation AC Company) Deflagration analysis and safety measures for heat pump outdoor units using R290 refrigerant ○ Hidehiko Kataoka (Daikin Industries, LTD) Development of air to water heat pump using A3 refrigerant R290 ○ Keisuke Takayama, Tomohiro Hida, Shogo Tamaki, Kenta Murata (Mitsubishi Electric Corporation)

November 17, 2023

9:00 ~ 10:25 Energy saving technology / Energy management 1
Moderator: Masayuki Nonaka, Hitachi-Johnson Controls Air Conditioning, Inc./ Shuji Fukano, Mayekawa Mfg Co., Ltd.
Heat pump system with receiver cycle
○ Kawano Hiroaki (DENSO)
ZAplus Next Generation
Fan system with biomimetic principles
○ Uwe Martin (ZIEHL-ABEGG SE, Head of Product Management Axial Fan)
Multi air conditioner for buildings that achieves significant energy savings by linking ventilation
○ Takaya Nakanishi (DAIKIN INDUSTRIES, LTD)
Dynamic performance characterization of air conditioners with emulator-type load-based tests
○ Niccolo Giannetti, Yoichi Miyaoka, Kiyoshi Saito (Waseda university)
LCCP Evaluation for Air-to-Air Heat Pumps using Next -Generation Refrigerants
- Residential Air Conditioners -
○ Shigeharu Taira, Seishi Itaka, Tomoyuki Haikawa, Ryoichi Takafuji, Keisuke Mitoma (The Japan Refrigeration and Air Conditioning Industry Association (JRAIA))

10:35 ~ 12:00 Compressor / Lubricant 1
Moderator: Akira Hiwata, Panasonic Corporation/ Takeshi Okido, ENEOS Corporation
Characteristics of Refrigeration Oil for HFC and HFO
○ Tomohiro Takaki, Masaki Kawaguchi, Yuya Mizutani, Yuji Shitara (ENEOS Corporation)
Evaluation of Mixture Properties of Refrigeration Lubricants and Next-Generation Refrigerants
○ Kohei Yoshida, Tomoya Matsumoto, Hiroki Maezono (Idemitsu Kosan Co., Ltd.)
Study on Miscibility for Refrigerant and Behavior on Refrigeration Cycle of Refrigeration Oil
Rei Saito, Yoshinori Suzuki, ○ Ryoichi Nakano (Japan Sun Oil Company, Ltd.)
New Refrigerants, Why Not New Lubricants
○ Joe Karnaz (Shrieve Chemical Products, LLC)
Refrigeration Oil Material Evaluation in Low GWP Refrigerants
○ Yukiko Maejima, Hideki Matsuura, Kanetaka Miyazawa, Yumemi Iwaida, Haruka Terai (DAIKIN INDUSTRIES, LTD)

13:30 ~ 14:10 Environment 2
Moderator: Hironari Fujiki, Mitsubishi Heavy Industries Thermal Systems, Ltd./ Toru Yasuda, The Japan Refrigeration and Air Conditioning Industry Association
US Developments and Policies on Refrigerant Transition
○ Stephen R Yurek (Air-Conditioning, Heating, and Refrigeration Institute)
Trends and Prospect of Refrigerant substitution in China
○ Ruonan Wang (China Refrigeration and Air-conditioning Industry Association)

14:20 ~ 15:15 Refrigerant safety / Refrigerant life cycle management 2
Moderator: Hiroichi Yamaguchi, Toshiba Carrier Corporation/ Takahiro Hashimoto, Sharp Corporation
An Update on the US Industry Low GWP Refrigerants Research to Support HFC Phase-Down
○ Xudong Wang (Air-Conditioning, Heating, and Refrigeration Institute (AHRI))
Company management must realize the fact of HFCs' reduction and avoid this crisis
○ Masato M Sakui (Japan Refrigerants and Environment Conservation Organization)
Life-Cycle Assessment of Refrigerants for Air Conditioners Considering Reclamation and Destruction
Fumiaki Yakushiji, Satoru FUJIMOTO (DAIKIN INDUSTRIES, LTD.), ○ Norihiro Itsubo (Waseda University)

15:25 ~ 16:05 New refrigerants and characteristics 2
Moderator: Masami Taniguchi, Denso Corporation/ Shuntaro Ito, Fujitsu General Laboratories Limited.
Development of R-1132(E) mixed Refrigerants
○ Tomoyuki Goto (Daikin Industries, Ltd.)
Developments in low-GWP Refrigerants
New Refrigerants for Air-Conditioning, Refrigeration and Heat Pumps
Robert E Low, Tsuyoshi Yamamoto, Christopher J Seeton, ○ Kim Sarah (Koura)

16:05 ~ 16:10 Closing Speech

Development of New Refrigerant Gas Recover /Recycle /Recharge Machine "CS-1234WST" with Remote Control by a Tablet PC.

Kenji Yamasaki, Naoaki Watanabe, ○Issei Higami (Dengen Co., Ltd.)

Development Refrigeration and Air-conditioning Technologies for Practical Use of Next-Generation Low-GWP Refrigerant

○ Tomokazu Mori, Makoto Gocho, Hiroshi Suzawa, Akira Yamada, Yuka Yosomiya, Satoshi Fujigaki (New Energy and Industrial Technology Development Organization (NEDO))

Refrigerant charging device using existing device

Shigeru Suwa, Takashi Kitsuya (Pro-Step co.,Ltd.), ○ Tomofumi Ohashi, Ken Nagasawa (Nichiden Kogyo Co.,LTD.)

Development of Gas Sensor for Refrigerant Leak Detection

○ Masafumi Toyota (Figaro Engineering Inc.)

Education of refrigerant leak prevention technology improvement

○ Wadatumi Shimizu, Mamatomo sakaguchi, Hiroshi Ito (Japan Association of Refrigeration and Air-Conditioning Contractors)

Speed of sound and PVT property measurements for pure and mixture low-GWP refrigerants

○ Yohei Kayukawa, Yuya Kano, Kanako Nishihashi, Naoki Kuramoto (National Institute of Advanced Industrial Science and Technology (AIST))

Development of a low-vibration, high-efficiency refrigerant compressor using new mechanism

○ Kitsuya Takashi, Suwa Shigeru (Prostep co.ltd), Yoshizawa Takumi, Yoshizawa Yutaka (Zmechanism)

Evolution of car air conditioning service stations by adding HGS function

Kitsuya Takashi, ○ Uchida Minoru (Prostep co.ltd), Kobayashi Takehiro, Matsuzaki Ryo, Sunahara Hiromitsu (MK SEIKO CO., LTD.)

Boiling heat transfer characteristics of HFO/HFC mixture refrigerant in multiple rectangular channels

○ Natsumi Numata (Graduate school of Marine Science and Technology, Tokyo University of Marine Science and Technology), Daisuke Jige, Norihiro Inoue (Tokyo University of Marine Science and Technology)

The falling film chiller with natural refrigerant

Takeo Fujimoto, Hidehiro Kitayama, Masanori Kando, Yuki Ono, ○ Nobuo Osuga, Daiki Kayashima (MAYEKAWA MFG. CO., LTD.)

"High purity refrigerant reclaiming device for HFO and mixed HFC refrigerant in preparation for the Kigali amendment"

"High purity refrigerant reclaiming device that promotes reuse of HFC and HFO refrigerant."

○ Motoki Masuda (Asada Corporation)

Activities to carbon neutral 2050

Report of the Committee of the Japan Society of Refrigerating and Air Conditioning Engineers

○ Noboru Kagawa (Waseda Research Institute for Science and Engineering, Waseda University), Masanori Kando (MAYEKAWA MFG. CO., LTD.), Shigenaga Masaya (DAIKIN INDUSTRIES, Ltd.)

Introduction of a Recovery Method for A3 Refrigerant Systems

○ Hideki Takeyama (ICHINEN TASCOS CO.,LTD)

Activities of Consortium for the Research Strategy of Next-generation Heat Pump Technology

○ Kenji Matsuda, Kiyoshi Saito, Kanako Ohsaki, Sayoko Kochi, Yoichi Miyaoka, Kuniyuki Nishimura (Waseda University)

Company management must realize the fact of HFCs' reduction and avoid this crisis

○ Masato M Sakui (Japan Refrigerants and Environment Conservation Organization)

Challenge to Develop a Super Large Capacity Scroll Compressor with High Efficiency

○ Keiko Anami (Osaka Electro-Communication University)

Development of technology for rapid on-site detection of R32 refrigerant leaks

○ Tomoatsu Minamida, Tomoyuki Haikawa, Kazuyuki Satoh (DAIKIN INDUSTRIES, LTD.), Takeshi Abe, Tsuyoshi Hara (Tokyo Gas Engineering Solutions Corporation)