

The 40th Japan Symposium on Thermophysical Properties
- Program -

Day 1, October, 28, Monday

[A 室]

OS2-I Thermal Properties and Control on Space 1

9:00~10:20 OS2-I

Chairperson : Sumitaka TACHIKAWA (JAXA)

A111 Possible underestimation of atomic oxygen fluences on ISS-based material tests

○ Kumiko YOKOTA, Ryo SHIRAKAWA, Wataru IDE (Kobe Univ.), Minoru IWATA (Kyushu Inst. of Tech.), Yugo KIMOTO (JAXA), Masahito TAGAWA (Kobe Univ.)

A112 Spacecraft thermal control materials trend and its evaluation

○ Ryota MATSUDA, Yasuhiro FUKUTA, Yuzo YAJIMA, Hiroshi KINODA (Mitsubishi Electric)

A113 The emissivity measurement of radiator surface candidates for astronomical satellite by calorimetric method at cryogenic temperatures

○ Kosuke TANAKA, Makiko ANDO, Keisuke SHINOZAKI (JAXA), Ikuma NISHIKAWA (Univ. of Tsukuba)

A114 Thermal observation of asteroid RYUGU using a mid infrared imaging camera (TIR) onboard HAYABUSA2

○ Satoshi TANAKA, Tatsuaki OKADA (JAXA), Tetsuya FUKUHARA, Makoto TAGUCHI (Rikkyo Univ.), Takehiko ARAI (Ashikaga Univ.), Hiroki SENSU (Chiba Inst. of Tech.), Naoya SAKATANI, Yuri SHIMAKI (JAXA), Jun TAKITA (Kitami Hokuto High School), Toru KOYAMA (AIST), Tomohiko SEKIGUCHI (Hokkaido Univ. of Education), Hirohide DEMURA, Kentaro SUKO, Yoshiko OGAWA (Univ. of Aizu), Tsuneo MATSUNAGA (NIES), Takeshi IMAMURA (Univ. of Tokyo), Takehiko WADA, Sunao HASEGAWA (JAXA)

OS2-II Thermal Properties and Control on Space 2

10:40~12:00 OS2-II

Chairperson : Masahito TAGAWA (Kobe Univ.)

A121 Thermal properties of prototype solidified VO₂ by laser sintering

○ Tomihiro KINJO, Kenichiro SAWADA, Hiroyuki OGAWA (JAXA), Takafumi YAMAMOTO (Toyama Industrial Technology Center)

A122 IR EMITTER FOR SPACECRAFT

RADIATOR AT CRYOGENIC TEMPERATURE (2) -BROADBAND IR EMITTER USING VARIOUS METALLIC PERIODIC STRUCTURES-

© Masashi HIGASHIURA (Tokyo Univ. of Science), Sumitaka TACHIKAWA (JAXA), Atsushi SAKURAI (Niigata Univ.), Tomohiko SAITOH (Tokyo Univ. of Science)

A123 Study on wireless power transmissive MLI -The measurement of efficiency for wireless power transmission and thermal insulation performance-

© Kensei ISHII (Univ. of Tsukuba), Kosuke TANAKA, Shuhei SHIMADA, Takeshi MIYAKITA, Sayuri HONDA, Hiroyuki SUGITA (JAXA)

A124 Thermal Radiation Characteristics of Smart Radiation Device with Dielectric Thin Films

○ Hiroki MATSUDA, Tomohiko SAITOH (Tokyo Univ. of Science), Sumitaka TACHIKAWA (JAXA)

OS2-III Thermal Properties and Control on Space 3

13:40~15:00 OS2-III

Chairperson : Tsuyoshi TOTANI (Hokkaido Univ.)

A131 Highly functional thermal control material using

dielectric multi-layer films

○Kota TOMIOKA (Nagoya Univ.), Sumitaka TACHIKAWA (JAXA), Yuji NAGASAKA (Keio Univ.)

A132 Internal flow characteristics of multi-evaporator loop heat pipe -Visualization investigation of the gravitational head's effect-

○Xinyu CHANG (Tohoku Univ.), Noriyuki WATANABE (Nagoya Univ.), Hiroki NAGAI (Tohoku Univ.), Hiroyuki OGAWA (JAXA), Hosei NAGANO (Nagoya Univ.)

A133 Study on a Thermal Performance of Loop Heat Pipe under Microgravity Conditions

○Atsushi OKAMOTO, Takeshi MIYAKITA (JAXA), Hosei NAGANO (Nagoya Univ.)

A134 Thermal design of Cryogenic System for the Next-generation Infrared Space Telescope (SPICA)

○Masaru SAIJO, Hiroyuki OGAWA, Takao NAKAGAWA, Hideo MATSUHARA, Keisuke SHINOZAKI, Kenichiro SAWADA, Chihiro TOKOKU (JAXA), Haruka FUKUOKA (Univ. of Tokyo)

GS5,6,10-I Interface/Thin film, Atomic/Molecular simulation & Advanced materials 1

15:20~16:20 GS5,6,10-I

Chairperson : Yoshihiro TAGUCHI (Keio Univ.)

A141 Anharmonic lattice dynamics for silicon thin film with nanoscale thickness

◎ Michimasa MORITA (Univ. of Tokyo), Takuma SHIGA (Univ. of Tokyo, JST PRESTO)

A142 Tuning thermal conductance across metal/MoS₂ monolayer interface through N-methyl-2-pyrrolidone wet cleaning

○ Yen-Ju WU (NIMS), Yann-Wen LAN (NTNU), Shih-Chieh HSU (TKU), Yibin XU (NIMS)

A143 Synthesis of partially oxidized graphene by electrochemically exfoliation in hydrophobic ionic liquid and its application for thermal interface materials

○ Masahide SATO, Yukiko HORIKAWA,

Masumi KOMATSU, Takeshi FURUSAWA, Noboru SUZUKI (Utsunomiya Univ.)

OS1-I Thermophysical Properties of High-Temperature Melts and Material Processing 1
16:40~18:20 OS1-I

Chairperson : Chihiro KOYAMA (JAXA)

A151 Thermal conductivity measurement of B₂O₃ through the glass transition temperature

○Chebykin DMITRY, Gert BARTZSCH, Ivan SAENKO, Hans-Peter HELLER (TU Bergakademie Freiberg), Rie ENDO (Tokyo Tech), Olena VOLKOVA (TU Bergakademie Freiberg)

A152 DEVELOPMENT OF THERMAL CONDUCTIVITY MEASUREMENT TECHNIQUE AT HIGH PRESSURE AND HIGH TEMPERATURE

CORRESPONDING TO DEEP EARTH'S CONDITION (2) -Uncertainties of measured temperature and thermal conductivity-

◎ Akira HASEGAWA (AIST/ Tokyo Tech), Takashi YAGI (AIST), Kenji OHTA (Tokyo Tech), Kei HIROSE (Univ. of Tokyo)

A153 Thermal conductivity of iron-bearing alkaline-earth silicate slags

◎ Tomohiro MAYAMA, Tsuyoshi NISHI, Hiromichi OHTA, Takumi MANAKO, Yoshihumi YAMATO, Naoki UEDA (Ibaraki Univ.), Hiroyuki SHIBATA, Sohei SUKENAGA (Tohoku Univ.)

A154 Thermal conductivity for liquid Fe-Ni alloys and its applicability of Wiedemann-Franz law

○ Manabu WATANABE, Masayoshi ADACHI, Masahito UCHIKOSHI, Hiroyuki FUKUYAMA (Tohoku Univ.)

A155 Thermal conductivity of B₂O₃-R_xO-SiO₂ (R=Na, K, Mg, Ca) melts

◎ Takumi MANAKO, Yoshihumi YAMATO, Tomohiro MAYAMA, Hiromichi OHTA, Tsuyoshi NISHI, Naoki UEDA (Ibaraki Univ.), Sohei SUKENAGA, Hiroyuki SHIBATA (Tohoku Univ.)

[B 室]

OS4-I Development and Evaluation of Polymer based Thermal Management Materials and Components 1

9:00~10:20 OS4-I

Chairperson : Yasuyuki AGARI (ORIST)

B111 THERMAL CONDUCTIVITY

MEASUREMENT BY PLATE
COMPARATIVE METHOD AND
INVESTIGATION OF COOLING SIDE
TEMPERATURE ON MEASURED
RESULTS

○Masaaki OKUYAMA (Yamagata Univ.)

B112 Thermal conductivity of thermal interface materials under obtained pressure by laser flash method

○ Hiroki KAMIJO (Railway Technical Research Institute)

B113 Modeling of representative volume element for particle filled composites and finite element analysis of their thermal conductive properties

○ Kazuaki SANADA, Yasuka NASSHO, Kazuya NAGATA (Toyama Pref. Univ.), Osamu INUI, Aki KOUMA, Shohei MIZUNO (SEKISUI)

B114 Relationship between microstructure and thermal conductivity of highly filled alumina/epoxy composites

○ Kyoko OKUYAMA, Yasuyoshi SEKINE (NC & E), Kazuaki SANADA, Koki HASE, Kazuya NAGATA (Toyama Pref. Univ.)

OS4-II Development and Evaluation of Polymer based Thermal Management Materials and Components 2

10:40~12:00 OS4-II

Chairperson : Masaaki OKUYAMA (Yamagata Univ.)

B121 Experiment and finite element analysis of thermal conductivity of alumina/silicone polymer composites

○ Masakazu HATTORI (Fuji Polymer Industries Co., Ltd.), Kazuaki SANADA (Toyama Pref. Univ.), Yasushi KAJITA (Nagoya Municipal Industrial Research Institute)

B122 Effect of filler orientation and thermal conductivity of high thermal conductive epoxy resin composites

○Akinori OKADA, Joji KADOTA, Hiroshi HIRANO, Yasuyuki AGARI (ORIST)

B123 Preparation and properties of thermally conductive epoxy resin hybrid with composite filler of AlN and ZnO to decrease thermal contact resistance

○Asako MORITA (NAIST), Akinori OKADA, Joji KADOTA, Hiroshi HIRANO (ORIST), Yasuyuki AGARI (ORIST, NAIST)

B124 Discussion of factors on thermal interface resistance of thermally conductive elastomer (TIM)

○ Yasuyuki AGARI, Akinori OKADA (ORIST), Asako MORITA (NAIST), Hiroshi HIRANO, Joji KADOTA (ORIST)

OS4-III Development and Evaluation of Polymer based Thermal Management Materials and Components 3

13:40-14:40 OS4-III

Chairperson : Kazuaki SANADA (Toyama Pref. Univ.)

B131 Ultra-fast thermal analysis and its application to the machine-learning-assisted molecular design of high thermal conductivity polymers

○Junko MORIKAWA (Tokyo Tech), Stephen WU (ISM), Yuka TAMANO, Yukiko KONDO, Masa-ski KAMIMOTO, Isao KUWAJIMA, Yibin XU (NIMS), Christoph SCHICK (Univ. of Rostock), Junichiro SHIOMI (Univ. of Tokyo), Ryo YOSHIDA (ISM)

B132 Construction of Hierarchical Assemblies Composed of Filamentous Virus: Their Assembled Structures and Thermal Diffusivity

○Sawada TOSHIKI (Tokyo Tech, PRESTO-JST), Yuta MURATA, Hironori MARUBAYASHI, Shuichi NOJIMA, Junko MORIKAWA, Takeshi SERIZAWA (Tokyo Tech)

B133 Moisture transfer between air flows by a sorbent coated membrane unit

Akihiko HORIBE, Yutaka YAMADA, ○

Kenta NIINAKA (Okayama Univ.), Hideyuki TAKASAKI, Satoshi SHIMIZU, Tooru KAWAMATA, Tomohiro MARUYAMA (Calsonic Kansei Co.)

OS6-I Thermophysical Properties of Food and Bioresources 1

15:00~16:20 OS6-I

Chairperson : Seiji YAMADA (SANTA Baking Lab.), Kei TAO (Nihon Univ.)

B141 Effects of steam concentration and air temperature in oven on cooking quality of hamburger steak

○ Kuniko SUGIYAMA (Yokohama Nat. Univ.), Midori KUROKAWA (Tokyo Gas Co.)

B142 Development of measuring apparatus for steam concentration in oven using fiber-optic sensor based on laser absorption spectroscopy

◎ Yusuke TANADA, Koichiro TASHIRO, Hiroyuki IYOTA (Osaka City Univ.), Kosuke NISHIDA, Ryoga NAKAUCHI (Kyo Inst. of Tech.), Toyofumi UMEKAWA (Plumtec), Masahiro KAWASAKI (RIHN)

B143 Effect of Pressure Environment on Baking Condition of Bread -Part 2-

○Seiji YAMADA (SANTA Baking Lab.)

B144 Application of Superheated Steam under Reduced Pressure to Food Processing

○Yoshiki MURAMATSU (Tokyo Univ. of Agri.), Haruto YAMAMOTO (OKAWARA MFG.), Masanori HASHIGUCHI (KESCO), Eiichiro SAKAGUCHI, Shotaro KAWAKAMI (Tokyo Univ. of Agri.)

OS5 Measurement of Thermophysical Properties and Evaluation of Thermal Insulations

16:40~17:40 OS5

Chairperson : Megumi AKOSHIMA (AIST)

B151 Thermal Property Measurement for Thermal Insulation Composite Material with Fumed Alumina Nanoparticles / Ceramic Fiber

○Taichi TASAKA (Japan Testing Center for Construction Materials), Takahiro OHMURA (Nat. Inst. of Tech., Wakayama College), Shinji

HAGIHARA, Kensaku MABUCHI (Japan Testing Center for Construction Materials), Akira KONDO, Makio NAITO (Osaka Univ.)

B152 Study on simultaneous measurement method of thermal conductivities of different specimens

◎Mizuho MINAMIDE, Kento ISHII, Taiga TSUJI, Ryo HAYASAKA, Daiki TANABE, Takahiro OHMURA (Nat. Inst. of Tech., Wakayama College)

B153 Study on measurement method of thermal conductivity of small specimen in ununiformed temperature field

◎ Kento ISHII, Taiga TSUJI, Mizuho MINAMIDE, Ryo HAYASAKA, Daiki TANABE, Takahiro OHMURA (Nat. Inst. of Tech., Wakayama College)

[C室]

GS9-I New Measurement Techniques 1

9:00~10:20 GS9-I

Chairperson : Atsuki KOMIYA (Tohoku Univ.)

C111 Method to measure electric conductivity and thermal diffusivity simultaneously by use of an electromagnetic induction

○Disuke MURYOI, Akihiro YAMASHITA, Hitoshi TORISU, Koshi AKIYAMA, Eiji MATSUSHIMA (Osaka Inst. of Tech.)

C112 Study on Diffusion Coefficient Sensing of Thermosensitive Liposomes Measured by Micro Optical Diffusion Sensor

◎Miki OURA, Risa SHISHIDO, Yoshihiro TAGUCHI, Yuji NAGASAKA (Keio Univ.)

C113 Micro thermocouple on nano-membrane and focused electron beam heating for nanoscale temperature wave analysis

○ Moena OKU, Meguya RYU, Junko MORIKAWA (Tokyo Tech)

C114 Thermal diffusivity of Super-elastic Organic Crystals by Micro-scale Photothermal effect induced Temperature Wave Analysis

○ Meguya RYU (Tokyo Tech), Satoshi TAKAMIZAWA (Yokohama City Univ.), Junko MORIKAWA (Tokyo Tech)

GS9-II New Measurement Techniques 2

10:40~12:20 GS9-II

Chairperson : Takashi YAGI (AIST)

- C121 Heat loss analysis of total emissivity measurement using Guarded Hot Plate Method
© Shuta KOYANAGI, Atsuki KOMIYA (Tohoku Univ.), Shigenao MARUYAMA (Nat. Inst. of Tech., Hachinohe college)
- C122 Development of High Efficient Fusion-Spliced Near-field Optical Fiber in IR Region
Hiroaki MIURA, ©Yumeka YOSHIMOTO, Yoshihiro TAGUCHI, Yuji NAGASAKA (Keio Univ.)
- C123 Development of Fluorescence Near-field Optics Thermal Nanoscopy Using Nitrogen-Vacancy Center
©Kanji TANAKA, Yoshihiro TAGUCHI (Keio Univ.)
- C124 Experimental determination of the anisotropic phonon mean free path in a liquid crystal system by using the inelastic scattering techniques and the temperature wave analysis
©Meguya RYU, Junko MORIKAWA (Tokyo Tech)
- C125 Anisotropic phonon mean free path of phenyl pyrimidine liquid crystal measured by inelastic X-ray scattering and temperature wave analysis
© Shuhei KUROSE, Meguya RYU (Tokyo Tech), Hiroshi UCHIYAMA (JASRI), Koji YOSHIDA (Fukuoka Univ.), Junko MORIKAWA (Tokyo Tech)

GS3 Radiation Properties

13:40~15:00 GS3

Chairperson : Shinichi KINOSHITA (OSAKA Pref. Univ.)

- C131 A coupling and an enhancement of resonance of near field radiation around vacuum nano-gap region
©Kazuma ISOBE, Katsunori HANAMURA (Tokyo Tech)
- C132 Surface processing method for controlling radiative characteristics
©Kae NAKAMURA (Nihon Univ.), Takahiro KONO, Jun YAMADA (Shibaura Inst. Tech.)
- C133 Effect of array degree on radiative property of

three particle cluster

○Hiroki GONOME (Yamagata Univ.)

- C134 Measurement of Equivalent Radiative Thermal Conductivity by High precision GHP Apparatus for Porous Insulation Materials
○ Fukukai KAKU (Nat. Inst. of Tech., Hachinohe College), Shuta KOYANAGI (Tohoku Univ.), Takuma KOGAWA, Hiroshi OSAWA (Nat. Inst. of Tech., Hachinohe College), Atsuki KOMIYA (Tohoku Univ.), Shigenao MARUYAMA (Nat. Inst. of Tech., Hachinohe College)

GS7 Composite Materials/Materials for Building Construction

15:20~16:20 GS7

Chairperson : Yuichiro YAMASHITA(AIST)

- C141 Influence of infrared radiation of windowpanes on indoor thermal environment -Emissivity variation due to condensation during heating period-
○ Kenta WATANABE (Mie Univ., AIST), Hiroshi KAKIUCHIDA (AIST)
- C142 ESTIMATE THE HYGROTHERMAL PHYSICAL PROPERTIES OF TSUCHIKABE (INCLUDING WATTLES AND NOGS) -INFLUENCE THE SHAPE OF WATTLES & NOGS AND THE KIND OF TUCHI ON THE MEASURE-
○Manami SATO (Osaka Inst. of Tech.)
- C143 Method to measure thermal diffusivity for carbon-carbon composites by use of an infrared heating
○ Eiji MATSUSHIMA, Yuto OOMURA, Tomoki OGASAHARA (Osaka Inst. of Tech.)

GS1-I Thermodynamics Characteristics and Transport Properties for Fluids 1

16:40~18:20 GS1-I

Chairperson : Tomoya TSUJI (Univ. of Teknologi Malaysia)

- C151 Triple point measurements for low-GWP working fluids
○ Yushin FUDO, Takumu NAKAMURA, Shun IWASAKI, Chieko KONDOU (Nagasaki

- Univ.), Yukihiro HIGASHI (Kyushu Univ.)
- C152 PVT measurement at critical point for HCFO-1224zd(Z)
○Katsuyuki TANAKA (Nihon Univ.)
- C153 Vapor Pressure Measurements of the Next Generation Refrigerant : R1233zd(E)
○ Naoya SAKODA, Yukihiro HIGASHI (Kyushu Univ.)
- C154 Determination of liquid-liquid equilibria for water + alkane + non-ionic surfactant system
○ Hiroyuki MATSUDA, Rika ISHIKAWA, Akiho SATO, Kiyofumi KURIHARA, Katsumi TOCHIGI (Nihon Univ.)
- C155 Study of Thermodynamic Properties for Aqueous Solution of Ammonia -Sixth Report: Impact on the International Guideline Formula and the Experimental Data According To the Revision of International System of Units-
○Kosei OGUCHI (Kanagawa Inst. of Tech.)

Day2, October, 29, Tuesday

[A 室]

OS1-II Thermophysical Properties of High-Temperature Melts and Material Processing 2

9:00~10:20 OS1-II

Chairperson : Masayoshi ADACHI (Tohoku Univ.)

- A211 Spectral emissivity measurements and heat capacity calculation of molten Cr-Si with an electrostatic levitator
○ Yui NAKATA, Yuki WATANABE (A.E.S. Co. Ltd.), Chihiro KOYAMA, Takehiko ISHIKAWA (JAXA), Sakiko KAWANISHI, Hiroyuki SHIBATA (Tohoku Univ.), Takeshi YOSHIKAWA (Univ. of Tokyo)
- A212 DEVELOPMENT OF THERMAL DIFFUSIVITY MEASUREMENT METHOD FOR SURFACE COATING MATERIAL USING LASER SPOT PERIODIC HEATING RADIATION THERMOMETRY METHOD
◎ Takeru HAYASHI, Tsuyoshi NISHI, Hiromichi OHTA (Ibaraki Univ.), Kimihito

HATORI, Takaaki AWANO (Bethel Co.), Takahiro IGARASHI (JAEA), Takafumi KOSHINA (HSK Co.)

- A213 Evaluation of radiative heat loss effect in the laser flash technique using logarithmic method
◎ Naoyoshi AZUMA (NTT Electronics, Ibaraki Univ.), Tsuyoshi NISHI, Hiromichi OHTA (Ibaraki Univ.)
- A214 Thermal diffusivity measurement of FeO scale formed on iron plate by electrical-optical hybrid pulse heating method and its temperature dependence
○ Rie ENDO, Yuanru YANG (Tokyo Tech), Hiromichi WATANABE (AIST), Miyuki HAYASHI, Masahiro SUSA (Tokyo Tech)

OS1-III Thermophysical Properties of High-Temperature Melts and Material Processing 3
10:40~12:20 OS1-III

Chairperson : Manabu WATANABE (Tohoku Univ.)

- A221 Viscosity measurement of molten SS-B₄C alloys
◎ Hiroki KOKUBO, Tsuyoshi NISHI, Hiromichi OHTA, Yuriko TAKATSUKA (Ibaraki Univ.), Hidemasa YAMANO (JAEA)
- A222 Thermophysical property measurements of high temperature oxide melts using an electrostatic levitation furnace in the ISS
○ Takehiko ISHIKAWA, Yasuhiro NAKAMURA, Hideki SARUWATARI, Chiriro KOYAMA, Masato OSHIO, Hirohisa ODA (JAXA)
- A223 Fragility and viscosity measurement of Y₃Al₅O₁₂ melt using electrostatic levitation
○ Chihiro KOYAMA (JAXA), Yuki WATANABE, Yui NAKATA (AES), Takehiko ISHIKAWA (JAXA)
- A224 Wettability of Y₂O₃-SiO₂ Composites with Different SiO₂ Activities against Molten Iron-Based Alloys
◎ Ziyao ZHANG, Kunihiko NAKASHIMA, Noritaka SAITO (Kyushu Univ.)
- A225 Identification of solid phase in slag suspension by alternating-current-impedance method
◎ Yumi TAKAO, Kunihiko NAKASHIMA,

Noritaka SAITO (Kyushu Univ.)

**GS5,6,10-II Interface/Thin film,
Atomic/Molecular simulation & Advanced
materials 2**

13:20~14:20 GS5,6,10-II

**Chairperson : Masahide SATO (Utsunomiya
Univ.)**

A231 Effect of stepwise administration on thin film formation by magnetic solution deposition technique

○ Hiroto KAWAJIRI, Ryo HAYASAKA, Takahiro OOMURA (Nat. Inst. of Tech., Wakayama College)

A232 Possibility of ultra-high density thin film formation by magnetic solution deposition technique

○ Ryo HAYASAKA (Nat. Inst. of Tech., Wakayama College), Yuto KIMURA (Nat. Inst. of Tech., Kagawa College), Seiji FUJIWARA (Nat. Inst. of Tech., Akashi College), Takahiro OOMURA (Nat. Inst. of Tech., Wakayama College)

A233 Development of measuring method of thermal conductivity of liquid thin film with anisotropic thermal conductivity

○ Seiichi TANAKA (Nat. Inst. of Tech., Akashi College), Yoshikazu SAI (Kobe Univ.), Seiji FUJIWARA (Nat. Inst. of Tech., Akashi College)

[B 室]

OS7 Thermophysical Property Databases and Related Technology for Materials Informatics

9:00~10:00 OS7

Chairperson : Makoto KASHIWAGI (Aoyama Gakuin Univ.)

B211 Machine learning for the development of halide perovskite thin films

○ Koji MIYAZAKI, Shotaro MIYAMOTO, Shirikant SAINI, Akira YONAMINE (Kyushu Inst. of Tech.), Ajay K BARANWAL (Univ. of Electro-Communication), Satoshi IIKUBO (Kyushu Inst. of Tech.)

B212 Analysis of correlation between compound

structure and thermodynamic properties of organic materials stored in a database

Tetsuya BABA, Yukiko SUDA (TherMAT), Yuichiro YAMASHITA, ○ Toyokazu ISHIDA (AIST)

B213 Machine learning assisted data analysis on thermophysical property measurement -Pulsed light heating thermorefectance method-

○ Yuichiro YAMASHITA, Takashi YAGI (AIST)

OS3-I Nanoscale Thermophysical Properties 1

10:40~12:00 OS3-I

Chairperson : Junichiro SHIOMI (Univ. of Tokyo)

B221 Development of Phonon Transport Sensing Technique using Polarized Near-field Light and Near-field Photothermal effect

◎ Aoi MIYAMOTO, Shunta OKITSU, Yoshihiro TAGUCHI, Yuji NAGASAKA (Keio Univ.)

B222 Development of pulsed light heating thermorefectance apparatus combined with high speed modulation heating

○ Takashi YAGI, Yuichiro YAMASHITA (AIST)

B223 In-situ thermorefectance measurements on Y-Mg alloy switchable mirror thin films

◎ Hina SAITO (Aoyama Gakuin Univ.), Yuichiro YAMASHITA, Takashi YAGI (AIST, Aoyama Gakuin Univ.), Makoto KASHIWAGI (Aoyama Gakuin Univ.), Junjun JIA (Waseda Univ.), Naoyuki TAKETOSHI (AIST, Aoyama Gakuin Univ.), Yuzo SHIGESATO (Aoyama Gakuin Univ.)

B224 Measurement of the thermoelectric and thermospin conversion effects in magnetic materials using the thermorefectance

○ Takumi YAMAZAKI (Nagoya Univ.), Ryo IGUCHI (NIMS), Hosei NAGANO (Nagoya Univ.), Ken-ichi UCHIDA (NIMS)

GS12 Thermophysical Properties and Related Technologies for Energy Utilization

13:20~14:20 GS12

Chairperson : Ryo AKASAKA (Kyushu Sangyo Univ.)

- B231 Experimental study on sensing mass transport phenomena in polymer electrolyte membranes using infrared Soret forced Rayleigh scattering method -Measurement of mass diffusion coefficient of aqueous ethanol solutions in nafion 117-
© Taichi MURAI, Yoshihiro TAGUCHI, Yuji NAGASAKA (Keio Univ.)
- B232 Measurement of Extremely Low Mercury Solubility in High Pressure Gaseous Methane and Prediction by use of Equation of State
○ Junya YAMADA, Takehiro SHIBUYA (INPEX), Tomoya TSUJI (Univ. of Teknologi Malaysia), Atsushi KOBAYASHI (INPEX)
- B233 Fluid latent heat storage material using binary mixture
○ Hidetoshi OHKUBO, Haruka AGUI (Tamagawa Univ.), Naoe SASAKI, Saburo TANAKA (Nihon Univ.)

[C 室]

GS1-II Thermodynamics Characteristics and Transport Properties for Fluids 2

9:00~10:40 GS1-II

Chairperson : Keishi KARIYA (Saga Univ.)

- C211 Viscosity evaluation of CNT dispersed latent heat storage material
Shin-ichi MORITA, ○ Katsuma HIRANO, Yasutaka HAYAMIZU, Takeshi GONDA (Nat. Inst. of Tech. Yonago College), Takano YAMADA (Kitami Inst. of Tech.), Akihiko HORIBE (Okayama Univ.)
- C212 Measurement of viscosity of CO₂ expanded liquids for CO₂ spray system
○ Chisato YONEYAMA (Tohoku Univ.), Yoshiyuki SATO (Tohoku Inst. of Tech.), Hiroshi INOMATA (Tohoku Univ.)
- C213 Measurement of solid-liquid equilibria for mixtures containing diphenyl carbonate using synthetic method
○ Yuki OHASHI, Syunpei UDAGAWA, Tatsuki OHKUBO, Kiyofumi KURIHARA, Hiroyuki MATSUDA, Katsumi TOCHIGI

(Nihon Univ.)

- C214 Measurement of Thermal diffusivity and Thermal Effusivity of Ionic Liquid by Photoacoustic Method
© Kazuyoshi YANAGISAWA, Atsumasa YOSHIDA, Shinichi KINOSHITA (Osaka Pref. Univ.)
- C215 THERMAL CONDUCTIVITY MEASUREMENT OF FLUID BY NEEDLE PROBE METHOD (2)
○ Ryo ENDOH (Toray Research Center Inc.)

GS8 Agricultural and Marine

Products/Foods/Biological Resources/Biomass

11:00~12:00 GS8

Chairperson : Hiroki GONOME (Yamagata Univ.)

- C221 Development of a noninvasive instrument for measurement of the optical properties of human skin in ultraviolet wavelength range
© Kohei SUZUKI, Takahiro KONO, Uma M RAJAGOPALAN, Jun YAMADA (Shibaura Inst. Tech.)
- C222 EXPERIMENTAL STUDY ON MUTUAL DIFFUSION COEFFICIENT OF HIGHLY-CONCENTRATED AQUEOUS TREHALOSE SOLUTIONS USING SORLET FORCED RAYLEIGH SCATTERING METHOD -MEASUREMENT AT 25.0°C INCLUDING SUPERCOOLING STATES-
© Masaki FUJIKAWA, Yoshihiro TAGUCHI, Yuji NAGASAKA (Keio Univ.)
- C223 MEASUREMENT OF WHOLE-BLOOD VISCOSITY USING PULSED LASER VISCOMETER AND CAPILLARY VISCOMETERS -COMPARATIVE MEASUREMENT USING IDENTICAL BLOOD SAMPLE-
© Kazunori SHIBATA, Takehiro KOBAYASHI, Yoshihiro TAGUCHI, Yuji NAGASAKA (Keio Univ.)

OS6-II Thermophysical Properties of Food and Bioresources 2

13:20~14:20 OS6-II

Chairperson : Kuniko SUGIYAMA (Yokohama Nat. Univ.),

C231 Inverse Method using Heat Transfer Simulation to Estimate Thermal Diffusivity of Agricultural Products -Part 3-

○ Yoshiki MURAMATSU (Tokyo Univ. of Agri.), Masanori HASHIGUCHI (KESCO), Eiichiro SAKAGUCHI, Shotaro KAWAKAMI (Tokyo Univ. of Agri.)

C232 Effect of starch degradation on the water holding capacity of rice starch prepared by Freeze-

drying

Yoshiko IJIRI, ○ Rika KOBAYASHI, Kei TAO, Naoki NARISAWA, Fumio TAKENAGA (Nihon Univ.)

C233 Degradation of Protein by Hot Compressed Water

○ Tomoyuki FUJII, Takuya UCHIYAMA, Maho NUNOKAWA (Tohoku Univ.), Daitaro ISHIKAWA (Fukushima Univ.)

Plenary Lecture [A 室 : International Conference Hall]

14:40~15:40

Prof. Ryo KAWANABE

Institute for East China Sea Research, Organization for Marine Science and Technology,
Nagasaki University

Title : Biologging techniques for understanding free-ranging fish behavior :
Gliding Japanese flounder and deep-diving whale shark

The General Meeting [A 室 : International Conference Hall]

15:50~17:20

Banquet [GLOVER GARDEN] (If it rains, ANA HOTEL NAGASAKI GLOVERHILL)

18:40~20:40

Day3, October, 30th, Wednesday

[A 室]

GS1-III Thermodynamics Characteristics and Transport Properties for Fluids 3

9:00~10:20 GS1-III

Chairperson : Naoya SAKODA (Kyushu Univ.)

A311 Measurement of sound speed in hydrogen gas at 10°C to 40°C

◎ Taishi FUKUSHIMA, Atsushi EGAWA, Tomohiko YAMAGUCHI, Satoru MOMOKI (Nagasaki Univ.)

A312 Speed of sound measurement of low GWP refrigerant R1336mzz(Z) in liquid phase

○ Takashi NISHIYAMA, Shuto SUENAGA, Lei GAO, Tomohiro HONDA (Fukuoka Univ.), Ryo AKASAKA (Kyushu Sangyo Univ.)

A313 Measurement of viscosity of low GWP refrigerant R1224yd(Z)

◎ Yoshiya HORI, Dipayan MONDAL, Keishi KARIYA, Akio MIYARA (Saga Univ.)

A314 Density and viscosity measurements for diol-water mixtures under pressure at high temperatures and their correlation with the Cubic Plus Association EoS and the Eyring theory

◎ Yushi KOMATSU (Tohoku Univ.), Takumi ONO (AIST), Yoshiyuki SATO (Tohoku Inst. of Tech.), Hiroshi INOMATA (Tohoku Univ.)

OS8 Heat Flux Measurement Techniques and Applications

10:40~12:20 OS8

Chairperson : Taichi TASAKA (Japan Testing Center for Construction Materials)

A321 Study on influences upon sensitivity coefficients of heat flux sensors (2)

○ Megumi AKOSHIMA (AIST)

A322 Control of Thermal conductivity using Electrohydrodynamic

○ Yukihiko GOTO, Toshiaki YAZAKI (EKO Instruments Co. Ltd.)

A323 Development of Peltier evaluation instrument

○ Satoaki IKEUCHI, Kenji SHIMADA (ADVANCE RIKO Inc.)

A324 Calibration method of heat flux sensor for internal combustion engines using hot pulsating jet

○ Makoto KAMATA, Yoshiaki TOMOTO, Osamu NAKABEPPU (Meiji Univ.)

A325 Thermal Effusivity Testing with the Hot Disk Thermal Constants Analyser

○ Mattias GUSTAVSSON (Hot Disk AB)

[B 室]

OS3-II Nanoscale Thermophysical Properties 2

9:20~10:40 OS3-II

Chairperson : Masamichi KOHNO (Kyushu Univ.)

B311 Thermal conductivity of thin films of $Ti_{1-x}Sn_xO_2$ solid solution -Influence of substitutional cation site on phonon scattering-

◎ Hiroki KOIZUMI (Aoyama Gakuin Univ.), Takashi YAGI, Yuichiro YAMASHITA (AIST), Makoto KASHIWAGI (Aoyama Gakuin Univ.), Junjun JIA (Waseda Univ.), Yuki OGUCHI (Aoyama Gakuin Univ.), Naoyuki TAKETOSHI (AIST), Yuzo SHIGESATO (Aoyama Gakuin Univ.)

B312 Size effect on thermal conductivity along with stacking direction for α - MoO_3 thin films

◎ Yuzuki AOKI (Aoyama Gakuin Univ.), Yuichiro YAMASHITA, Takashi YAGI (AIST), Junjun JIA (Waseda Univ.), Makoto KASHIWAGI, Yuki OGUCHI (Aoyama Gakuin Univ.), Naoyuki TAKETOSHI (AIST), Yuzo SHIGESATO (Aoyama Gakuin Univ.)

B313 Thermal conductivity of a lead free halide perovskite thin film

○ Koji MIYAZAKI, Shirikant SAINI, Ryo YONAMINE, Tomohide YABUKI (Kyushu Inst. of Tech.), Ajay K BARANWAL, Shuzi HAYASE (Univ. of Electro-Communication)

B314 Water Dynamics Under Thermal Gradient and Electric Field

○ Yusuke KATO, Eiji YAMAMOTO, Yohei SATO (Keio Univ.)

OS3-III Nanoscale Thermophysical Properties 3

11:00~12:20 OS3-III

Chairperson : Koji MIYAZAKI (Kyushu Inst. of

Tech.)

- B321 Redox control and thermal conductivity measurement on tungsten oxide films
◎Koichi SAKATA, Kai OTANI (Aoyama Gakuin Univ.), Takashi YAGI, Yuichiro YAMASHITA (Aoyama Gakuin Univ., AIST), Makoto KASHIWAGI (Aoyama Gakuin Univ.), Junjun JIA (Waseda Univ.), Naoyuki TAKETOSHI (Aoyama Gakuin Univ., AIST), Yuzo SHIGESATO (Aoyama Gakuin Univ.)
- B322 Thermal Conductivity of the Amorphous Al₂O₃-based Oxide Films doped by Ga or In
◎ Chinami ABE (Aoyama Gakuin Univ.), Yuichiro YAMASHITA (AIST, Aoyama Gakuin Univ.), Yukimi TANAKA (AIST), Toshihiro OKAJIMA (SAGA-LS), Takashi YAGI (AIST, Aoyama Gakuin Univ.), Makoto KASHIWAGI (Aoyama Gakuin Univ.), Junjun JIA (Waseda Univ.), Koichiro HATTORI (AIST), Naoyuki TAKETOSHI (AIST, Aoyama Gakuin Univ.), Yuzo SHIGESATO (Aoyama Gakuin Univ.)
- B323 Development of interface thermal resistance measurement based on micro scale infrared lock-in analysis
○Taichi IGAMI, Takuya ISHIZAKI, Ai Ueno, Housei NAGANO (Nagoya Univ.)
- B324 Thermal diffusivity measurement of MoS₂ thin film by laser flash Raman spectroscopy
○Naoya AKAYAMA, Qin-Yi LI, Hiroki AGO, Koji TAKAHASHI, Masamichi KOHNO (Kyushu Univ.)

[C 室]

GS2-I Thermodynamics Characteristics and Transport Properties for Solids 1

9:20~10:40 GS2-I

Chairperson : Yutaka YAMADA, (Okayama Univ.)

- C311 Study on measurement of thermophysical properties using photoacoustic method considering radiation properties of thermal sprayed ceramic coating
○Atsumasa YOSHIDA, Takuya AKIYAMA, Kakeru KAGATA, Shinichi KINOSHITA

(Osaka Pref. Univ.), Megumi AKOSHIMA, Haruka ABE (AIST)

- C312 Thermal Expansion Property of Thermal Barrier Coating –The Effect of Heat Treatment- (2)
○ Naofumi YAMADA (AIST), Satoru TAKAHASHI (Tokyo Metro. Univ.)
- C313 Heat transfer characterization of solid-solid thermal storage material VO₂ at phase transition temperature
◎ Masaya IWAFUCHI, Takuto SASAKI, Masaaki BABA, Noboru YAMADA, Masatoshi TAKEDA (Nagaoka Univ. of Tech.)
- C314 Appropriate metallic coating for thermal diffusivity measurement of nonopaque materials with laser flash method and its effect on thermal diffusivity
○Mu LI, Megumi AKOSHIMA (AIST)

GS2-II Thermodynamics Characteristics and Transport Properties for Solids 2

11:00~12:20 GS2-II

Chairperson : Naofumi YAMADA (AIST)

- C321 Measurement of thermal conductivity of semicathrate hydrate -Crystallization of TBAF hydrate and measurement by transient hot wire method-
◎Takayuki IWAI, Ryo OHMURA, Yoshihiro TAGUCHI, Yuji NAGASAKA (Keio Univ.)
- C322 EXAMINATION OF THERMAL DIFFUSIVITY MEASUREMENT OF SAMPLE IN CONTACT WITH SEMITRANSSPARENT MATERIAL BY FLASH METHOD
○Kazuya HOSONO (JUTEM)
- C323 Thermophysical properties evaluation of microencapsulated tetracosane with inorganic shell
○ Yutaka YAMADA, Akihiko HORIBE (Okayama Univ.)
- C324 Ice calorimeter development based on Bunsen calorimetry
○ Ngo Nhu HOANG, Misato SUKA, Tomohito MORIKAWA, Hiromichi OHTA, Tsuyoshi NISHI (Ibaraki Univ.)

