

JSMF Annual Meeting 2004 Program

Okayama, August 5-7, 2004

* : Speaker

Thursday, August 5, 2004

Room A

Organized Session OS-5 [Heat Transfer Problems of Gas-Solid Two-Phase Flow
with Phase Change]

Organizer: Mamoru Ozawa (Kansai Univ.), Hisashi Umekawa (Kansai Univ.)

9 : 00~10 : 00 OS-5 I

Chair: Mamoru Ozawa (Kansai Univ.)

- A101 Attempt for Visualization of Two-Phase Flow of Forced-Convection Boiling in Helical Coil
Kentaro Komai (Univ. of Fukui), *Niro Nagai, Masanori Takeuchi, Shin-ichi Toda (JNC),
Shinji Yoshikawa, Yuichi Murai (Hokkaido Univ.), Fujio Yamamoto (Univ. of Fukui)
- A102 Study on Boiling Heat Transfer of Subcooled Flow under Oscillatory Flow Condition (Effect of
Amplitude and Frequency on ONB, NVG and CHF)
*Hiroyasu Ohtake (Kogakuin Univ.), Satoshi Yamazaki (LOTTE),
Yasuo Koizumi (Kogakuin Univ.)
- A103 Cancel
- A104 Decompression Characteristics of Oil-Stream Flows
*Osamu Yokota (Hitachi), Koji Nishida, Hirokazu Takahashi, Nobuyuki Hokari, Akinori Hayashi,
Shinichi Inage, Masahiko Yamagishi

10 : 30~12 : 10 OS-5 II

Chair: Hirokazu Fujino (Daikin Air-Conditioning R&D Lab.)

- A105 Numerical Analysis of Cavitation Bubbles behind a Circular Cylinder
*Akihiko Minato (Hitachi), Keiichi Sato (Kanazawa Inst. of Tech.), Michio Murase (Hitachi)
- A106 Rise Characteristics of Vapor Bubbles in Subcooled Upflow Boiling
*Tomio Okawa (Osaka Univ.), Tatsuhiko Ishida, Isao Kataoka, Michitsugu Mori (TEPCO)
- A107 Measurement of Deposition Rate of Droplets in a Small Vertical Tube
*Akio Kotani (Osaka Univ.), Tomio Okawa, Isao Kataoka
- A108 Heat Transfer Characteristics of Non-Uniformly Heated Boiling Tube under Low-Pressure and
Low-Mass-Flux Condition
*Hisashi Umekawa (Kansai Univ.), Mio Hirayama, Tetsuo Kitajima (Babcock-Hitachi),
Mamoru Ozawa (Kansai Univ.), Kaichiro Mishima (KUR), Yasushi Saito
- A109 Surface Wettability in High Temperature Atmosphere
Tsukasa Hayashi (Tokyo Univ. of Marine Sci. and Tech.), *Tatsuya Hazuku, Tomoji Takamasa,
Anthony Pollman (Purdue Univ.)

13 : 00~14 : 40 OS-5 III

Chair: Koji Nishida (Hitachi)

- A110 Clarification of Flow Pattern Transition Mechanism
Koji Ito (JCGA)
- A111 Analysis of Flow Oscillation in Natural-Circulation Parallel Evaporating Tubes (Continued Report)
*Shoji Yamauchi (Takamatsu Natl. College of Tech.), Shigeyasu Nakanishi (Ryukoku Univ.)
- A112 Circulation Flow Formation in Micro-Size Fluid Flow Circuit
Yasuo Koizumi (Kogakuin Univ.), Hiroyasu Ohtake, *Naoya Tabuchi
- A113 Stability Analysis of Natural Circulation Loop with Parallel Channels
*Mio Hirayama (Kansai Univ.), Hisashi Umekawa, Mamoru Ozawa
- A114 Development of the Refrigerant Distributor for Heat Exchanger of Air-Conditioner
* Hirokazu Fujino (Daikin Air-Conditioning R&D Lab.), Yutaka Shibata, Haruo Nakata

Organized Session OS-11 [Industrial, academic and governmental Liaison Project]
Organizer: Kiyoshi Horii (Shirayuri College), Akiharu Ousaka (Tokushima Univ.)

14 : 50~15 : 30 OS-11 I

Chair: Kiyoshi Horii (Shirayuri College)

- A115 Keynote Lecture: Technology Fostering and Technology Transfer in the Japan Science and Technology Agency
Shinichi Kuranami (JST)

15 : 40~17 : 20 OS-11 II

Chair: Shinzo Manmoto (Mayekawa MFG.)

- A116 Development of the Inspection System for Pharmaceutical Conveying Pipeline
*Hiroshi Ueda (Taiho Pharmaceutical), Kiyoshi Horii (Shirayuri College.).
- A117 Oil-Polluted Soil Processing and Oil Separation by Micro Bubble Injection
*Yoshio Gotoh (Kyoto Univ.), Akimi Serizawa, Toshihiko Yahiro (Aura Tec),
Hiroshi Tanaka (Kurimoto Mec.), Mitsuru Itsumi
- A118 Visualization of Ambivalent Jet Flow for Stabilizing Thin-Liquid Films
*Shinzaburo Umeda (Fukuyama Univ.), Seizo Hasegawa, Shinzo Manmoto (Mayekawa MFG.),
Kiyoshi Horii (Shirayuri College)
- A119 Study on Heat Transfer Characteristics of Evaporative Heat Exchanger and Its Applicability for an Environmental Issue
*Kenji Yoshida (Osaka Univ.), Masahiro Awane, Tetsuo Moriguchi (Aqua Ecology Tech.),
Hiroshi Yoshida (Chemical Grout), Isao Kataoka (Osaka Univ.)
- A120 The Effect of Pre-cooling of Groundwater Flow on Artificial Ground Freezing
*Shinichi Fukuhara (Tokushima Univ.), Akiharu Ousaka, Koji Kusano,
Tsutomu Tsuchiya (Chemical Grout), Hiroshi Souma

Room B

General Session GS-6 [Nuclear Power]

9 : 00~10 : 20 GS-6

Chair: Tadashi Narabayashi (Toshiba)

- B101 Flow Redistribution Due to Diversion Cross-Flow between Subchannels for Hydraulically Non-Equilibrium Flow in the 2x1 Rod Bundle Channel Simplifying a BWR Fuel Rod Bundle
Akimaro Kawahara (Kumamoto Univ.), *Keiko Kano, Michio Sadatomi,
Shuichi Sakuma (Mitsubishi Motors)
- B102 Numerical Predictions of Water-Vapor Two-Phase Flow Structure in a Tight-Lattice Core with Large-Scale Simulations
*Hiroyuki Yoshida (JAERI), Kazuyuki Takase, Yasuo Ose (Yamato System Engineer),
Masatoshi Kureta (JAERI), Hajime Akimoto
- B103 Characteristic of Natural Circulation Heat Removal with Non Condensable Gas in U-bend Tube on Steam Generator (Natural Circulation and Small LOCA Test)
*Tadahiko Suzuta (Mitsubishi Heavy Industries), Seiho Utsumi, Kazunori Inoue,
Seiji Arita, Jyunji Ogata
- B104 Characteristic of Natural Circulation Heat Removal with Non Condensable Gas in U-bend Tube on Steam Generator (Verification of LOCA evaluation Code)
*Tadahiko Suzuta (Mitsubishi Heavy Industries), Kazunori Inoue, Seiji Arita, Jyunji Ogata

International Session IS-1 [Multiphase Flow Research and Its Industrial Application in Asia]
Organizer: Isao Kataoka (Osaka Univ.), Koichi Hishida (Keio Univ.), Akio Tomiyama (Kobe Univ.)

10 : 30~12 : 10 IS-1

Chair: Isao Kataoka (Osaka Univ.)

- B105 Never Neglect the Multiphase Flow Distribution
Ziping Feng (Chinese Acad. of Sci.)
- B106 In-Tube Condensation Heat Transfer Characteristics of Multi-Component Refrigerant Mixtures
*Jeong-Tae Kwon (Nambu Univ.), Dong-Xu JIN (Korea Inst. of Sci. and Tech.),
Moo-Hwan Kim (Pohang Univ. of Sci. and Tech.)
- B107 A New Iterative Image Reconstruction Scheme for Process Tomography and Applications
*Liu Shi(Chinese Acad. of Sci.), L. Fu, H. Wang F. Jiang
- B108 Flow and Heat Transfer Characteristics of Surfactant Drag Reducer in a Helically Coiled Pipe
*Wael I. A. Aly (Okayama Univ.), Hideo Inaba, Naoto Haruki, Akihiko Horibe
- B109 Terminal Velocities of Single Drops Rising through Stagnant Liquids
*Win Myint (Kobe Univ.), Daisuke Matsumoto, Akira Sou, Shigeo Hosokawa,
Akio Tomiyama

Organized Session OS-10 [Boiling and Two-phase Flow in Microgravity
and Space Thermal Transport System]

Organizer: Haruhiko Ohta (Kyushu Univ.), Haruo Kawasaki (JAXA)

13 : 00~14 : 20 OS-10 I

Chair: Haruo Kawasaki (JAXA)

- B110 Keynote Lecture: Reseach on Boiling and Two-phase Flow in Microgravity
Haruhiko Ohta (Kyushu Univ.)
- B111 Cryogenic Forced Convective Boiling During the Tube Quenching under Microgravity Conditions
*Osamu Kawanami (Univ. of Hyogo), Hisao Azuma (Osaka Pref. Univ.),
Haruhiko Ohta (Kyushu Univ.)
- B112 Numerical Analysis and Ground-based Experiment of Thermal Phenomena and Fluid Behaviors in
On-orbit Transfer Technique
*Ryoji Imai (Ishikawajima-Harima Heavy Industries), Takashiro Tsukamoto,
Osamu Kawanami (Univ. of Hyogo), Hisao Azuma (Osaka Pref. Univ.)

14 : 30~15 : 30 OS-10 II

Chair: Ryoji Imai (Ishikawajima-Harima Heavy Industries)

- B113 Influence of Gravity Acceleration on the Bubble Detachment in a Shear Flow
*Hiroyuki Takahira (Osaka Pref. Univ.), Mituo Takahashi
- B114 Cooling Limit of Boiling Heat Transfer Based on Experimental Data under Microgravity
*Koichi Suzuki (Tokyo Univ. of Sci.), Yuka Shimane
- B115 Increase in Critical Heat Flux for a Large Heating Surface in a Narrow Channel
*Yasuhisa Shinmoto (Kyushu Univ.), Makoto Fukuyama, Haruhiko Ohta

15 : 30~17 : 20 OS-10 III

Chair: Koichi Suzuki (Tokyo Univ. of Sci.)

- B116 Experimental Study on Thermal Characteristic of Condenser in Two Phase Heat Rejection System for
SSPS Generator System
*Takashiro Tsukamoto (Ishikawajima-Harima Heavy Industries), Ryouji Imai,
Haruo Kawasaki (JAXA), Masahiro Mori
- B117 In-Orbit Demonstration Test for Thermal Performance of μ -LabSat's onboard Oscillating Heat Pipe
Atsushi Okamoto (JAXA)
- B118 Experiment on the Depelopment of Space Plates for Two-phase Fluid Loop
Haruo Kawasaki (JAXA), Shusaku Hirai (U-corporation), Sakae Saitou,
Naoki Morita (Kyushu Univ.), Makoto Higashijima, *Takeyuki Yoshida, Haruhiko Ohta
- B119 Weight Estimation of Thermal Control System with Micro-Channel Cold Plate for Space System
*Haruo Kawasaki (JAXA), Haruhiko Ohta (Kyushu Univ.), Terusige Fujii (Kobe Univ.)

- B120 Dynamic Characteristics of the Thermal Accumulator in Thermal Control System in Space Utilizing the Latent Heat
*Yoshiyuki Kitahara (Kobe Univ.), Terushige Fujii, Hitoshi Asano, Katsumi Sugimoto, Shinichi Toyama (JAXA), Haruo Kawasaki

Room C

Organized Session OS-4 [Flow Friction Drag Reduction – Experiment and Modeling –]
Organizer: Takeo Kajishima (Osaka Univ), Shu Takagi (Univ. of Tokyo),
Tsuneo Azuma (Osaka City Univ.)

9 : 40~11 : 00 OS-4 I

Chair: Takeo Kajishima (Osaka Univ)

- C101 Effect of Bubble Size on the Distribution of Local Void Fraction and Frictional Drag Reduction
*Takafumi Kawamura (Univ. of Tokyo), Satoshi Motoyama (Toyo Univ.), Jin Sakamoto, Hiroharu Kato
- C102 Bubble Movements in the Vicinity of Wall in Bubbly Channel Flow
*Yoshiyuki Tagawa (Univ. of Tokyo), Toshiyuki Ogasawara, Shu Takagi, Yoichiro Matsumoto
- C103 A Study of Frictional Drag Reduction of Bubbly Liquid Using Concentric Cylinders
*Hiroshi Oiwa (Univ. of Fukui), Yuichi Murai (Hokkaido Univ.), Fujio Yamamoto (Univ. of Fukui)
- C104 Numerical Simulation of Bubbly Flow Turbulence in a Channel by Force Coupling Method
Kazuyasu Ssugiyama (Natl. Maritime Research Inst.), *Shu Takagi (Univ. of Tokyo), Yoichiro Matsumoto

11 : 10~12 : 10 OS-4 II

Chair: Shu Takagi (Univ. of Tokyo)

- C105 Laminar-Turbulent Transition in a Pipe Flow of Surfactant Solution
*Chengyu LI (Osaka City Univ.), Tsuneo Azuma
- C106 Flow Drag and Heat Transfer Reduction Characteristics of Organic Brine with Surfactant
*Naoto Haruki (Okayama Univ.), Hideo Inaba, Akihiko Horibe, Shinji Tanaka
- C107 On the Drag-Reduction Effect of the Wall-bounded Turbulence due to Planted Fiber
*Takeo Kajishima (Osaka Univ), Takahide Tadokoro

Organized Session OS-2 [Surface Active, Surface Wettability and Multiphase Flow]
Organizer: Toru Sawai (Kinki Univ.), Koichi Murakami (Ehime Univ.)

13 : 00~15 : 00 OS-2 I

Chair: Toru Sawai (Kinki Univ.), Koichi Murakami (Ehime Univ.)

- C108 Keynote Lecture: Wall Surface Wettability and Multiphase Flow
Tomoji Takamasa (Tokyo Univ. of Marine Sci. and Tech.)
- C109 Some Aspects of Gas-Liquid Separation Using the Wettability of Reversed Y-junction
Keisuke Ishiguro (Hokkaido Univ.), *Manabu Iguchi, Yoshiteru Mizuno (Sysmex)
- C110 Effect of Wettability on Characteristics of Gas-Liquid Flow in a Inclined Pipe
Keisuke Fukushi (Hokkaido Univ.), *Manabu Iguchi
- C111 Characteristics of the Multiphase Flow in the Micro Channel with the Surface Modification
*Yasutaka Ichikawa (Univ. of Tokyo), Hiroaki Onoe, Isao Shimoyama, Kiyoshi Matsumoto, Kazunori Hoshino
- C112 Effect of Surface Wettability on Critical Heat Flux under Forced Convective Boiling
*Miyuki Akiba (Toshiba), Kenetsu Shirakawa, Shinichi Morooka, Akio Sayano, Hiroki Honda, Yoshiaki Imoto (Gifu Univ.)

15 : 10~16 : 30 OS-2 II

Chair: Shinichi Morooka (Toshiba)

- C113 Study on the Dynamic Behavior of Wetted Characteristics on High Superheated Wall
*Hiroyasu Ohtake (Kogakuin Univ.), Youichi Ozaki (Asahikogyosha),
Yauo Koizumi (Kogakuin Univ.)
- C114 Numerical Study on Two-Phase Flow for Self-Organization Joining Using Conductive Resin Paste with Low-Melting-Point Alloy Filler
Kiyokazu Yasuda (Osaka Univ.), *Koushi Ohta, Kouzou Fujimoto
- C115 Discharge Characteristics of Liquid Droplet from a Small Diameter Tube
*Kunihito Matsumura (Ibaraki Univ.), Fumito Kaminaga, Koichi Washio
- C116 Effects of Turbulence Intensity on Standing Position of Liquid Droplet on Inner Wall of Horizontal Circular Pipe
*Seiji Ogura (Ehime Univ.), Koichi Murakami, Shinfuku Nomura, Kenichi Tokunaga

16 : 40~17 : 40 OS-2 III

Chair: Manabu Iguchi (Hokkaido Univ.)

- C117 Developing Pipe Flow of Surfactant Solution
*Hideki Hibara (Ehime Univ.), Junji Ochi, Yukiharu Iwamoto
- C118 Effects of Surface Tension on Flow Characteristics of Two-Phase Gas-Liquid Flow in Vertical Pipes (First Report, Void Fraction and Frictional Pressure Drop)
*Hiroaki Tsubone (Ariake Nati. College. of Tech.), Michio Sadatomi (Kumamoto Univ.),
Akimaro Kawahara, Akishige Sakuragi
- C119 Effect of Surfactant Additives on Gas-Liquid Interfacial Structure in Annular Two-Phase Flow
*Toru Sawai (Kinki Univ.), Masuo Kaji, Kazuyuki Shishino

Room D

General Session GS-1 [Multiphase Flow Physics]

10 : 30~12 : 10 GS-1 I

Chair: Yoshimoto Onishi (Tottori Univ.)

- D101 Holdup and Frictional Pressure Drop in Air-Water Two-Phase Flow in Capillary Rectangular Channels (Differences between Vertical Upward Flow and Horizontal Flow and Effect of Aspect Ratio)
Hideo Ide (Kagoshima Univ.), *Takamasa Fujiwara, Hisayoshi Kado
- D102 Gas-Liquid Two-Phase Flow in Microchannels (Two-phase Flow Patterns and Void Fraction)
Akimi Serizawa (Kyoto Univ.), *Zensaku Kawara, Nobuhiko Suzuki
- D103 Void Fraction of Two-Phase Flows in Microchannels (Examination of Correlations)
*Akimaro Kawahara (Kumamoto Univ.), Michio Sadatomi, Masahiro Kawaji (Univ. of Toronto),
Kazuya Okayama (Kumamoto Univ.), Chung P. M.-Y.(Univ. of Toronto)
- D104 An Experimental Study on Swirling Flow with an Immiscible Droplet in a Horizontal Pipe
*Takuro Kouda (Kyoto Inst. of Tech.), Noriyuki Matsukura (Mitsubishi Heavy Industries),
Yoshimichi Hagiwara (Kyoto Inst. of Tech.)
- D105 Flow Characteristic of Slug Flow through Orifice (3rd Report)
Yoichi Shiomi (Ryukoku Univ.), Shigeyasu Nakanishi, *Toyoaki Ohashi,
Satoshi Hirakuni (Mitsubishi Electric)

13 : 00~14 : 20 GS-1 II

Chair: Yutaka Shibata (Daikin Air-Conditioning R&D Lab.)

- D106 A Study of Constitutive Models for Prediction of Void Fraction Distributions in Sudden Expansion Channel.
*Koichi Kondo (Marine Tech. College), Kenji Yoshida (Osaka Univ.), Tomio Okawa,
Isao Kataoka
- D107 Measurements of Velocity Distribution by PIV and Heat Transfer Characteristics of Spray Cooling on Various Surface orientation
Mituhiko Uemura (Univ. of Tokyo)

- D108 Influence of an Ultrasonic Standing Wave on Behavior of Fine Solid Particles in Stationary Liquid
*Seisuke Hirobe (Univ. of Fukui), Junichi Ohta, Takashi Makara, Yuji Yokota
- D109 Experimental Study on Large Scale Seal of Rotating Axis by Using Magnetic Fluid
*Yoshiyuki Fukuda (College of Industrial Tech.), Noriyoshi Douhara

14 : 30~15 : 50 GS-1 III

Chair: Hideo Ide (Kagoshima Univ.)

- D110 Study of Bubble Motion in Gas-Liquid Bubbly Flow in Vertical Pipes
*Teppei Fujitsuka (Kobe Univ.), Shigeo Hosokawa, Akio Tomiyama
- D111 A General Correlation of Flow Characteristics of Developed Multiphase Steady Flow in a Pipe (1st Report, a General Correlation and Its Application to Volume Fractions of Each Phase)
*Tadashi Sakaguchi (Kobe Univ.), Toshio Yoshinaga (Nishinippon Inst. of Tech.)
- D112 A General Correlation of Flow Characteristics of Developed Multiphase Steady Flow in a Pipe (2nd, Report, Examination of Empirical Correlations of Volume Fractions of Each Phase)
*Toshio yoshinaga (Nishinippon Inst. of Tech.), Hisato Minagawa (Univ. of Shiga Pref.),
Tadashi Sakaguchi (Kobe Univ.)
- D113 An Experimental Study of Structure of Burning Premixed Sprays in Counterflow
*Yuuta Kikuchi (Yamaguchi Univ.), Keita Nakamoto, Osamu Moriue, Masato Mikami,
Naoya Kojima

Friday, August 6, 2004

Room A

Organized Session OS-1 [Bubble-Surface Motion and Mass-Transfer Characteristics]
Organizer: Shu Takagi (Univ. of Tokyo), Akio Tomiyama (Kobe Univ.)

8 : 40~10 : 20 OS-1 I

Chair: Akio Tomiyama (Kobe Univ.)

- A201 Keynote Lecture: Bubble-Surface Motion and Mass-Transfer Characteristics
Katsumi Tsuchiya (Doshisha Univ.)
- A202 Mass Transfer Around Two Spherical Bubbles
Kazuyasu Sugiyama (Natl. Maritime Research Inst.)
- A203 The Effects of Surfactant on the Unsteady Motion of a Rising Bubble
*Shu Takagi (Univ. of Tokyo), Touki Uda, Yoichiro Matsumoto
- A204 Numerical Simulation of Water Treatment by the Dissolution of Ozone Bubbles
Xiaobo Gong (Univ. of Tokyo), *Shu Takagi, Yoichiro Matsumoto

10 : 30~12 : 10 OS-1 II

Chair: Shu Takagi (Univ. of Tokyo)

- A205 Unsteadiness of the Bubble Boundary Layer in Bubbly Flows
*Masamichi Nakagawa (Tokyo Inst. of Tech.), Masanori Aritomi, Michitsugu Mori (TEPCO)
- A206 Bubble Deformation and Break Up Process near the Flow Field around a Circular Cylinder
*Yasutaka Ichikawa (Univ. of Tokyo), Yochiro Matsumoto
- A207 Study on CO₂-Water Two-Phase Bubbly Flow in a Vertical Pipe
*Toshihide Shima (Kobe Univ.), Masataka Shirai, Akio Tomiyama, Shigeo Hosokawa, Akira Sou
- A208 Visualization of Cavitation in an Injector Nozzle and Liquid Jet
*Shinji Nigorikawa (Kobe Univ.), Akira Sou, Akio Tomiyama, Shigeo Hosokawa,
Yoichiro Matsumoto (Univ. of Tokyo)
- A209 The Experimental Study of Micro-Bubble Generator by Venturi Tube
*Kazuhiro Watanabe (Univ. of Tokyo), Akiko Fujiwara, Shu Takagi, Yoichiro Matsumoto

Room B

Organized Session OS-6 [Multiphase Flow Characteristic of Intelligent Fluid]
Organizer: Hideya Nishiyama (Tohoku Univ.), Hiroshi Yamaguchi (Doshisha Univ.)

8 : 40~10 : 20 OS-6 I

Chair: Hideya Nishiyama (Tohoku Univ.)

- B201 Pressure Characteristics for Boiling Two-phase Flow of Non-azeotropic Temperature Sensitive Magnetic Fluid
Hiroshi Yamaguchi (Doshisha Univ.), Takuya Kuwahara, *Masashi Ohnishi,
Masatoshi Enomoto (Showa Denko)
- B202 Experimental Study on Difference of Magnetism between Magnetic Intelligent Fluid and Composite Material
Kunio Shimada (Akita Pref. Univ.)
- B203 Fundamental Research on Liquid Crystal Micro-Actuators
*Shigeomi Chono (Kochi Univ. of Tech.), Tomohiro Tsuji
- B204 Study on Holding Force to a Droplet Levitated by the Acoustic Standing Wave
*Kazuyoshi Aoki (Univ. of Tsukuba), Shogo Yamada, Masahiro Kawaji (Toronto Univ.),
Yutaka Abe (Univ. of Tsukuba)

- B205 Study on Levitated Droplet Surface Behavior by Ultrasonic Wave
*Shogo Yamada (Univ. of Tsukuba), Kazuyoshi Aoki (Toshiba), Yutaka Abe (Univ. of Tsukuba),
Masahiro Kawaji (Toronto Univ.), Katsuhiko Nishinari (Ryukoku Univ.)

10 : 30~12 : 10 OS-6 II

Chair: Hiroshi Yamaguchi (Doshisha Univ.)

- B206 In-Flight Particle Characteristics in a DC-RF Hybrid Plasma Flow
*Kohtaro Kawajiri (Tohoku Univ.), Hideya Nishiyama
- B207 Prediction of Wall Voltage Transfer Curves by Numerical Analysis of Plasma in PDP Cells
*Takashi Misaka (Tohoku Univ.), Satoyuki Kawano
- B208 Studies on Intelligent Fluid, in Relation to Heat and Mass Transfer
*Hiroaki Shirako (Osaka Univ.), Seiji Nakashima, Kenji Yoshida, Isao Kataoka
- B209 Flow Field around a Rising Particle under Strong Vertical Magnetic Field
* Kazuyuki Ueno (Tohoku Univ.), Hideyuki Yasuda (Osaka Univ.)
- B210 Effect of Additive Colloidal Dispersions on Properties of Orifice Flow
* Shinji TOGA (Toyama Natl. College of Maritime Tech.), Tomichi Hasegawa (Niigata Univ.),
Takatsune Narumi

Room C

General Session GS-5 [Interfacial Phenomena]

9 : 00~10 : 20 GS-5 I

Chair: Akiharu Ousaka (Tokushima Univ.)

- C201 Flow Behavior near Interface with Single- and Two-Component Liquid in Microchannel
*Naoki Ichikawa (AIST), Ryutarō Maeda
- C202 Front-Tracking Simulation of Water Drop Sinking in Oil Taking the Marangoni Effect into Account
*Yasufumi Yamamoto (Kansai Univ.), Fuminori Kuzuo,
Makoto Yamauchi (Osaka Pref. College of Tech.), Tomomasa Uemura (Kansai Univ.)
- C203 Jet Breakup into Drops in Non-Newtonian Fluids Systems
*Kozue Akimoto (Saitama Univ.), Shunji Homma, Jiro Koga, Shiro Matsumoto
- C204 Formation of a Jet from a Nozzle into a Quiescent Fluid and Its Breakup into Drops
*Shunji Homma (Saitama Univ.), Tomohiro Sasada, Jiro Koga, Shiro Matsumoto

10 : 30~11 : 50 GS-5 II

Chair: Naoki Ichikawa (AIST)

- C205 Flow Characteristics in Swirl Gas-Liquid Two-Phase Flow in a Vertical Pipe
*Hayato Kubota (Kobe City College of Tech.), Kenta Kanemura (Tottori Univ.),
Hideaki Shakutsui (Kobe City College of Tech.), Hirofumi Oonari (Tokuyama College. of Tech.)
- C206 Hydrodynamic Characteristics at the Onset of Flooding in an Inclined Pipe
*Deendarlianto (Tokushima Univ.), Akiharu Ousaka, Akira Kariyasaki (Fukuoka Univ.),
Jiro Yamashita (Tokushima Univ.)
- C207 Drop Formation from a Nozzle in Liquid-Liquid Systems
*Haruhisa Honda (Saitama Univ.), Homma Shunji, Jiro Koga, Shiro Matsumoto
- C208 Relationship between the Interfacial Motion of a Single Bubble and Its Zigzagging Motion of the
Center of Gravity in Rest Water Column
*Yuki Miyamoto (Shizuoka Univ.), Suguru Amma, Takayuki Saito

Saturday, August 7, 2004

Room A

General Session GS-3 [Numerical Analysis of Multiphase Flow]

9 : 00~10 : 40 GS-3 I

Chair: Toshihiro Kawaguchi (Osaka Univ.)

- A301 The Effect of the Surface Wave Shape on the Heat Transfer of a Falling Film
Tomoaki Kunugi (Kyoto Univ.), *Chiaki Kino, Akimi Serizawa
- A302 Numerical Simulation of Two-Phase Slug Flow through Orifice
*Yoichi Shiomi (Ryukoku Univ.), Toshiyuki Suzuki (CHAM)
- A303 Numerical Analysis of Water Mist Fire Suppression System
*Masato Fukuta (Univ. of Tokyo), Kenji Ono, Yoichiro Matsumoto
- A304 Numerical Analysis for Drop Generation Using an Orifice and External Flow
*Katsuyuki Machida (Saitama Univ.), Shunji Homma, Jiro Koga, Shiro Matsumoto
- A305 Interface Tracking Simulation of Fluid Particle by an Improved SCA
*Kosuke Hayashi (Kobe Univ.), Win Myint, Akira Sou, Akio Tomiyama

10 : 50~12 : 10 GS-3 II

Chair: Toshihiko Umekage (Kyushu Inst. of Tech.)

- A306 Drag Force Model for Gas-Solid Fluidized Bed of Different Size Binary Mixtures
*Toshihiro Kawaguchi (Osaka Univ.), Keisuke Ito, Toshitsugu Tanaka, Yutaka Tsuji
- A307 Numerical Analysis of Solid Particles Lifted by Shock-Induced Flow
* Katsunori DOI (Nagoya Univ.), MEN'SHOV Igor, Yoshiaki Nakamura
- A308 Vortex Simulation Applied to Internal Liquid-Solid Two-Phase Flows
*Yoshiyuki Iso (Ishikawajima-Harima Heavy Industries), Yoshiyuki Yamane, Osamu Watanabe, Kyoji Kamemoto (Yokohama Natl. Univ.)
- A309 Numerical Simulations of Blood Flow with Hb Vesicles at Microvascular Bifurcations
*Toru Hyakutake (Okayama Univ.), Takeshi Matsumoto (Osaka Univ.)

Organized Session OS-3 [Control and Characteristics of Multiphase Jet and Multiphase Wake]

Organizer: Tomomi Uchiyama (Nagoya Univ.), Toshihiko Shakouchi (Mie Univ.)

13 : 00~14 : 20 OS-3 I

Chair: Tomomi Uchiyama (Nagoya Univ.)

- A310 Orientation of Cylindrical Material Using Swirling Flow
*Tetsuya Watanabe (Nihon Univ.), Kenji Tanaka (Okamoto Corp.), Masahiro Takei (Nihon Univ.), Kiyoshi Horii (Shirayuri Univ.)
- A311 Experimental Studies on Liquid-Phase Motion Induced by a Single Bubble and a Bubble Swarm
*Masaki Ishitobi (Shizuoka Univ.), Hiroaki Kusano, Takayuki Saito
- A312 Gas-Liquid Two-Phase Flow through Sudden Contraction Pipe - Drag Reduction
Toshihiko Shakouchi (Mie Univ.), *Alexandros Voutinas, Hirotaka Nonaka, Koichi Tsujimoto, Toshitake Ando
- A313 Edge-Tone Phenomenon inside Divergent-Flow Region in Diamond-Shaped Cylinder Bundles
*Seizo Hasegawa (Fukuyama Univ.), Shinzaburo Umeda, Wen-Jei Yang (Univ. of Michigan)

14 : 30~15 : 50 OS-3 II

Chair: Takayuki Saito (Shizuoka Univ.)

- A314 Sludge Treatment Using Gas-Liquid Two-Phase Jet
*Moriyoshi Shitara (Hokkaido Univ.), Manabu Iguchi

- A315 Numerical Simulation of Bubble-Laden Plane Mixing Layer by Vortex in Cell Method
*Tomohiro Degawa (Nagoya Univ.), Tomomi Uchiyama
- A316 Estimation of Impact Force of High Speed Water Jet
Toyohiro Kinoshita (East Japan Transport Technology)
- A317 Condition for the Occurrence of Swirl Motion of Liquid Jet Impinging on the Interface between Stratified Two Layers
*Daisuke Iguchi (Hokkaido Univ.), Manabu Iguchi

16 : 00~17 : 00 OS-3 III

Chair: Toshihiko Shakouchi (Mie Univ.)

- A318 Mixing Process of Catalysts into Gas Jet
*Ryoji Ogiso (Chiyoda Advanced Solutions), Akiyo Mizusaki (P&G),
Hideaki Monji (Univ. of Tsukuba), Goichi Matsui (Kinki Univ.)
- A319 Research of Free Falling Velocity of Powder Jet
*Koichiro Ogata (Oshima Natl. College of Maritime Tech.), Yuji Tomita (Kyushu Inst. of Tech.)
- A320 Numerical Simulation for Turbulence Transition of Air-Particle Two-Phase Jet
*Toshihiko Umekage (Kyushu Inst. of Tech.), Shinichi Yuu, Atsushi Imamura

Room B

General Session GS-1 [Multiphase Flow Physics]

9 : 00~10 : 40 GS-1 IV

Chair: Hachio Hamaguchi (Kobe Univ.)

- B301 Bubble Distribution in Shear Flow of Highly Viscous Liquids
*Kaori Tsutsumino (Keio Univ), Koichi Terasaka
- B302 A Study on the Shock Wave Phenomena and Bubble Collapse in Liquids Containing Air Bubbles
*Hiromu Sugiyama (Muroran Inst. of Tech.), Ryojiro Minato, Kazuhide Mizobata,
Akihiko Yamashita, Hisatoshi Ogasawara
- B303 On the Generation of Small Bubble from a Jet into a Turbulent Boundary Layer
*Tsukasa Tokunaga (Osaka City Univ.), Kenji Katoh, Tsuneo Azuma
- B304 Evaluation of Double-Cylinder Type Bubble Generator
* Masataka Shigefuji (Shibaura Inst. of Tech.), Hideki Murakawa (Tokyo Inst. of Tech.),
Hiroshige Kikura, Masanori Aritomi, Kensuke Usui (Shibaura Inst. of Tech.),
Michitugu Mori (TEPCO)
- B305 Pseudo-Laminarization and Flow Characteristics of Micro Bubbles Containing Milky Bubbly Flow
Akimi Serizawa (Kyoto Univ.), *Tomohiko Inui, Toshihiko Yahiro (Aura Tec)

10 : 50~12 : 10 GS-1 V

Chair: Naoto Haruki (Okayama Univ.)

- B306 Correlation between Interfacial Motion of a Single-Rising Bubble and Motion of Its Surrounding Liquid
*Suguru Amma (Shizuoka Univ.), Akinori Kumagai, Yuki Miyamoto, Takayuki Saito
- B307 Behavior of a Pair of Bubbles Generated Successively from Single Nozzle
*Toshiyuki Sanada (Kyushu Univ.), Masao Watanabe, Daijiro Ishida, Tohru Fukano
- B308 Measurement of Liquid Velocity around a Large Bubble using UVP
Hisato Minagawa (Univ. of Shiga Pref.), Masaya Ibuki (Dainippon Screen MFG.), *Tsuyoshi
Fukazawa (Univ. of Shiga Pref.), Yoichi Shiomi (Ryukoku Univ.)
- B309 Flow Mechanism of a Single Large Bubble in an Inclined Rectangular Channel
Hachio Hamaguchi (Kobe Univ.)

Organized Session OS-7 [Phase Change and Heat Transfer Characteristics]
Organizer: Yoshimoto Onishi (Tottori Univ.), Hideo Inaba (Okayama Univ.)

13 : 00~14 : 20 OS-7 I

Chair: Michio Murase (Hitachi, Ltd)

- B310 Kinetic Theory Based Simulations for Evaporation and Condensation Flows of a Vapor between the Condensed Phases - Effects of the Internal Structures of the Condensed Phases -
*Yoshimoto Onishi (Tottori Univ.), Takeshi Ooshida
- B311 Relation between Heat Transfer and Frictional Pressure Loss of Heated Air-Water Two-Phase Flow in Small Diameter Tubes
*Masuo Kaji (Kinki Univ.), Toru Sawai, Tadanobu Ueda
- B312 Prediction of Droplet Flowrate in Annular Flow
*Tomio Okawa (Osaka Univ.), Akio Kotani, Isao Kataoka
- B313 Forced Convection Heat Transfer of Gel-Type Latent-Heat Storage Material Slurry in a Pipe
Hideo Inaba (Okayama Univ.), Akihiko Horibe, Naoto Haruki, *Takehiko Nakamoto

14 : 30~15 : 50 OS-7 II

Chair: Tomio Okawa (Osaka Univ.)

- B314 Investigation of the Optimal Atomizing in Mist Cooling Heat Transfer
*Hajime Onishi (Kanazawa Univ.), Yukihiko Yokoyama, Yukio Tada, Akira Takimoto
- B315 Continuous Ice making Characteristics in a Cooled Pipe Using Organic Aqueous Solution
*Akihiko Horibe (Okayama Univ.), Hideo Inaba, Naoto Haruki, Toshio Sugita
- B316 Effects of the Latent Heat Parameter on Evaporation and Condensation Flows between the Condensed Phases with Internal Structures - Simulations Based on the Fluid Dynamic Formulation -
Yoshimoto Onishi (Tottori Univ.), Takeshi Ooshida, *Yuuki Mannari
- B317 Evaluation Method of Condensation Heat Transfer of Steam-Air Mixture in a Vertical Tube
*Takashi Nagae (INSS), Michio Murase, Wu Tiejun (Purdue Univ.), Vierow Karen

16 : 00~17 : 20 OS-7 III

Chair: Masuo KAJI (Kinki Univ.)

- B318 The Relation between Boiling Heat Transfer and Liquid Film Behavior for Wire Coil Inserts in Vertical Pipe Flows
*Keishi Takeshima (Kochi Natl. College of Tech.), Hitoshi Asano (Kobe Univ.), Terushige Fujii
- B319 Microscopic Boundary Conditions at Nonequilibrium Liquid-Vapor Interfaces
*Gyoko Nagayama (Tokuyama College of Tech.), Teruhito Fujishiro (Kyushu Inst. of Tech.), Takaharu Tsuruta
- B320 Boiling Heat Flux in a Narrow Gap
*Michio Murase (INSS), Takashi Nagae, Yukimitsu Okano
- B321 Heat Transfer Characteristic and Critical Heat Flux in Mist Dispersed Flow (Effects of Liquid Droplet Flow Rate and Air Flow Rate on Heat Transfer and Correlations)
Hiroyasu Ohtake (Kogakuin Univ.), *Tomoyasu Tanaki, Yasuo Koizumi

Room C

Organized Session OS-8 [PIV/PTV Measurement of Multiphase Flow]
Organizer: Yuichi Murai (Hokkaido Univ.)

9 : 00~11 : 00 OS-8

Chair: Yuichi Murai (Hokkaido Univ.)

- C301 Consideration of Flow Adjacent to a Sinking Water Drop in Silicone Oil
*Makoto Yamauchi (Osaka Pref. College of Tech.), Jun Yamamoto, Yasumasa Yoshitani, Tomomasa Uemura (Kansai Univ.)
- C302 Visualization of Gas-particle Two-phase Flow through Model of Bag-filter in a Dust Collector of the

Waste Incinerator

*Satoshi Shimakawa (Shinshu Univ.), Shigeru Hinata, Nobuhiro Himeno, Bau Limin,
Yoshimi Watanabe, Ichio Ichimura

C303 Bubble's Behavior near Wall in Riser

*Kazuhiro Ohno (Univ. of Tsukuba), Hideaki Monji

C304 Transient Shapes and Behaviors of Bubbles Leaving from a Nozzle

*Tomomasa Uemura (Kansai Univ.), Yasufumi Yamamoto, Noriyoshi Yonehara

C305 An Experimental Study on the Effect of Microbubbles on the Natural Convection Boundary Layer along a Vertical Heating Surface

*Daisuke Takazawa (Kyoto Inst. of Tech.), Kenji Nansaka, Yoshimichi Hagiwara

C306 PIV Measurement of a Liquid Jet Structure Containing Bubbles

*Masashi Nishikawa (Univ. of Fukui), Toshio Sasaki, Yuichi Murai (Hokkaido Univ.),
Fujio Yamamoto (Univ. of Fukui)

Organized Session OS-9 [Science and Technical Application of Micro-Nano Bubbles]

Organizer: Hirofumi Ohnari (Tokuyama College of Tech.),
Hideaki Shakutui (Kobe City College of Tech.)

11 : 10~12 : 10 OS-9 I

Chair: Yasuyuki Shinpo (Keio Univ.)

C307 Micro Bubbles Generation by Depressurization from High Pressure Water

Hideo Inaba (Okayama Univ.), *Akihiko Horibe, Naoto Haruki, Tuguo Nakao

C308 Micro-bubble Formation by Liquid Flow through Raschig ring Packed Bed

*Toshiro Miyahara (Okayama Univ. of Sci.), Hiromi Norikane, Jun Maeda, Yasuyuki Ono

C309 A Study on Flow Visualization of Micro-Nano Bubbles and its Rising Process

*Takashi Nakayama (Tokuyama College of Tech.), Hiroto Ohnari (Yamaguchi Univ.),
Akira Nakata (Tokuyama College of Tech.), Takako Yamamoto, Hirofumi Ohnari

13 : 00~14 : 00 OS-9 II

Chair: Katsumi Matsuo (Chuden Engineering Consultants)

C310 Distribution of Microbubbles and Oxygen Supplying Effects

*Satoshi Yamada (Univ. of Shiga Pref.), Takashi Amano, Hisato Minagawa

C311 Physiological Activity of Micro-Nano Bubbles

*Hiroto Ohnari (Yamaguchi Univ.), Noriaki Harada,
Hirofumi Ohnari (Tokuyama College of Tech.), Takashi Nakayama

C312 Fine Particle Separation from Suspended Water using Micro-Bubbles

*Yasuyuki Shinpo (Keio Univ.), Koichi Terasaka, Takanori Nishino

C313 Cancel

14 : 30~15 : 30 OS-9 III

Chair: Hisato Minagawa (Univ. of Shiga Pref.)

C314 Water Purification Using a Vegetable Activity by Micro-Nano Bubble Technology

*Akira Nakata (Tokuyama College of Tech.), Hirofumi Ohnari, Hiroto Ohnari (Yamaguchi Univ.),
Takashi Nakayama (Tokuyama College of Tech.)

C315 Water Purification of Lower Layer of Dam Using Micro-Nano Bubble Technology

*Katsumi Matsuo (Chuden Engineering Consultants), Yasushi Yamahara, Toshinori Oda,
Kunio Maeda, Hideaki Shakutsui (Kobe College of Tech.),
Hirofumi Ohnari (Tokuyama College of Tech.)

C316 Application of Micro-Bubbles to Environmental Problems in the Ariake Sea

*Shozo Himuro (Ariake Natl. College of Tech.), Hideaki Shakutui (Kobe City College of Tech.),
Katsumi Matsuo (Chuden Engineering Consultants),
Hirofumi Ohnari (Tokuyama College of Tech.)

General Session GS-7 [Multiphase Flow Transportation]

15 : 40~17 : 20 GS-7

Chair: Shinzaburo Umeda (Fukuyama Univ.)

C317 Study on Micro Heat Transport Device

Yasuo Koizumi (Kogakuin Univ.), Hiroyasu Ohtake, *Hisashi Sakurai

C318 Blocking Phenomena of Particles Flowing in a Sudden Contraction Pipe

Takaji Inamuro (Kyoto Univ.), *Taichi Yatsuzuka, Fumimaru Ogino

C319 Fundamental Study of Pipe Flow Characteristics of Slush Nitrogen

*Masamitsu Ikeuchi (Mayekawa Mfg.), Kouichi Matsuo, Akito Machida,

Kenji Yasuda (Super-GM)

C320 Flow Mechanisms of Two-Phase Annular Mist Flow at Exit of a U-Bend (Profiles of Drop Flow Rate in Gas Core)

*Gen Sakamoto (Shibaura Inst. of Tech.), Hiromi Iwaisako (TS Corporation),

Hiroki Ichikawa (Meiden Plant Engineering & Construction),

Kensuke Usui (Shibaura Inst. of Tech.)

C321 Development of a Miniature Mixing-Device for Liquid-Liquid Systems

*Katsuki Saruwatari (Kyoto Univ.), Akimi Serizawa, Tomoaki Kunugi