2nd ISEM07-OSAKA Final Program (1st day)

Room 1 (September 23, Sunday)
12:00 – 12:20 Opening Address
Chairperson: K. NAKAI (Okayama University of Science)
T. YOKOYAMA (President of the Japanese Society for Experimental Mechanics)
M. IGUCHI (President of the Japanese Society for Multiphase Flow)
12:20 – 13:20 Keynote Lecture 1
Chairperson: M. IGUCHI (Hokkaido University)
On Unsteady, Three-Dimensional Characteristics of Vortex Shedding from Bluff Bodies
J. K. TU and **Jiun-Jih MIAU** (National Cheng Kung University)
Coffee Break (20 min.)
13:40 – 14:40 Keynote Lecture 2
Chairperson: T. UEMURA (Kansai University)
Experimental Mechanics in Flow Networks during Its Infancy
Wen-Jei YANG (Univ.of Michigan), Nengli ZHANG, Ching-Pang LEE and Shinzaburo UMEDA
Coffee Break (10 min.)
14:50 – 15:50 A1-1 Flow Visualization I
Chairpersons: T. TANAKA (Osaka University) and H. MONJI (University of Tsukuba)
53 Accurate Representation of Interfacial Tension for Numerical Simulation of Three-Component Fluid Flows by Front-Tracking Method
Yasufumi YAMAMOTO and Tomomasa UEMURA
65 Concentration Measurement of Powder Air Flow in a Nozzle Mixing Vertical Pipe using Process Capacitance Computed Tomography
Tong ZHAO, Kenta MASAKI and Masahiro TAKEI
9 Parametric Study on PIV Measurement of Turbulent Flow in Planar Mixing Layer
Chiuan-Ting LI, Keh-Chin CHANG and Muh-Rong WANG
Coffee Break (20 min.)
16:10 – 17:10 A2-1 Fluid Characteristics
Chairpersons: K. KATOH (Osaka City University) and M. TAKEI (Nihon University)
55 Spatial Characteristics of Turbulent Flow through Porous Media
Sota NAKAJO, Takaaki SHIGEMATSU, Kosei TAKEHARA and Gozo TSUJIMOTO
22 Profiles of Liquid Droplets on Solid Plates in Gravitational and Centrifugal Fields
Mitsuyoshi HIGASHINE, Kenji KATOH, Tatsuro WAKIMOTO and Tsuneo AZUMA
24 Drag Reduction of Pipe Inlet Flow
Toshitake ANDO, Toshihiko SHAKOUCHI, Hiroyuki YAMAMOTO and Koichi TSUJIMOTO
18:00 – 20:00 Welcome Party at Centenary Memorial Hall

Room 2 (September 23, Sunday)
14:50 – 16:10 C1-2 Miscellaneous I Chairperson: Y. SANO (Toshiba Corporation) and E. YAMAMOTO (Kinki University)
49 Measurement of the Crystal Growth Velocity in the Bulk-Metallic-Glass Zr-Based Alloys by using the AC + DC Levitation Method Daigo NAGAMATSU, Hideyuki YASUDA, Yuki TAMURA, Tsutomu YOSHIMOTO, Tomoya NAGIRA, Yoshihiko YOKOYAMA and Akihisa INOUE
72 Fatigue Characteristics of Glass Ceramics in a Water Environment Akira YOSHIKAWA, Akira HIRATSUKA, Ryoji TSUJINO and Koichi OGAWA
82 Effect of Machining Parameters on Bk-7 Optical Glass using Conventional and Rotary Ultrasonic Machines E. HAMZAH, S. IZMAN, C. Y. KHOO, N. N. Zainal Abidin, M. J. TAN
23 Observation of Behavior of Microorganisms in Microchannels that Simulate Pouring Lip for Containers of Liquid Food Products Taiki HOSHI, Eisaku UMEZAKI and Katsunori FUTASE
Coffee Break (20 min.)
16:30 – 17:50 A2-2 Heat Transfer Chairpersons: K. NISHIHARA (Osaka Electro-Communication University) and K. MORI (Osaka Electro-Communication University)
12 Pressure Loss, Heat Transfer Coefficient and Flow Pattern in Drag-Reducing Two-Phase Flow of Air and Surfactant Solution Inside a Vertical Tube Koichi ARAGA and Keiji MURATA
16 A Technique for Measurements of Unsteady Heat Transfer using a Thin Conductive-Film and Infrared Thermography Hajime NAKAMURA
20 Heat and Fluid Flow Characteristics in Plate Heat Exchanger with Herringbone Plate Made of Titanium Yuji MATSUO, Shuichi TORII and Shigeru ITOH
29 Characteristics of Boiling Flow in Helically Coiled Heat-Transfer Tube Goichi MATSUI, Masatomi SUZUKI and Masuo KAJI
18:00 – 20:00 Welcome Party at Centenary Memorial Hall

Room 3 (September 23, Sunday)
14:50 – 16:10 B1-3 Testing and Evaluation Chairperson: S. T. JENQ (National Cheng Kung University) and K. NAKAI (Okayama University of Science)
66 Statistical Investigation on Tensile Strength of Friction-Welded Dissimilar Joints of Titanium to Copper Ryoji TSUJINO, Yuichi SASAKI, Yusuke KYOGOKU, Hiizu OCHI, Gosaku KAWAI and Koichi OGAWA
67 Effect of Contact Detecting Method on Pre-Heating Time and Tensile Strength in 6061, 2017 Aluminum Alloy to SUS304 Stainless Steel Friction Welding Ryoji TSUJINO, Katsuyoshi MORIKAWA and Koichi OGAWA
41 Inner Structure / Elastic Modulus Control of Micro Cantilever Takurou MICHINOMOTO, Masafumi MIWA, Shigeki TSUCHITANI and Satoru YONEYAMA
8 Influence of Nanoindentation Depth and Annealing Temperature on Formation of Eutectic Phase in Au/Si Thin Film Systems Woei-Shyan LEE and Fang-Jui FONG
Coffee Break (20 min.)
16:30 – 17:30 B2-3 Biomechanics Chairperson: E. UMEZAKI (Nippon Institute of Technology)
14 Biomechanical Behavior of Cortical Bone after Overloading: Comparison of the Residual Strength under Monotonic and Continuous Loading Ei YAMAMOTO and Masaaki TANAKA
43 Development of Resonance Vibration Device and Its Clinical Application to Dentistry Mirei CHIBA, Makoto NISHIMURA, Toshirou OHASHI, Masaaki SATO and Kaoru IGARASHI
81 Displacement and Deformation Analysis of the Periodontium under Dental Occlusion using a Digital Image Correlation Method Yasuyuki MORITA, Masakazu UCHINO, Mitsugu TODO, Yasuyuki MATSUSHITA, Kazuo ARAKAWA and Kiyoshi KOYANO
18:00 – 20:00 Welcome Party at Centenary Memorial Hall

2nd ISEM07-OSAKA Final Program (2nd day)

Room 1 (September 24, Monday)
9:00 – 10:00 Keynote Lecture 3 Chairperson: T. UEMURA (Kansai University) **Application of Flow Visualization Measurement to Model Experiments in the Environmental Engineering** **Akikazu KAGA** (Osaka University) and Akira KONDO
Coffee Break (20 min.)
10:20 – 11:40 A3-1 Channel Flow & Interaction Chairpersons: S. UMEDA (Fukuyama University) and H. MONJI (University of Tsukuba)
30 Critical Reynolds Number in Constant-Acceleration Rectangular Duct Flow Yusuke NAKAHATA, Iori WADA, Kazuyoshi NISHIHARA and Manabu IGUCHI
31 Flow Rate Measurement in Unsteady Pipe Flow through a Plate Orifice Yusuke NAKAHATA, Iori WADA, Kazuyoshi NISHIHARA and Manabu IGUCHI
15 Fundamental Study on Cuttings Transport by Foam in Horizontal Wells Hiroshi TAKAHASHI, Amna Gumati ABDUSALAM and Yuko SUTO
13 Vibration Characteristics of Dragonfly Wings Seiichi SUDO, Kazuto TAKAGI, Koji TSUYUKI and Tetsuya YANO
Lunch
13:00 – 14:20 A4-1 Flow Oscillation Chairpersons: S. SUDO (Akita Prefectural University) and K.-C. CHANG (National Cheng Kung University)
19 Vibration Characteristics of Non-Elastic Tube Bundles in Cross Flow Kar-Hooi CHEONG and Hideaki MONJI
21 Fluid Flow Transport Phenomena around the Diamond-Shaped Cylinders in Free Stream Noritsugu UEDA and Shuichi TORII
34 Freestream Turbulent Effects on Three-Dimensional Unsteadiness of Vortex Shedding from Bluff Bodies Y. C. TSENG, J. K. TU and J. J. MIAU
64 Measurements of Flip-Flop Flow Phenomenon Inside Diamond-Shaped Cylinder Bundles by Means of LDV and PIV Shinzaburo UMEDA, Shinji SHIGEYAMA and Wen-Jei YANG
14:30 – 17:30 Excursion to Asahi Brewery and Japanese Gardens at Banpaku Park
18:00 – 20:00 Banquet at Hotel Mare Minamisenri

Room 2 (September 24, Monday)
10:20 – 11:40 A3-2 Multiphase Flow I Chairpersons: T. USUI (Osaka University) and M. TAKEI (Nihon University)
25 Fractal Scale Indication of Dynamic Characteristics of Oil/Water Two Phase Flow Pattern in Vertical Upward Pipe ZONG Yan-Bo, JIN Ning-De and Chi Heng
32 Stability of Annular Flow and Flow Pattern Transition to Churn Flow Toru SAWAI, Masuo KAJI and Mitsushi OHMASA
59 Effect of Channel Gap on Flow Pattern of Air-Water Two-Phase Flow in Horizontally Placed Rectangular Milli-scale Channels T. KUMAGAI, Y. OKUYAMA and M. IGUCHI
60 Effect of Channel Attitude on Flow Pattern of Air-Water Two-Phase Flow in Rectangular Milli-Scale Channels T. KUMAGAI, Y. OKUYAMA and M. IGUCHI
Lunch
13:00 – 14:20 A4-2 Bubbles & Particles Chairpersons: M. ISHIZUKA (Toyama Prefectural University) and H. TAKAHASHI (Tohoku University)
44 Formation Condition of Stable Swirling Flow Accompanied with Air-Core in Discharging Liquid in the Reactor Vessel from a Nozzle Hideki NAKAZATO, Kenji OSAWA, Kenji TAGUCHI and Tateo USUI
46 Behavior of Bubbles Passing through a Catalyst Particle Layer and Treatment of Nitrate Nitrogen Manabu IGUCHI, Taku TAMAMORI and Moriyoshi SHITARA
38 Effect of Particle Size on Instability of Suspension-Fluid Interface Takashi MITSUI, Shusaku HARADA and Kuniomi ASAKURA
37 Study of Fluid Force Characteristics on a Plate Blade with Steep Hump Kunio IRABU, Jitendro Nath Roy and Masaaki ISHIKAWA
14:30 – 17:30 Excursion to Asahi Brewery and Japanese Gardens at Banpaku Park
18:00 – 20:00 Banquet at Hotel Mare Minamisenri

Room 3 (September 24, Monday)
10:20 – 11:40 C3-3 Miscellaneous II Chairpersons: H. NAKAZATO (Osaka University) and M. IGUCHI (Hokkaido University)
71 Study on Circular Complex viewed from Environmental Systems: Environmentally-Friendly Cooling Air Drilling Performance Akira YOSHIKAWA, K. SAKURAI, K. ADACHI and Akira HIRATSUKA
63 Measurements and Analysis of Molten Silicon Temperature and Flow in Solidification Process of Solar Silicon Seiko NARA, Toshio ISHII, Hirofumi MIYAHARA and Keisuke OGI
52 Application of Time-Resolved X-Ray Imaging to the Solidification Behaviour Hideyuki YASUDA, Yosuke YAMAMOTO, Tomoya NAGIRA, Masato YOSHIYA, Akira SUGIYAMA, Itsuo OHNAKA, Koichi KAWASAKI, Keiji UMETANI and Kantaro UESUGI
26 Measurement of Moving Speed of Sealed Film Bags Filled up with Liquid in High-Speed Vertical Automatic-Fill-Seal-Cut Packing Machine Yuma SHINODA, Katsunori FUTASE, Katsumi HONMA and Eisaku UMEZAKI
Lunch
13:00 – 14:20 B4-3 Stress Analysis Chairperson: S. YONEYAMA (Aoyama Gakuin University)
75 Fluorescence Spectroscopy as a Method for Concurrently Measuring Stress and Temperature Fields in Ceramic Materials Kanta SAKAMOTO, Wenliang ZHU and Giuseppe PEZZOTTI
17 The Cyclic Stress Measurement Method using Grain Size and Occurrence Rate of Grown Grains in Electrodeposited Copper Foil Yuichi ONO and Seiichiro KITAOKA
56 Dynamic Visualization of Stress Distribution on Metal Surface by Mechanoluminescence Image Chenshu LI, Chao-Nan XU, Lin ZHANG, Hiroshi YAMADA and Yusuke IMAI
61 Yield-point Phenomena in Pure Aluminum: A Peculiar Flow Behavior of Ultrafine Grained Metals Nobuhiro TSUJI, Naoya KAMIKAWA, Motoki HISHIDA, Daisuke TERADA and Naoki TAKATA
14:30 – 17:30 Excursion to Asahi Brewery and Japanese Gardens at Banpaku Park
18:00 – 20:00 Banquet at Hotel Mare Minamisenri

2nd ISEM07-OSAKA Final Program (3rd day)

Room 1 (September 25, Tuesday)
10:20 – 11:40 A5-1 Multiphase Flow II Chairpersons: H. KIKURA (Tokyo Institute of Technology) and K. ASAKURA (Hokkaido University)
73 A Simulation Approach for Evaluating Solid-Liquid Separation System in Sludge A. HIRATSUKA, I. AWATA and R. TSUJINO
77 Particles Behaviour of Fluidized Bed in Wavy Flow by Impedance Measurement Tsuneo NOGUCHI, Masaaki HONDA, Masahiro TAKEI, Kunihiro HOSHINO, Susumu ISHII and Mitsuaki OCHI
80 Particle Temperature Distribution in Two-Dimensional Fluidized Bed with Heat Transfer: DEM Simulation and Infrared Thermography Measurement Takuya SAKURAI, Toshihiro MINAMI, Koji KAMIMURA, Toshihiro KAWAGUCHI, Toshitsugu TANAKA, Takuya TSUJI and Yutaka TSUJI
69 Interaction between Burgers Vortex and a Settling Particle Yohsuke TANAKA, Kazuaki OTSU, Takuya TSUJI and Toshitsugu TANAKA
Lunch
13:00 – 14:20 A6-1 Jet Chairpersons: T. SHAKOUCHI (Mie University) and J.-J. MIAU (National Cheng Kung University)
3 Experimental Study on Blowout Limit of Subsonic Hydrogen Jet Diffusion Flame Shuichi TORII
18 Bubble Formation Frequency at a Single-Hole Nozzle Immersed in a Mercury Bath Manabu IGUCHI, Tomoyuki CHIHARA, Ryoji TSUJINO, Yasushi SASAKI, Kazuyoshi NISHIHARA and Goichi MATSUI
68 Some Aspects of the Amplitude of Swirl Motion of Liquid Jet Takeshi KAWAYAMA, Daisuke IGUCHI, Masahiro GOTOU, Satoshi MIKI and Manabu IGUCHI
39 Phase-Averaged Mixing and Combustion Characteristics of Multiple Jets Perturbed by Cyclic Oscillation Masaaki MIZUNO, Kazuya TATSUMI, Shinya OKANO and Kazuyoshi NAKABE
Coffee Break (20 min.)
14:40 – 16:00 C7-1 Environmental Engineering Chairpersons: H. YASUDA (Osaka University) and A. HIRATSUKA (Osaka Sangyo University)
47 Simple Removal Method of Dioxins in Wastewater by Adsorption on Polyolefin Particles Hirotoshi KAWABATA, Hideki NAKAZATO and Tateo USUI
50 Effect of Residual Volatile Matter on Reduction of Iron Oxide in Carbon Composite Pellets Hirokazu KONISHI, Atsushi YAMASHITA and Tateo USUI
57 Desiliconization of Molten Fe-C-Si Alloy with CO_2 and O_2 Tateo USUI, Kenji TAGUCHI, Hideki NAKAZATO and Katsukiyo MARUKAWA

51 Morphological Transition in the Highly Undercooled Fe-C Alloy Melt by the AC + DC levitation Technique

Takeshi FUKUDA, Takuya MIZUGUCHI, Tsutomu YOSHIMOTO, Daigo NAGAMATSU, Tomoya NAGIRA and Hideyuki YASUDA

16:05 Closing Address (Room1)

Chairperson: T. YOKOYAMA (Okayama University of Science)

Prof. Jiun-Jih MIAU

Room 2 (September 25, Tuesday)
13:00 – 14:20 A6-2 Applications Chairpersons: M. IGUCHI (Hokkaido University) and K. FUTASE (Yushin Co., Ltd)
27 Development of New Sponge Ball Cleaning System for Air Conditioning Facility Hideaki MONJI, Syun SASAKI, Motoji NAKAJIMA and Toshio MIDORIKAWA
40 Development of a Self-Cooling System Utilizing Waste Heat from Electronic Equipment Masaru ISHIZUKA, Shinji NAKAGAWA, Katsuhiro KOIZUMI, Tadashi HACHIGA and Hiroki ISHIDA
58 Effect of Gas Humidity on Material Temperature and Moisture Content Changes of Wet Spherical Porous Material in Humid Hot Air and Superheated Steam Tamotsu INOUE, Hiroyuki IYOTA, Tomoki TANAKA and Nobuya NISHIMURA
6 Wind Load on Solar Collector Models Kung-Ming CHUNG, Keh-Chin CHANG and Ji-Ping SHU
Coffee Break (20 min.)
14:40 – 15:40 A7-2 Flow Visualization II Chairperson: M. TAKEI (Nihon University)
79 Flow Visualization and PTV Analysis of Radial Inflow in a Closed Rotating Cylinder with One Fixed Stirrer-Type End Tat Thang NGUYEN, Hideharu TAKAHASHI, Hiroshige KIKURA and Masanori ARITOMI
62 Fuzzy Logic Based Particle Tracking Velocimetry Kazuo OHMI and Achyut SAPKOTA
35 Investigating the Sensitivity of PIV/ Interface Gradiometry to Estimated Wall Position, and Boundary Detection in Experimental Images Thien D. NGUYEN, John C. WELLS and Chuong V. NGUYEN
16:05 Closing Address (Room1) Chairperson: T. YOKOYAMA (Okayama University of Science) **Prof. Jiun-Jih MIAU**

Room 3 (September 25, Tuesday)
10:20 – 12:00 B5-3 Optical Methods Chairpersons: Y. MORITA (Kyushu University) and K. MORI (Takushoku University)
7 Extraction of Singularities in Isoclinic Phase Map for Isoclinic Phase Unwrapping in Digital Photoelasticity P. PINIT and E. UMEZAKI
11 Evaluation of an Isoclinic Unwrapping Method for Model with Singularity Y. NOMURA, P. PINIT and E. UMEZAKI
45 Strain Measurement Method for Tilted Planar Object by Phase-Shifting Digital Holography Combined with Grating Projection Method Kohhei SHIOTANI, Motoharu FUJIGAKI, Toru MATUI and Yoshiharu MORIMOTO
48 Investigation into Cause of Wavy Noise on Strain Distribution in Phase-Shifting Digital Holography Ryosuke KIDO, Motoharu FUJIGAKI, Toru MATUI and Yoshiharu MORIMOTO
54 3D Orientation Measurement of Fibrous Objects Based on Digital Holography Shigeru MURATA and Toshihide MORIKAWA
Lunch
13:00 – 14:00 C6-3 Nondestructive Evaluation Chairperson: M. FUJIGAKI (Wakayama University)
70 Non-Destructive Stress Analysis of Single-Crystalline and Polycrystalline Ceramics by Fluorescence Piezo-Spectroscopy using a Confocal Laser Probe Shuji SHIROYAMA, Yasufumi FUJISHIRO, Wenliang ZHU, Marco DELUCA and Giuseppe PEZZOTTI
42 Visualization of Fatigue Cracks in Aluminum Alloy by Computed Tomography with X-Ray Phase-Contrast Yuji SANO, Kiyotaka MASAKI, Koichi AKITA, Yasuo OCHI and Kentaro KAJIWARA
4 Nondestructive Detection of Damage in Woven Fabric Composite Laminates using Energy Index Method Huiwen HU and Jieming WANG
Coffee Break (20 min.)
14:20 – 15:20 B7-3 Material Characterization Chairperson: W-S. LEE (National Cheng Kung University)
10 Effects of Strain Rate on the Stress-Strain Hysteresis Loops of Several Engineering Plastics in Compression Takashi YOKOYAMA and Kenji NAKAI

33 Evaluation of Physical Properties of Inorganic-Based Composite Filled with Aluminum Particles Kiyomi MORI, Toshiaki KITAZAWA and Hiroji NAGATA
36 High Strain Rate Compression Behavior for Lead-Free SAC305 & Eutectic Sn63Pb37 Alloys S. T. JENQ, Hsuan-Hu CHANG, Yi-Shao LAI and Tsung-Yueh TSAI
16:05 Closing Address (Room1) Chairperson: T. YOKOYAMA (Okayama University of Science) **Prof. Jiun-Jih MIAU**