

ISM TMF 2023 Program

Nov. 27th Mon. (Day-1)

15:00	Registration
19:00	

Nov. 28th Tue. (Day-2)

8:30	Registration
	Room A
10:00	Opening Ceremony, Prof. Hiroshige Kikura
10:20	Plenary Lecture 1 Char: Masahiro Motosuke
	PL1: Temperature measurement using luminescence Satoshi Someya
11:20	Coffee Break
11:40	Room A
	Keynote Lecture 1 Char: Yasushi Saito
	KL1: Multiphase flow technology for organ engineering Hiromichi Obara
	Room B
	Keynote Lecture 2 Char: Hideki Murakawa
	KL2: Horizontal oil-gas-water three-phase flow characterization and identification with differential pressure and ultrasonic sensors Xuewei Shi, Chao Tan and Feng Dong
12:20	Lunch Time
13:20	Room A
	Session: Bio multiphase flow measurement techniques Session Chair: Tian Wan & Jiehui Ren
	A01: Sensitivity and phase response analysis of open MIT sensor arrays for cerebral hemorrhage detection Yixuan Chen, Chao Tan and Feng Dong
	A02: The impact of aeration on membrane fouling in a membrane bioreactor Tian Wan, Wen Cheng, Bo Liu, Min Wang, Jiehui Ren and Yuichi Murai
	A03: Visualization of stress field in channel wall using unsteady photoelastic method Shoto Sekiguchi, Kazuya U. Kobayashi, Yuta Kurashina, Kei Morikawa and Yoshiyuki Tagawa
	A04: Coupled CFD-PBM simulations of gas-liquid-solid three-phase turbulence characteristics in an aerobic fluidized bed biofilm reactor Jiehui Ren, Jiayao Xi, Wen Cheng, Tian Wan and Min Wang
	Room B
	Session: Fundamentals of multiphase flow measurement techniques and experimental methods 1 Session Chair: Masaru Shinozaki & Fuyang Yang
	B01: PIV measurement of wall jet produced from two-dimensional inclined impingement Suresh Sah, Shun Akutsu, Gentaro Takeda and Nao Ninomiya
	B02: Rising behavior of a single bubble containing aerosols in pool scrubbing Kiichi Kohno, Sasuke Kadoma and Akiko Kaneko
	B03: Estimation of dispersion state in LiCoO ₂ -CB-NMP/PVDF cathode slurry mixing by electrochemical impedance spectroscopy and electrical equivalent circuit (EIS-EEC) combination Taichi Kanamoto, Daisuke Kawashima, Yosephus Ardean Kurnianto Prayitno, Prima Asmara Sejati and Masahiro Takei
	B04: Molten salt-catalyzed methane decomposition for hydrogen production using NiBi-NaBr Bin Wang, Kehui Zeng, Kenji Tominaga, Zhao Sun and Zhiqiang Sun
	Room C
	Session: Optical, non-intrusive and other advanced measurement techniques 1 Session Chair: Tomonori Ihara & Junyou Zhang
	C01: Advancements in positron emission particle tracking: unveiling complex flow patterns in miniature multiphase flow devices Yu-Fen Chang, Boris V. Balakin and Alex C. Hoffmann
	C02: A novel method for measuring temperature and velocity fields with metal-coated optical fiber Masashi Sekine and Masahiro Furuya
	C03: Measurement of the stress-optic coefficient of birefringent fluids by rheo-optical measurement utilizing a rheometer William Kai Alexander Worby, Kento Nakamine, Yuto Yokoyama, Yuta Bando, Misa Kawaguchi, Hiroaki Kusuno and Yoshiyuki Tagawa
	C04: Tomographic PIV oblique volume observations with 3D data assimilation in a compressor stator cascade flow Haoqin Huang, Dapeng Zhang, Wu Zhou, Chang Tian, Mingxu Su and Xiaosu Cai
14:40	Coffee Break

15:00	Room A
	Session: Micro/nanoscale multiphase flow measurement techniques 1 Session Chair: Kosuke Hayashi & Lanlan Jiang
	A05: Visualization of inner flow of evaporating micro sessile droplet by means of micro-PIV Hao Cong, Tatsuya Kawaguchi and Takushi Saito
	A06: Study of hydrate phase transition in porous media during CO₂ geological sequestration Qingbin Liu, Lanlan Jiang and Yongchen Song
	A07: Visualization of the temperature distribution in the three-phase contact line region by the fluorescence thermometry Kenta Hatanaka, Muku Fukamachi, Yohei Sato and Tomohide Yabuki
A08: Microfluidic particle accumulation by AC electrokinetics Masahiro Motosuke, Ahmed Abdelghany and Yoshiyasu Ichikawa	
	Room B
	Session: Process tomography and flow visualization 1 Session Chair: Hideki Murakawa & Chuanlong Xu
	B05: Comparison of ultrasonic signal and imaging methods for measuring size and distribution of droplets and bubbles Sheng Tian, Chao Tan and Feng Dong
	B06: Two parameters evaluation of high-temperature electrical resistance tomography (htERT) applied to molten oxide So Segawa, Masato Ogawa, Yosephus A. K. Prayitno, Alief A. Luthfie, Noritaka Saito and Masahiro Takei
	B07: Spatiotemporal distribution imaging of solid fraction during molten salt crystallization process by 3D high temperature electrical resistance tomography (3D-htERT) Alief Avicenna Luthfie, So Segawa, Yosephus Ardean Kurnianto Prayitno, Noritaka Saito and Masahiro Takei
	B08: Flow behavior and shape change of bubbles in hydraulic oil Kechen Chen and Kazuaki Inaba
	Room C
	Session: Optical, non-intrusive and other advanced measurement techniques 2 Session Chair: Masahiro Furuya & Wu Zhou
	C05: Optimizing two-color pyrometry accuracy for incipient soot in flames: accounting for the scale effect of complex refractive index Junyou Zhang and Xinyu Du
	C06: Practical considerations on ultrasonic velocity profile measurement of hydrothermal vent fluid Tomonori Ihara and Tatsuya Hazuku
	C07: Experimental study of the effect of high-frequency pulsated gas flow on liquid motion behavior in an oscillation tube and the underlying mechanisms Peng Zhang, Zhengliang Huang, Yao Yang, Jiangyuan Sun, Yongrong Yang, Jingdai Wang and Congjing Ren
	C08: Analyzing effect of kaolin additive on combustion characteristics through FES for supporting intelligent operation of coal-fired boiler Yang Pu and Chun Lou
16:20	Coffee Break
16:40	Room A
	Session: Micro/nanoscale multiphase flow measurement techniques 2 Session Chair: Yuki Mizushima & Yandan Jiang
	A09: A thin thermal MEMS sensor for liquid film flow Koichi Murakami, Genta Miyake, Naoto Omura, Shunsuke Mizumi, Yoshiko Oya, Yuki Mizushima, Yoshiyasu Ichikawa and Masahiro Motosuke
	A10: Measurements of surfactant amount at the gas-liquid interface in contaminated Taylor flows in a microchannel Takumi Mori, Ryota Igarashi, Kosuke Hayashi, Ryo Kurimoto and Akio Tomiyama
	A11: Drag coefficients of particle-covered bubbles produced using a microchannel Kosuke Hayashi, Koya Chujo, Ryo Kurimoto and Akio Tomiyama
	Room B
	Session: Fundamentals of multiphase flow measurement techniques and experimental methods 2 Session Chair: Ryo Kurimoto & Zhang Cao
	B10: Fundamental study of fluid vibration in FCVS operation Hayato Tanno, Hideo Nagasaka and Hiroshige Kikura
	B11: Experimental study on aerosol removal using electrically charged spray scavenging Ruicong Xu, Avadhesh Kumar Sharma, Erdal Ozdemir, Shuichiro Miwa and Shunichi Suzuki
	B22: Enhancing laminar mixing with external electric field and Kelvin-Helmholtz instability Hailong Liu, Zhengfeng Huang, Junfeng Wang and Jingang Lu
	Room C
	Session: Optical, non-intrusive and other advanced measurement techniques 3 Session Chair: Hideharu Takahashi & Jun Yao
	C09: Gaussian fitting localization-based SART algorithm for three-dimensional particle field reconstruction with single light field camera Manfu Chen, Jian Li, Biao Zhang and Chuanlong Xu
	C10: Phase distribution measurement model of gas-liquid two-phase flow based on GBDT Sirui Zeng, Ming Kong and Liang Shan
	C11: Trajectory analysis of single and multiple air-entraining vortices in suction sump Souta Wai, K. Komatsu and K. Hirata
18:00	Welcome Reception
20:00	

Nov. 29th Wed. (Day-3)

8:30	Registration
	Room A
9:20	Plenary Lecture 2 Chair: Hiroshige Kikura PL2: A study on the particle flow systems from absolute dry to wet enough <u>Yongrong Yang</u>
10:20	Coffee Break
10:40	Room A Session: Novel sensors and measurement methods of multiphase systems 1 Session Chair: Tatsuya Kawaguchi & Feng Dong A12: In-line estimation of volume fraction based on emulsion rheology <u>Wenqing Zheng</u> , <u>Kohei Ohie</u> , <u>Yuji Tasaka</u> and <u>Yuichi Murai</u> A13: Effective viscosity of particle suspension under unsteady shear <u>Hiroshi Chin</u> , <u>Akihide Takano</u> , <u>Kohei Ohie</u> , <u>Yasufumi Horimoto</u> , <u>Hyun Jin Park</u> , <u>Yuji Tasaka</u> and <u>Yuichi Murai</u> A14: A new method for liquid slug length prediction of slug flow in small channels based on the contactless impedance detection (CID) technique <u>Chenxu Wang</u> , <u>Yandan Jiang</u> , <u>Haifeng Ji</u> , <u>Baoliang Wang</u> and <u>Zhiyao Huang</u> A15: Influence of A-site doping on dry reforming of methane catalyzed by Ni-doped LaCrO ₃ perovskite <u>Chencun Hao</u> , <u>Kehui Zeng</u> , <u>Kenji Tominaga</u> , <u>Zhao Sun</u> and <u>Zhiqiang Sun</u>
	Room B Session: Fundamentals of multiphase flow measurement techniques and experimental methods 3 Session Chair: Nao Ninomiya & Junfeng Wang B12: Evaluation of diffusion and cohesion of bubbles traveling in a turbulent boundary layer by a Lagrangian tracking imaging method <u>Teruaki Abe</u> , <u>Hyun Jin Park</u> , <u>Yasufumi Horimoto</u> , <u>Yuji Tasaka</u> and <u>Yuichi Murai</u> B13: Effects of surfactant on bubbly flow in narrow rectangular column <u>Soichiro Horita</u> , <u>Ryo Kurimoto</u> , <u>Kosuke Hayashi</u> and <u>Akio Tomiyama</u> B14: Measurement of wall-shear-stress and bubble behaviors in horizontal channel flow on poly-dispersed conditions <u>Kaito Shimomura</u> , <u>Yoshihiko Oishi</u> , <u>Hyun Jin Park</u> , <u>Yuji Tasaka</u> , <u>Yuichi Murai</u> and <u>Hideki Kawai</u> B15: Effect of fin arrangement on pressure drop characteristics of single-/two-phase flows in a finned rectangular channel <u>Shori Okunaka</u> , <u>Masaru Shinozaki</u> , <u>Naoya Odaira</u> , <u>Daisuke Ito</u> , <u>Kei Ito</u> and <u>Yasushi Saito</u>
	Room C Session: Optical, non-intrusive and other advanced measurement techniques 4 Session Chair: Masaaki Motozawa & Ming Kong C12: Particle movement mode effect on electrostatics <u>Jun Yao</u> , <u>Haoyu Liu</u> , <u>Yanlin Zhao</u> , <u>Liang Zhao</u> and <u>Chi-Hwa Wang</u> C13: On the image reconstruction algorithms for capacitively coupled electrical resistance tomography (CCERT) based on unsupervised clustering methods <u>Zheng Wang</u> , <u>Yandan Jiang</u> , <u>Haifeng Ji</u> , <u>Baoliang Wang</u> and <u>Zhiyao Huang</u> C14: Fundamental research on the nuclear reactor interior detection system using LIBS and air-coupled ultrasound <u>Yuan Chen</u> , <u>Hideharu Takahashi</u> and <u>Hiroshige Kikura</u> C15: Research on soil elemental analysis system using microchip laser-induced breakdown spectroscopy <u>Tomoaki Kaneko</u> , <u>Asahi Takayama</u> , <u>Yuan Chen</u> , <u>Masaki Endo</u> , <u>Hiroshige Kikura</u> and <u>Hideharu Takahashi</u>
12:00	Lunch Time
13:40	Room A Keynote Lecture 3 Chair: Yoshiyasu Ichikawa KL3: Shallow neural network-based calibration of dual-camera light field particle image velocimetry for three-dimensional flow measurement <u>Xiaoyu Zhu</u> , <u>Qi Wu</u> and <u>Chuanlong Xu</u>
	Room B Keynote Lecture 4 Chair: Masahiro Takei KL4: Measurement of microparticles using digital holography <u>Yohsuke Tanaka</u>
14:20	Coffee Break

14:40	Room A
	Session: Process tomography and flow visualization 2 Session Chair: Kazuaki Inaba & Chao Tan
	A16: Development of an evaluation method for bubbles behavior in a liquid metal using ultrasonic computed tomography <u>Tasuki Nakane</u> , Sana Maeda, Hideki Murakawa and Katsumi Sugimoto A17: Void fraction measurement of leakage flow at small clearance in refrigerant compressor by capacitance sensor Hibiki Kimura, Mitsuhiro Fukuta, Masaaki Motozawa and Wannarat Rakpakdee A18: Spatio-temporal void fraction visualization in air-water two phase flow in vertical, inclined, and horizontal pipes by combination of multiple current-voltage and machine learning (MCV-ML) Daisuke Saito, Yosephus Ardean Kurnianto Prayitno, Prima Asmara Sejati, Shuichiro Miwa and Masahiro Takei A19: Combustion temperature distribution monitoring based on dual modality electrical tomography <u>Yu Tian</u> , Zhang Cao and Lijun Xu
	Room B
16:00	Session: Fundamentals of multiphase flow measurement techniques and experimental methods 4 Session Chair: Daisuke Ito & Yu-Fen Chang
	B16: Measurement of silica-sand slurries in rotating flows by ultrasound velocity profiler <u>Sho Osanai</u> , Yoshihiko Oishi, Kenta Kusumoto, Naruki Shoji, Hiroshige Kikura and Hideki Kawai B17: Applicability verification of ultrasonic velocity profiler to multiphase flow in steel pipe Masataka Teshigawara, Naruki Shoji and Hiroshige Kikura B18: Fundamental study on solid-gas-liquid three-phase flow measurement using ultrasonic velocity profiler Seitaro Ueno, Naruki Shoji, Koji Teramoto, Hideki Kawai and Hiroshige Kikura B19: Catalytic methane decomposition using Ni₃Cr₂O₄ catalysts <u>Yunhan Gong</u> , Kehui Zeng, Kenji Tominaga, Zhao Sun and Zhiqiang Sun
	Room C
	Session: Information technology for multiphase flow & Intelligent instruments and monitoring systems Session Chair: Takuma Kawahara & Xiaoyu Zhu
17:00 20:30	C16: Monitoring and prediction of flow status in gas-water two-phase flow based on Gaussian process regression model <u>Wentao Wu</u> , Chao Tan, Shumei Zhang and Feng Dong C17: Zero-shot state identification for industrial gas-water two-phase flow with raw data of electrical resistance tomography <u>Linghan Li</u> , Xinyi Han, Shumei Zhang and Feng Dong C18: Graph embedding-based multilinear subspace analysis of state ensembles in gas-liquid flow <u>Zhao Li</u> , Chao Tan, Shumei Zhang and Feng Dong C19: Applying superimposed images for flow visualization in two-phase flow: development and applications Yuki Kamimura, Yutaka Namiki, Tatsuya Nakada, Naruki Shoji, Hideo Nagasaka and Hiroshige Kikura
	Group Photograph
	Banquet

Nov. 30th Thu. (Day-4)

8:30	Registration
	Room A
9:20	<p>Plenary Lecture 3 Chair: Tatsuya Hazuku</p> <p>PL3: Optical stress field measurement for fluids/soft materials: BOS and photoelastic measurement Yoshiyuki Tagawa</p>
10:20	Coffee Break
10:40	Room A
	<p>Session: Optical, non-intrusive and other advanced measurement techniques 5 Session Chair: Shigeo Hosokawa & Mao Ye</p> <p>A20: The global velocimetry of dense flashing spray basing on optical flow method Bufa Li, Junfeng Wang, Jiameng Tian and Haojie Xu</p> <p>A21: PTV-based Reynolds shear stress profiling of unsteady bubbly two-phase turbulent channel flows Yuichi Murai, Taiji Tanaka and Ryo Aoki</p> <p>A22: Compact laser absorption spectroscopy-based instrument for ammonia detection under high-temperature conditions Fei Wang and Haibin Cui</p> <p>A23: The acoustic, electrostatic and magnetic detection of two-phase flow parameters in chemical processes and its industrial application Congjing Ren, Zhengliang Huang, Yun Shuai, Yao Yang, Tao Sheng, Yongrong Yang and Jingdai Wang</p>
	Room B
	<p>Session: Fundamentals of multiphase flow measurement techniques and experimental methods 5 Session Chair: Akiko Kaneko & Hailong Liu</p> <p>B20: Long-term estimation of deposits on heating surface during boiling of long-life coolant Masaru Shinozaki, Daisuke Ito, Naoya Odaira, Kei Ito and Yasushi Saito</p> <p>B21: Bubble distribution in the vertical gas-liquid two-phase flow near joints by multiple-current voltage with convolutional neural network (MCV-CNN) Fuyang Yang, Yosephus Ardean Kurnianto Prayitno, Daisuke Saito, Prima Asmara Sejati and Masahiro Takei</p> <p>B23: Multiphase flow and heat transfer of electrospray droplets for cooling Haojie Xu, Junfeng Wang, Bufa Li and Tian Hu</p>
12:00	Lunch Time
13:00	Room A
	<p>Session: Optical, non-intrusive and other advanced measurement techniques 6 Session Chair: Masashi Sekine & Zhengliang Huang</p> <p>A24: Construction of hierarchical pore-network in zeolite catalyst particles using super-resolution single-molecule localization techniques Mingbin Gao, Yuli Liu and Mao Ye</p> <p>A25: Spatiotemporal filter velocimetry with arbitrary-shaped measurement region for accurate measurement in the vicinity of a boundary Shigeo Hosokawa</p>
	Room B
	<p>Session: Novel sensors and measurement methods of multiphase systems 2 Session Chair: Yuki Sakamoto & Zhiyao Huang</p> <p>B24: Conceptual design of cryogenic two-phase flow measurement technique Yuki Sakamoto, Shin Sakai and Takehiro Himeno</p> <p>B25: Development of measurement method for dense foam using an optical fiber probe Yuki Mizushima and Shimpei Saito</p> <p>B26: Reliability of total pressure loss measurement method using pump Q-H characteristics Takuma Kawahara, Feng Caining and Kazuyoshi Miyagawa</p>
14:20	Awards & Closing Ceremony
15:30	Mini Lab Tour (option)
16:30	