

OS5: Advanced Applications of Multi-functional Fluids

November 10, 2025

EX-Hall-3A

- OS5-1 **Evaluation of Proton Distribution in Layered Agarose Gels Using Triple-Barreled Glass Microelectrodes**
13:30-13:50 Tatsunori Kishimoto, Shoto Nagayasu, Kentaro Doi (Toyohashi University of Technology, Japan)
- OS5-2 **Numerical Simulation on Power Generation by Ion Transport in Carbon Nanotube Composite Paper Considering Electrode Redox Reaction**
13:50-14:10 Ryo Igari, Hidemasa Takana (Tohoku University, Japan)
- OS5-3 **Visco-dynamism of an Ionic Liquid Crystal and Variable Capacitance Function**
14:10-14:30 Changwoo Lee, Ryo Miyashita (University of Tsukuba, Japan), Reiji Kumai (High Energy Accelerator Research Organization (KEK), Japan), Hiromasa Goto (University of Tsukuba, Japan)
- OS5-4 **Influence of Localized Magnetic Fields on Thermal Performance in Finned Microchannels: A Numerical Insight**
14:30-14:50 Shabbir Ahmad (Universidade Federal do Rio Grande, Brazil), Kashif Ali (Muhammad Nawaz Sharif University of Engineering and Technology, Pakistan), Hidemasa Takana (Tohoku University, Japan)
- 15:00-15:15 BREAK
- OS5-5 **Collapse Process of Gas Pore inside Metal Liquid Droplet in Flow Field**
15:15-15:35 Joe Yoshikawa, Keisuke Itoh (Industrial Technology Institute, Miyagi Prefectural Government, Japan), Hidemasa Takana (Tohoku University, Japan)
- OS5-6 **Fluid Dynamics Orientation of Liquid Crystal and Electro-Chemical Polymerization**
15:35-15:55 Aoi Tokutake, Hiromasa Goto (University of Tsukuba, Japan)
- OS5-7 **Electrochemical Polymerization in Liquid Crystal for Producing Optically Active Furan-Based Polymers**
15:55-16:15 Ikiru Otake, Hiromasa Goto (University of Tsukuba, Japan)
- OS5-8 **Helix Orientation of Fluid Liquid Crystal and Electrochemical Polymerization for Obtaining Conducting Polymer/TCNQ as a Charge Transfer Type Optically Active Electrochromic Polymer**
16:15-16:35 Ryo Kawakami, Hiromasa Goto (University of Tsukuba, Japan)
- 16:45-17:00 BREAK
- OS5-9 **Bénard-Rayleigh Convection Imprinted Electro-Chemical Polymerization in Liquid Crystal**
17:00-17:20 Aoi Tokutake, Hiromasa Goto (University of Tsukuba, Japan)

- OS5-10 **Synthesis of PEDOT Analogue by Plasma Polymerization Inside a Bubble and Its Application to Conductive Cellulose Composite**
 17:20-17:40 Satoru Kawai, Yutaka Kaneko, Hidemasa Takana (Tohoku University, Japan)
- OS5-11 **Magneto-dynamics and Electric Function of Ionic Liquid Crystal Triode Device**
 17:40-18:00 Changwoo Lee, Hiromasa Goto (University of Tsukuba, Japan)
- OS5-12 **Polymer Liquid Concentration Chromism**
 18:00-18:20 Ikiru Otaka, Hiromasa Goto (University of Tsukuba, Japan)

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- OS5-13 **Study on Performance Characterization and Physical Mechanism on Dielectric-Barrier-Discharge Plasma Synthetic Jet Actuator (*Invited*)**
 9:20-9:50 Hiroyuki Nishida, Itsuki Fukumori, Yuki Ishii (Tokyo University of Agriculture and Technology, Japan), Atsushi Komuro (National Institute of Advanced Industrial Science and Technology, Japan)
- OS5-14 **Assessment of a Shock-Based Flow Reconstruction Method in Supersonic Plasma Jets via CFD**
 9:50-10:10 Yosheph Yang (Kangwon National University, Republic of Korea), Moon Won Song (Jeonbuk National University, Republic of Korea), Hojun You, Jae Gang Kim (Sejong University, Republic of Korea), Jun-Ho Seo (Jeonbuk National University, Republic of Korea)
- OS5-15 **A Convertible Plasma Torch with Hollow Electrodes and Reverse Polarity Discharge Structure**
 10:10-10:30 Sang-Yun Baek, Nam-Gi Lee, Dong-Hyun Lee, Sun-Woo Kim, Jun-Ho Seo (Jeonbuk National University, Republic of Korea)
- 10:30-10:45 BREAK
- OS5-16 **Experimental Demonstration of Detonation-Driven MHD Power Generation with Potassium Chloride Seeding**
 10:45-11:05 Kensho Noda, Akira Kawasaki (Shizuoka University, Japan)
- OS5-17 **Numerical Simulation of Taylor-Couette Flow in a Co-axial MHD Energy Conversion Device**
 11:05-11:25 Takahiro Hasebe, Katsumi Namba, Takayasu Fujino (University of Tsukuba, Japan), Hidemasa Takana (Tohoku University, Japan), Hiromichi Kobayashi (Keio University, Japan)
- OS5-18 **Development of Air Pressure Control System which Applied the EHD Pump**
 11:25-11:45 Hayato Murata (Tokyo Denki University, Japan), Sumitaka Terasaka, Takeharu Shimookawa (Sanyo Metal Industry Co., Ltd., Japan), Akemi Nagatsuma (Nagatsuma living Co., Ltd., Japan), Hidenobu Anzai (NZAI Co., Ltd., Japan), Kazuyuki Mitsui (Tokyo Denki University, Japan)
- OS5-19 **Influence of Droplet Conductivity and Pulse Voltage Polarity on Electrostatic Precipitation**
 11:45-12:05 Tasuku Hatakeyama, Katsuyuki Takahashi, Koichi Takaki (Iwate University, Japan), Akinori Zukeran (Kanagawa Institute of Technology, Japan), Shingo Tsuge, Masao Nonoyama, Yuichi Hayashi (Rinnai Corporation, Japan)

- 12:15-13:30 BREAK
- OS5-20 **Preparation of Spherical Titanium Powders by Using a DC Plasma Torch with Hollow Electrodes and Reverse Polarity Discharge Structure**
 13:30-13:50 Sun-Woo Kim, Dong-Hyun Lee, Sang-Yun Baek, Nam-Gi Lee, Shi-Young Yang, Jun-Ho Seo (Jeonbuk National University, Republic of Korea)
- OS5-21 **Synthesis of Carbon Catalyst with Large Surface Area Using Liquid Plasma with Ultrasonic Cavitation**
 13:50-14:10 Hayato Ota, Akira Shigematsu, Manabu Kodama (Institute of Science Tokyo, Japan), Oi Lun Li (Pusan National University, Republic of Korea), Nozomi Takeuchi (Institute of Science Tokyo, Japan), Hidemasa Takana (Tohoku University, Japan)
- OS5-22 **Flow-Induced Reactivity Amplification in a CuS/ZnS/SnS-Based Sonocatalytic Interface for Aqueous Pollutant Degradation**
 14:10-14:30 Krishna P. Sharma, Miyeon Shin, Tae-Kyu Kwon, Man-Young Kim, Changho Yu (Jeonbuk National University, Republic of Korea)
- OS5-23 **Sonic Resonance for Polymer Synthesis**
 14:30-14:50 Aoi Tokutake, Hiroto Nakamura, Hiromasa Goto (University of Tsukuba, Japan)
- 15:00-15:15 BREAK
- OS5-24 **Scalable and Sustainable Production of High-Performance Bio-Based Fibers**
 15:15-15:35 Anthony B. Dichiara, Dylan D. Edmundson (University of Washington, USA), Wakana Hira, Yutaka Kaneko, Hidemasa Takana (Tohoku University, Japan)
- OS5-25 **Single Particle Sensing Enhanced by the Combination of Electrostatic Force and Pressure-Driven Flow**
 15:35-15:55 Sojiro Ochi, Tatsunori Kishimoto, Kentaro Doi (Toyohashi University of Technology, Japan)
- OS5-26 **Modification of Suppressed Heat Transfer of Viscoelastic Fluid Flow in Rectangular Duct with 2 of Aspect Ratio**
 15:55-16:15 Tadayuki Kadowaki, Masaaki Motozawa, Mitsuhiro Fukuta, Wannarat Rakpakdee (Shizuoka University, Japan), Weerachai Chaiworapuek (Kasetsart University, Thailand)
- OS5-27 **Change in Drag Reducing Effect and Rheological Property of Surfactant Solution by Adding Cellulose Nano-fiber**
 16:15-16:35 Masaaki Motozawa, Yukimasa Ueda (Shizuoka University, Japan), Hidemasa Takana (Tohoku University, Japan)