

Program of the 21st ILASS–Japan Symposium

Venue

West Building 9, Tokyo Institute of Technology Ookayama Campus

http://www.titech.ac.jp/about/campus/o_map.html?id=03

Room A : Room 221 (2nd floor)

Room B : Room 217 (2nd floor)

Invited Lecture

December 17 (Monday) 13:30–14:30 Room A

Effect of the internal nozzle flow on liquid jet break-up of the elliptical nozzle

Professor Jung Goo Hong (Kyungpook National University)

Special Lecture

December 18 (Tuesday) 13:30–14:30 Room A

A Discussion on the Mechanism of Diesel Spray Flame

Professor Hidenori KOSAKA (Tokyo Institute of Technology)

Organized Sessions and Organizers

① Application of Sprays to Environmental Techniques

Professor Yoshiyuki SHIRAKAWA, Doshisha University

② Numerical Simulation

Associate Professor Akira SOU, Kobe University

③ Measurement Techniques

Professor Fumiteru AKAMATSU, Osaka University

Banquet

December 17, Monday 18:00–19:30

Table of Lectures and Technical Sessions

December 17 (Monday)

Time	Room A (221)	Room B (217)
9 : 00—	Registration	
9 : 30—9 : 40	Opening Ceremony (Room A)	
9 : 40—10 : 55	A1 : Numerical Simulation I Chair: Yasuo MORIYOSHI (Chiba Univ.) (OS②)	B1 : Particle Creation I Chair: Motohiro OSHIMA (Fukui Univ. of Tech.) (OS①)
10 : 55—11 : 05	Break	
11 : 05—12 : 20	A2 : Numerical Simulation II Chair: Daisuke TSURU (Kyushu Univ.) (OS②)	B2 : Particle Creation II Chair: Yoshiyuki SHIRAKAWA (Doshisha Univ.) (OS①)
12 : 20—13 : 30	Lunch	
13 : 30—14 : 30	Invited Lecture (Room A) Effect of the internal nozzle flow on liquid jet break-up of the elliptical nozzle Professor Jung Goo Hong (Kyungpook National University)	
14 : 30—14 : 40	Break	
14 : 40—15 : 55	A3 : Numerical Simulation III Chair: Akira SOU (Kobe Univ.) (OS②)	B3 : Gasoline/Diesel Spray Chair: Tsuneaki ISHIMA (Gurma Univ.) (GS)
15 : 55—16 : 05	Break	
16 : 05—17 : 20	A4 : Measurement Techniques I Chair: Nobuyuki KAWAHARA (Okayama Univ.) (OS③)	B4 : Spray Behavior I Chair: Takashi SUZUKI (Toyoashi Univ. of Tech.) (GS)
17 : 20—17 : 30	Break	
17 : 30—18 : 00	ILASS-Japan General Assembly Meeting (Room A)	
18 : 00—19 : 30	Banquet	

December 18 (Tuesday)

Time	Room A (221)	Room B (217)
9:00—	Registration	
9 : 30—11 : 10	A5 : Mixture formation/Cavitation Chair: Keiya NISHIDA (Hiroshima Univ.) (GS)	B5 : Spray Combustion Chair: Hiroshi NOMURA (Nihon Univ.) (GS)
11 : 10—11 : 20	Break	
11 : 20—12 : 10	A6 : Measurement Techniques II Chair: Jun HAYASHI (Osaka Univ.) (OS③)	B6 : Spray Behavior II Chair: Norihiko IKI (AIST) (GS)
12 : 10—13 : 30	Lunch	
13 : 30—14 : 30	Special Lecture (Room A) A Discussion on the Mechanism of Diesel Spray Flame Hidenori KOSAKA (Tokyo Institute of Technology)	
14 : 30—14 : 40	Break	
14 : 40—15 : 55	A7 : Measurement Techniques III Chair: Fumiteru AKAMATSU (Osaka Univ.) (OS③)	

15 : 55—16 : 05	Break
16 : 05—16 : 25	Award Ceremony of Best Presentation (Room A)

Program of Technical Sessions

【General Report】 , (Prompt Report), *Speaker
Presentation 15min / Question 10min

December 17 (Monday)

A1 : Numerical Simulation (OS②) December 17 (Monday) 9:40–10:55 Room A

Chair: Yasuo MORIYOSHI (Chiba Univ.)

【A-1】 Prediction of Diesel Spray with Super High Injection Pressure under High Atmosphere Density by Use of Experimental Formula and Numerical Simulation (1st Report: Validity of the Experimental Formula concerning the Spray Characteristics)

*Koji KITAGUCHI, Masashi MATSUMOTO (Doshisha Univ.), Ryouta MINAMINO, Takao KAWABE, Hiroshi OMOTE, Shusuke OKADA (Yanmar Co., Ltd), Jiro SENDA (Doshisha Univ.)

【A-2】 Prediction of Diesel Spray with Super High Injection Pressure under High Atmosphere Density by Use of Experimental Formula and Numerical Simulation (2nd Report: Verification of the Spray Characteristics by Numerical Simulation)

*Koji KITAGUCHI, Masashi MATSUMOTO (Doshisha Univ.), Ryouta MINAMINO, Takao KAWABE, Hiroshi OMOTE, Shusuke OKADA (Yanmar Co., Ltd), Jiro SENDA (Doshisha Univ.)

【A-3】 Numerical Analysis of Wall Impingement Spray with LES

*Tatsunori FUJII, Koji KITAGUCHI (Doshisha Univ.), Tsukasa HORI (Osaka Univ.), Jiro SENDA (Doshisha Univ.)

A2 : Numerical Simulation II (OS②) December 17 (Monday) 11:05–12:20 Room A

Chair: Daisuke TSURU (Kyushu Univ.)

【A-4】 Numerical Analysis of Ethanol-Gasoline Blend Fuel Spray

*Yusuke KIMOTO, Yoshimitsu KOBASHI, Satoshi KATO (Kanazawa Institute of Technology)

【A-5】 Detailed Simulation of Cavitation in an Injector

*Takumi FUKUDA, Yusuke KINUGAWA, Akira SOU (Kobe Univ.)

【A-6】 Evaporation and Mixture Formation Characteristics of Ethanol and Gasoline Fuel Spray under High Temperature and High Pressure in D.I. Gasoline Engine (Comparison of each Characteristic by CFD)

*Kiyotaka SATO, Koji SHINSHIME, Yoshitaka WADA (Mazda Motor Co., Ltd), Kenta Kitamitsu (Mazda E&T Co., Ltd), Masaharu Chato, Keiya Nishida (Hiroshima Univ.)

A3 : Numerical Simulation III (OS②) December 17 (Monday) 14:40–15:55 Room A

Chair: Akira SOU (Kobe Univ.)

【A-7】 Flow Characteristics of Microjet Injected for Enhancing Impingement Atomization

*Chihiro INOUE, Toshinori WATANABE, Takehiro HIMENO, Seiji UZAWA (The Univ. of Tokyo)

【A-8】 Detailed Numerical Simulation of Fuel Vapor Mixing and Group Combustion Processes in a Dense Liquid Spray

*Junji SHINJO (JAXA), Akira UMEMURA (Nagoya Univ.)

【A-9】 Validation of Spray Models on Visualization Results in High-pressure Circuit Wind Tunnel (Effects of Turbulence Flow after Perforated Plate on Spray Propagation Process)

*Hisako KATO, Daisuke TSURU, Hiroshi TAJIMA (Kyushu Univ.)

A4 : Measurement Techniques I (OS③) December 17 (Monday) 16:05–17:20 Room A

Chair: Nobuyuki KAWAHARA (Okayama Univ.)

[A-10] Temperature Measurement of Evaporating Droplet of Palm Methyl Ester and Light Oil at High-Temperatures

*Kentaro KANEKO, Hiroshi NOMURA (Nihon Univ.), Nozomu HASHIMOTO (CRIEPI)

[A-11] A Measurement Method of Dynamic Surface Tension using the Profile of Capillary Jet

*Tatsuro WAKIMOTO, Kenji KATOH (Osaka City Univ.)

[A-12] A Study on Estimation of the Adhered Fuel Ratio of Wall-impinging Spray

*Ryo MASUDA, Kiyomi KAWAMURA, Makoto Nagaoka (Toyota Central R&D Labs., Inc), Takeshi Mizobuchi (Denso Corporation), Hisao SUZUKI (Toyota Motor Corporation),

B1 : Particle Creation I (OS①) December 17 (Monday) 9:40–10:55 Room B

Chair: Motohiro OSHIMA (Fukui Univ. of Technology)

[B-1] Development of Process for Advanced Particle Using Micro Reactor

*Taichi YANO, Yoshiyuki SHIRAKAWA, Atuko SHIMOSAKA, Jusuke HIDAKA (Doshisha Univ.)

[B-2] Development of Preparation Process for Core-Shell Type Amino Acid Particles

*Shuto MURATA, Yoshiyuki SHIRAKAWA, Atuko SHIMOSAKA, Jusuke HIDAKA (Doshisha Univ.)

[B-3] Electrostatic Spray Deposition of Electrolyte Material onto a Porosity-Increased Fuel Electrode of Solid Oxide Fuel Cell

*Naoki CHIKU, Hiroshi NOMURA (Nihon Univ.), Hitoshi HARA, Tomonori ASANO (NORITZ Corporation)

B2 : Particle Creation II (OS①) December 17 (Monday) 11:05–11:55 Room B

Chair: Yoshiyuki SHIRAKAWA (Doshisha Univ.)

[B-4] Core-Shell Oxide Particles Prepared by Flame Spray Pyrolysis

*Takeshi YOKOMORI, Hiroshi HASEGAWA, Takuro KUSUNOKI, Toshihisa UEDA (Keio Univ.)

[B-5] Development of Flame Synthesis Method for Nanoparticles by Flash Boiling Spray

*Masaya MATSUSHITA (Doshisha Univ.), Motohiro OSHIMA (Fukui Univ. of Technology), Jiro SENDA (Doshisha Univ.), Kozo ISHIDA (Horiba Ltd)

B3 : Gasoline/Diesel Spray (GS) December 17 (Monday) 14:40–15:55 Room B

Chair: Tsuneaki ISHIMA (Gunma Univ.)

[B-6] Effect of Injection Period on Behavior of Droplets in Diesel Spray

*Takuya NODA, Keisuke KOMADA, Daisaku SAKAGUCHI, Hironobu UEKI, Masahiro ISHIDA (Nagasaki Univ.)

[B-7] Comparative Study of Needle Motion and Exit Flow of Single- and Multi-Hole Diesel Injectors

*Seoksu MOON, Taku TSUJIMURA (AIST), Naoki KURIMOTO, Yoshiaki NISHIJIMA (Denso Corporation)

[B-8] Effects of Fuel Spray Atomization on Cold-Start of an SI Gasoline Engine

*Ryota ADACHI, Ippei KOMORI, Mikiya ARAKI, Seiichi SHIGA (Gunma Univ.), Naoya KANEKO, Tomojiro SUGIMOTO (Toyota Motor Corporation)

B4 : Spray Behavior I (GS) December 17 (Monday) 16:05–17:20 Room B

Chair: Takashi SUZUKI (ToyoHashi Univ. of Technology)

- [B-9] Effect of Assist Air on Characteristics of Crude Jatropa Oil Spray Injected by a Pressure-Swirl Atomizer**
*Yong FAN, Nozomu HASHIMOTO, Hiroyuki NISHIDA, Yasushi OZAWA (CRIEPI)
- [B-10] Atomization Mechanism of High Speed Rotary Atomizer with Grooves**
*Toshiki HANEDA, Yousuke HATAYAMA, Minori SHIROTA, Takao INAMURA (Hirosaki Univ.), Masatoshi DAIKOKU (Hachinohe Institute of Technology), Tatsuya SOMA (Tohoku Univ.)
- [B-11] Relation between the Oscillation of Liquid Jet and Mechanical Vibration of Injection Post**
*Shota SHINDO, Minori SHIROTA, Takao INAMURA (Hirosaku Univ.), Yoshio NUNOME (JAXA)

December 18 (Tuesday)

A5 : Mixture formation/Cavitation (GS) December 18 (Tuesday) 9:30–11:10 Room A

Chair: Keiya NISHIDA (Hiroshima Univ.)

- [A-13] Deformation of Liquid Bubbles Due to Airstreams**
*Teruhiko YOSHIDA (Teikyo Univ.)
- [A-14] PIV Measurement of Flow Field of Spray and Surrounding Gas (Comparison between Non-Evaporating Spray and Evaporating Spray)**
*Jingyu ZHU, Takumi UEMURA, Keiya NISHIDA, Yoichi OGATA (Hiroshima Univ.)
- [A-15] String Cavitation in an Injector**
*Akira SOU, Raditya Hendra PRATAMA, Yusuke KIBAYASHI (Kobe Univ.)
- [A-16] Impact Acceleration by Cavitation Bubble Collapse and Liquid Jet Behavior**
*Yuka YASUTOMI, Yoshiya INOUE, Masashi MATSUMOTO (Doshisha Univ.), Yoshimitsu KOBASHI (Kanazawa Institute of Technology), Eriko MATSUMURA, Mutsumi KANDA (Toyota Motor Corporation), Jiro SENDA (Doshisha Univ.)

A6 : Measurement Techniques II (OS③) December 18 (Tuesday) 11:20–12:10 Room A

Chair: Jun HAYASHI (Osaka Univ.)

- [A-17] Spatio-Angular Resolution of Light Field Camera for the Dispersed Particle in Fluid Flow**
*Tatsuya KAWAGUCHI (Tokyo Institute of Technology), Alex TAYLOR, Yannis HARDALUPAS (Imperial College)
- [A-18] Measurement Accuracy of Dynamic Interferometric Laser Imaging for Droplet Sizing**
*Tatsuya KAWAGUCHI, Takushi SAITO, Isao SATOH (Tokyo Institute of Technology)

A7 : Measurement Techniques III (OS③) December 18 (Tuesday) 14:40–15:55 Room A

Chair: Fumiteru AKAMATSU (Osaka Univ.)

- [A-19] PIV Measurement of Vapor Phase Flow in Gasoline Spray by Laser Sheet/Silicon Oil Scattering Technique**
Masaharu CHATO, *Keita PAKU, Yuji HARADA, Tatsuya FUJIKAWA, Youichi OGATA, Keiya NISHIDA (Hiroshima Univ.)
- [A-20] Measurement of Velocity Field Inside Diesel Spray under High Ambient Gas Density Condition**
*Kazuma SUGAWARA, Wataru OCHIAI, Yoshio ZAMA, Tomohiko FURUHATA, Masataka ARAI (Gunma Univ.)
- [A-21] Measurement of Evaporation Process of a PFI Spray Impinged onto a Wall**
*Yasuo MORIYOSHI (Chiba Univ.), Tomohiro YAMADA (former Chiba Univ.), Gaku SATO (Keihin Corporation)

B5 : Spray Combustion (GS) December 18 (Tuesday) 9:30–11:10 Room B

Chair: Hiroshi NOMURA (Nihon Univ.)

【B-12】 Laser Ignition Characteristics in Ethanol Spray

Nobuyuki KAWAHARA, Eiji TOMITA, *Yousuke TANIGUCHI (Okayama Univ.)

【B-13】 Effects of Forced Flow Fluctuations on Stagnation-flow Premixed-spray Flame

*Morihisa SAKAMOTO, Yuki TSUDA, Hiroyasu SAITOH (Shibaura Institute of Technology)

【B-14】 Study of the Fire Extinguishing Mechanism of Water Spray on Counterflow Diffusion Flame

*Takafumi TADO, Takehiko SEO, Masato MIKAMI (Yamaguchi Univ.)

【B-15】 Study on Role of Droplet in Characteristics of Laser-Induced Plasma Generation in Spray

*Takehiko SEO, Yasuhiro HISATOMI, Masato MIKAMI (Yamaguchi Univ.)

B6 : Spray Behavior II (GS) December 18 (Tuesday) 11:20–12:10 Room B

Chair: Norihiko IKI (AIST)

【B-16】 Observation of Water Droplet in Non-Equilibrium Plasma

*Shogo KUNIOKA, Hiroshi ENOMOTO, Noboru HIEDA (Kanazawa Univ.)

【B-17】 The Effects of Liquid Viscosity upon the Atomization Characteristics of Conical Liquid-Sheet Jet in High-Pressure Gas Environment

*Takashi SUZUKI (Toyohashi Univ. of Technology), Tsubasa ARAI (AIHO Corporation), Hiroyuki NISHIDA, Nozomu HASHIMOTO, Yasushi OZAWA (CRIEPI)