

Program of the 33rd ILASS-Japan Symposium

Venue

International Conference Center Hiroshima

(1-5 Nakajima-cho, Naka-ku, Hiroshima City, Hiroshima Prefecture 730-0811 (Inside Hiroshima Peace Memorial Park))

Special Lecture

Tuesday, December 17, 2024, 13:10 - 14:10

(Large Conference Room "Dahlia" International Conference Center)

Chair: Yoshimitsu Kobashi (Okayama University)

「Ongoing works to clarify the effect of bubble on flash boiling spray
: theory, test-rig, and optical investigations」

Prof. Hyunchang Lee (Kyungnam University, KOREA)

Invited Lecture

Wednesday, December 18, 2024, 15:20 - 16:20

(Large Conference Room "Dahlia" International Conference Center)

Chair: Yoichi Ogata (Hiroshima University)

「Evaporation, Mixture Formation and Combustion of Engine Fuel Spray
- Developing Optical Diagnostics, Understanding Phenomena -」

Prof. Keiya Nishida (Professor Emeritus, Hiroshima University)

Technical Discussion Meeting

Tuesday, December 17, 2024, 18:10 - 19:40

((Small Conference Room "Ran," International Conference Center))

Table of Lectures and Technical sessions

Tuesday, December 17, 2024

Time	Room A	Room B	Exhibition
8:45-	Registration		
9:45-10:00	Opening (Room A)		
10:00-11:40	A11 : Gasoline Spray (3 Pres.)	B11 : Atomization Process/ Two-phase flow (4 Pres.)	Exhibition & Technical Consultation
11:40-13:10	Lunch		
13:10-14:10	Special lecture (Large Conference Room "Dahlia")		
	「Ongoing works to clarify the effect of bubble on flash boiling spray : theory, test-rig, and optical investigations」 Prof. Hyunchang Lee (Kyungnam University, KOREA)		
14:10-14:20	Break		Exhibition & Technical Consultation
14:20-16:00	A12 : Diesel Spray (4 Pres.)	B12 : Measurement I (4 Pres.)	
16:00-16:10	Break		
16:10-17:30	ILASS-Japan General Assembly Meeting (Room A)		

Wednesday, December 18, 2024

Time	Room A	Room B	Exhibition
8:30-	Registration		
9:00-10:40	A21 : Atomization Process/ Equipment (3 Pres.)	B21 : Atomization Process/ Model (4 Pres.)	Exhibition & Technical Consultation
10:40-10:50	Break		
10:50-12:30	A22 : Wall Impingement/ Evaporation (4 Pres.)	B22 : Atomization Process/ Twin fluid (4 Pres.)	
12:30-13:30	Lunch		
13:30-15:10	A23 : Alternative Fuel (4 Pres.)	B23 : Measurement II (3 Pres.)	
15:10-15:20	Break		
15:20-16:20	Invited lecture (Large Conference Room "Dahlia")		
	「Evaporation, Mixture Formation and Combustion of Engine Fuel Spray - Developing Optical Diagnostics, Understanding Phenomena -」 Keiya Nishida (Professor Emeritus, Hiroshima University)		
16:20-16:40	Closing (Large Conference Room "Dahlia")		
16:40-17:00	Award Ceremony of Best Presentations (Large Conference Room "Dahlia")		

Program of Technical sessions

※ indicates the presenter.

The presentation time is 25 minutes (15 minutes for the presentation + 10 minutes for Q&A and discussion).

If the author shares the same affiliation as the preceding co-author, the affiliation name is omitted.

Tuesday, December 17, 2024

A11 : Gasoline Spray 10:00-11:15 Room A

Chair : Tomoaki Yatsufusa (Hiroshima Inst. Tech.)

- 【A111】 Measurement of fuel liquid film attached to the wall in a gasoline engine using a capacitive sensor
※Takeru Nakajima (Chiba Univ.), Tatsuya Kuboyama, Yasuo Moriyoshi, Osamu Nakabeppu (Meiji Univ.), Satoshi Takayama (Suzuki Motor Corporation)
- 【A112】 Relation between behavior of liquid film on an intake valve and air flow velocity in a valve gap
※Reo Kushida (Gunma Univ.), Yoshio Zama
- 【A113】 Simulation of Spray Formation Process using a New Model considering Internal Nozzle Flow for Direct Injection Spark Ignition Engines
※Kohei Akaishi (Doshisha Univ.), Dai Matsuda, Kanako Nishimura, Eriko Matsumura, Jiro Senda

A12 : Diesel Spray 14:20-16:00 Room A

Chair : Motohiro Oshima (Toyama Inst. Tech. Univ.)

- 【A121】 Experimental analysis of primary breakup near the nozzle of diesel spray by ultra high-speed and high-resolution imaging
※Koki Tanimura (Okayama Univ.), Yoshimitsu Kobashi, Nobuyuki Kawahara
- 【A122】 Modeling the primary breakup of diesel spray considering cavitation in the nozzle and aerodynamic effect
※Yuto Hirohama (Okayama Univ.), Yoshimitsu Kobashi, Nobuyuki Kawahara
- 【A123】 Model Development on Circulation in Diesel Fuel Injector
※Kohei Takeshita (Kobe Univ.), Akira Sou, Yoshitaka Wada (Mazda Motor Corporation), Yoshiharu Ueki
- 【A124】 Study on flow characteristics of an unsteady spray flame after impingement on a wall
※Koki Hoshino (Gunma Univ.), Yoshio Zama, Shinya Furukawa (Isuzu Central Research Institute Co., Ltd.), Tomoyuki Mukayama

B11 : Atomization process/Two-phase flow 10:00-11:40 Room B

Chair : Chihiro Inoue (Kyushu Univ.)

- 【B111】 Estimation of particle size frequency distribution of superheated water spray injected from a fan spray nozzles.
※Yukihiro Kaneko (Tokyo City Univ.), Rikio Watanabe
- 【B112】 Study on disruptive evaporation behavior of n-decane/ethanol fine droplet
※Shion Ando (Kyushu Univ.), Jaeseok Woo, Kosei Kashima, Osamu Moriue
- 【B113】 Numerical Simulation of a Bubble Growth inside a Droplet at Vacuum Ambient Pressure
※Motohiro Oshima (Toyama Inst. Tech. Univ.), Koki Ichikawa
- 【B114】 Effect of the heated wall on the cavitation phenomenon inside a 2D nozzle
※Ippei Oshima (Tohoku Univ.), Noritsune Kawaharada (National Traffic Safety and Environment Laboratory)

B12 : Measurement I 14:20-16:00 Room B

Chair : Yoshihiro Kobayashi (Tokyo Denki Univ.)

- 【B121】 Removal of ash deposition from solid surface by impingement of droplets and ligaments in jet
※ Yuma Shinbo (Yamagata Univ.), Teppei Yamaguchi, Xing Wenjing, Raut Sushil (Hiroshima Univ.), Kazunori Sato (Formerly Hiroshima Univ.)
- 【B122】 Three-dimensional measurement method for nonlinear objects using photogrammetry
※ Ayuki Minami (Kyushu Inst. Tech.), Minoru Shiota (Hirosaki Univ.), Masato Yamamura (Kyushu Inst. Tech.), Yoshihide Mawatari, Yasuhiro Saito
- 【B123】 Visualization of droplet splash process deviating from air-flow and characteristic of splashed droplet forming li
※ Ippei Oshima (Tohoku Univ.), Hiroyasu Saito (Shibaura Inst. Tech.)
- 【B124】 High-speed imaging of liquid metal atomization process inside a supersonic gas jet
※ Naoki Orita (Kyushu Univ.), Taikou Tanimoto, Zhenying Wang, Chihiro Inoue, Jun Horiuchi (JFE Steel Corporation), Takuya Takashita, Kazutoyo Yamada (Iwate Univ.), Noriharu Yodoshi (Kyushu Univ.)

Wednesday, December 18, 2024

A21 : Atomization process/Equipment 9:00-10:15 Room A

Chair : Saitoh Hiroyasu (Shibaura Inst. Tech.)

- 【A211】 Spray Characteristics of Ethanol-Blended Gasoline for Port Fuel Injection under Low Temperature Conditions
※ Masato Yoshida (Daihatsu Motor Co., Ltd.), Tsuguhito Hirobe, Yasuhisa Ono, Tomonori Kuroki, Yukihide Nagano
- 【A212】 Measurement of Helium Jet Concentration Distribution by Rayleigh Scattering
※ Tsubasa Sato (Doshisha Univ.), Kanako Nishimura, Eriko Matsumura, Jiro Senda, Kenji Hiraoka (Yanmar Holdings Co., Ltd.), Kazuyuki Koda
- 【A213】 Effect of Fuel Fluid Properties on Internal Flow in Diesel Fuel Injector and Liquid Jet
※ Ryotaro Shiki (Kobe Univ.), Akira Sou, Yoshitaka Wada (Mazda Motor Corporation), Yoshiharu Ueki

A22 : Wall Impingement/Evaporation 10:50-12:30 Room A

Chair : Tomoaki Yatsufusa (Hiroshima Inst. Tech.)

- 【A221】 Impingement behavior of two-fluid sprays on walls with different wettability
※ Teppei Yamaguchi (Yamagata Univ.), Yuma Shimbo, Xing Wenjing, Raut Sushil (Hiroshima Univ.), Kazunori Sato (Formerly Hiroshima Univ.)
- 【A222】 Study of Spray Impingement Model on Lubricating Oil Film in Diesel Engines
※ Yuki Nakata (Doshisha Univ.), Kanako Nishimura, Eriko Matsumura
- 【A223】 Spread and evaporation of liquid film formed by fuel spray impingement on walls with various surface roughness
※ Kazuki Yamaguchi (Tokyo Denki Univ.), Yoshihiro Kobayashi, Masataka Arai
- 【A224】 Effects of Impingement of Detonation Wave on Water Jet Behavior
※ Ryotaro Imai (Shibaura Inst. Tech.), Hiroyasu Saitoh, Koji Tomoinaga (Japan Aerospace Exploration Agency (JAXA)), Yu Daimon, Masaki Koshikawa (Shibaura Inst. Tech.), Shota Kishimoto

A23 : Alternative Fuel 13:30-15:10 Room A

Chair : Eriko Matsumura (Doshisha Univ.)

- 【A231】 Numerical analysis of soot wall deposition in a narrow channel using a simplified model
※Masahide Takagi (National Maritime, Port, and Aviation Technology Research Institute), Yudai Amada (Gunma Univ.), Yoshio Zama, Tomohiko Furuhashi
- 【A232】 Effect of cooling fins on PM deposition in a EGR cooler
※Yudai Amada (Gunma Univ.), Masahide Takagi (National Maritime, Port, and Aviation Technology Research Institute), Tomohiko Furuhashi (Gunma Univ.), Yoshio Zama
- 【A233】 Improvement of solid oxide fuel cell fabrication for high-density of electrolyte layer and high-adhesion between layers by electrostatic spray deposition
※Tetsuma Nakano (Nihon Univ.), Ayana Ikoma, Hiroshi Nomura, Yusuke Suganuma
- 【A234】 Study on CO₂ Absorption via Atomization Utilizing Surface Texturing and Surface Energy
※Tetsuo Nohara (Tokai Univ.), Joe Ono, Yuki Kawamoto, Naoya Fukushima, Masayuki Ochiai

B21 : Atomization Process/Modelling 9:00-10:40 Room B

Chair : Yoshio Zama (Gunma Univ.)

- 【B211】 Atomization Process of Cylindrical Liquid Jet with Thin Air Flow
※Shuichiro Nishide (Kobe Univ.), Akira Sou, Yoshitaka Wada (Mazda Motor Corporation), Yoshiharu Ueki
- 【B212】 Analysis of Liquid Atomization Near the Nozzle of an Air-Spray Gun Using CFD
※Kiyosuke Mikami (Hirosaki Univ.), Kato Eito, Taimei Miyagawa, Tatsuhiro Teraoka (Anest Iwata Corporation), Naoki Serizawa, Minoru Sirota
- 【B213】 Modeling of Marangoni flow coupled with volatile droplet and fluid substrate
Tomoya Nagata(Kyushu Univ.), Zhenying Wang, ※Chihiro Inoue
- 【B214】 Understanding the Time Characteristics of Single Droplet Atomization by Singular Value Decomposition
※Kodai Iwasaki (Gifu Univ.), Makoto Asahara, Takeshi Miyasaka

B22 : Atomization Process/Twin Fluid Atomizer 10:50-12:30 Room B

Chair : Keisuke Komada (Fukuoka Inst. Tech.)

- 【B221】 Bag Formation Phenomenon in Coaxial Twin-Fluid Atomizer
※Andreas Mahendri Putra (Kobe Univ.), Akira Sou, Yoshitaka Wada (Mazda Motor Corporation), Yoshiharu Ueki
- 【B222】 Effect of slit nozzle on atomization characteristics of air spray gun
※Hideto Katou (Hirosaki Univ.), Kiyosuke Mikami, Taimei Miyagawa, Naoki Serizawa (Anest Iwata Corporation), Tatsuhiro Teraoka, Minoru Sirota
- 【B223】 Experimental study on the behavior of highly viscous microdroplets impacting on to a dry surface under high weber number conditions.

※Ryoma Yamaki(Tottori Univ.), Satoshi Nonoyama(Subaru Corporation), Haruto Sasaki(Hyogo Prefectural Government), Yoshiharu Ueki(Mazda Motor Corporation), Yoshitaka Wada, Tetsuya Oda(Tottori Univ.)
- 【B224】 Effects of twin-fluid atomizer geometry on pattern and characteristics of jet breakup
※Yicheng Deng (Hiroshima Univ.), Wenjing Xing (Yamagata Univ.), Kazunori Sato (Formerly Hiroshima Univ.), Yoichi Ogata (Hiroshima Univ.), Keiya Nishida

B23 : Measurement II 13:30-14:45 Room B

Chair : Yoshimitsu Kobashi (Okayama Univ.)

- 【B231】 Adhesion Characteristics of Paint Particles Assisted by Ultrasonic Vibrations
※ Yuichiro Doi(Muroran Inst. Tech.), Natsuki Kuzui, Mitsutomo Hirota, Hiroyasu Saito(Shibaura Inst. Tech.), Kiyotaka Sato(Mazda Motor Corporation), Yoshitaka Wada, Yoshiharu Ueki
- 【B232】 Atomization Characteristics of Paint Using Ultrasonic Vibrating Surface
※ Natsuki Kuzui(Muroran Inst. Tech.), Yuichiro Doi, Mitsutomo Hirota, Hiroyasu Saito(Shibaura Inst. Tech.), Kiyotaka Sato(Mazda Motor Corporation), Yoshitaka Wada, Yoshiharu Ueki
- 【B233】 Anti-coking thermal management for a coaxially-staged lean-burn fuel injector for aero-engines
※ Kazuaki Matsuura (Japan Aerospace Exploration Agency (JAXA)), Takeshi Yamamoto