

Program of The 20th ILASS–Japan Symposium

Venue

Koujin Conference Hall, Faculty of Medicine, Hiroshima University

<http://www.koujin-med.jp/contents/info.html>

Room A : Main Convention Hall (1st Floor)

Room B : Conference Room (Ground Floor)

Invited Lecture

December 19 (Monday) 13:00–14:00 Room A

Chair: Keiya NISHIDA (Hiroshima Univ.)

Spray characteristics of various injectors used for HCCI, LPLi Engine and HC-LNT System

Professor Kibum KIM (Chungbuk National University)

December 19 (Monday)

Special Lecture 1

December 19 (Monday) 15:40–16:40 Room A

Chair: Keiya NISHIDA (Hiroshima Univ.)

Looking back 20 years (English title unfixed)

Dr. Akinori SAITO (Akita Industrial Technology Center)

Special Lecture 1

December 20 (Tuesday) 13:00–14:00 Room A

Chair: Keiya NISHIDA (Hiroshima Univ.)

Rice, Koji (*Aspergillus*), Yeast, and Sake Making

Dr. Nami GOTO (National Research Institute of Brewing, Fundamental Research Division)

Organized Sessions and Organizers

① Application of Sprays to Environmental Techniques:

Professor Kenji AMAGAI, Gunma University

Professor Koji SUZUKI, Toyohashi University of Technology

② Particle/Powder Production

Professor Yoshiyuki SHIRAKAWA, Doshisha University

③ Measurement Techniques

Professor Tsumeaki ISHIMA, Gunma University

④ Numerical Simulation

Professor Hiroshi TAJIMA, Kyushu University

Banquet

December 19, Monday 18:20–20:00

Table of Lectures and Technical Sessions

December 19 (Monday)

Time	Room A (1st Floor)	B (Ground Floor)
8:30–	Registration	
9:00–9:10	Opening Ceremony (Room A)	

9 : 10—10 : 50	A1 : Environment Technology (OS①)	B1 : Cavitation (GS)
10 : 50—11 : 00	Break	
11 : 00—11 : 50	A2 : Measurement I (OS③)	B2 : Spray Application I (GS)
11 : 50—13 : 00	Lunch	
13 : 00—14 : 00	Invited Lecture 1 (Room A) Spray characteristics of various injectors used for HCCI, LPLi Engine and HC-LNT System Kibum KIM (Chungbuk National University)	
14 : 10—15 : 25	A3 : Measurement II (OS③)	B3 : Spray Application II (GS)
15 : 25—15 : 40	Break	
15 : 40—16 : 40	Special Lecture 1 (Room A) Looking back 20 years (English title unfixed) Akinori SAITO (Akita Industrial Technology Center)	
16 : 40—16 : 50	Break	
16 : 50—17 : 30	ILASS–Japan General Assembly Meeting (Room A)	
17 : 30—18 : 00	Award Ceremony (Room A)	
18 : 00—18 : 20	Break	
18 : 20—20 : 00	Banquet	

December 20 (Tuesday)

Time	Room A (1st Floor)	B (Ground Floor)
8:30—	Registraion	
9 : 00—10 : 40	A4 : Particle/Powder (OS②)	B4 : Numerical Simulation (OS①)
10 : 40—10 : 50	Break	
10 : 50—11 : 40	A5 : Spray Combustion I (GS)	B5 : Atomization Mechanism I (GS)
11 : 40—13 : 00	Lunch	
13 : 00—14 : 00	Special Lecture 2 (Room A) Rice, Koji (<i>Aspergillus</i>), Yeast, and Sake Making Nami GOTO (National Research Institute of Brewing, Fundamental Research Division)	
14 : 00—15 : 15	A6 : Spray Combustion II (GS)	B6 : Atomization Mechanism II (GS)
15 : 15—15 : 25	Break	
15 : 25—17 : 05	A7 : Diesel Spray (GS)	B7 : Gasoline Spray (GS)
17 : 05—17 : 15	Break	
17 : 15—17 : 35	Award Ceremony of Best Presentation (Room A)	

Program of Technical Sessions

【General Report】, (Prompt Report), *Speaker

December 19 (Monday)

A1 : Application of Sprays to Environmental Techniques (OS①)

December 19 (Monday) 9:10–10:50 Room A

- 【A-1】 Study of Oil-Mist Adhesion to an Inner Wall of a Circular Pipe
(Part 2: Effect of orifice on adhesion characteristic)**
*Tatsuya KENJO (Gunma Univ.), Yuta TAJIMA, Kenji AMAGAI, Koji TERASHIMA (Isuzu Central R&D Labs., Ltd.)
- 【A-2】 Application for Environmental Improvement by Water Spraying
(New Application of Power Boost & Energy Saving by Using Semi-dry.Fog®)**
*Suzuko OSAWA (H. Ikeuchi Co. Ltd.), Hiroshi NAKAGAWAa, Takeo MIZUNO, Masaharu YONEZAWA
- 【A-3】 Spray and Combustion Concepts for Catalyst Warm-Up in High-Compression-Ratio D.I. Gasoline Engines
(CFD Analysis of Wall Impingement Behavior of Fuel Sprays)**
*Yuhei MATSUMOTO (Mazda Motor Co., Ltd.), Kiyotaka SATO, Tatsuya FUJIKAWA, Masaharu CHATO (Hiroshima Univ.), Kenta KITAMITSU (Mazda E&T), Keiya NISHIDA (Hiroshima Univ.)
- 【A-4】 Spray and Combustion Concepts for Catalyst Warm-Up in High-Compression-Ratio D.I. Gasoline Engines
(Experimental Validation Using an Infrared Absorption Method)**
*Tatsuya FUJIKAWA (Mazda Motor Co., Ltd.), Kenji UCHIDA, Yoshiteru NAKAYAMA, Kiyotaka SATO, Yoshitaka WADA, Masahisa YAMAKAWA

A2 : Measurement I (OS③) December 19 (Monday) 11:00–11:50 Room A

- 【A-5】 Determination Method of the Touch Position for the Submillimeter Bubbles·Droplets Measurement via Single-Tip Optical Fiber Probe**
*Yuki MIZUSHIMA (Shizuoka Univ.), Takayuki SAITO
- 【A-6】 Simultaneous Measurement of Evaporating Droplet Diameter using Phase Doppler Anemometry and High-speed Camera**
Nobuyuki KAWAHARA (Okayama Univ.), Eiji TOMITA, *Hiroya OKANO

A3 : Measurement II (OS③) December 19 (Monday) 14:10–15:25 Room A

- 【A-7】 Velocity and Size Measurement on Water-Oil Mixed Spray**
*Tsuneaki ISHIMA (Gunma Univ.), Hisanobu KAWASHIMA, Shinichiro SUDA (TACO Co., Ltd.), Masaaki SASAKI
- 【A-8】 A Study on Particle Size Measurements by Polarization Ratio Method Using Multi-Wavelength Polarized Lights**
*Naoya MIURA (Gunma Univ.), Mikiya ARAKI, Seiichi SHIGA
- 【A-9】 Measurement of Droplet Diameter Injected from a Port Fuel Injector Spray by Using High-Speed Visualization**
Nobuyuki KAWAHARA (Okayama Univ.), Eiji TOMITA, *Kohei UENO, Mamoru SUMIDA (Mitsubishi Electric Ltd.)

December 20 (Tuesday)

A4 : Particle/Powder (OS②) December 20 (Tuesday) 9:00–10:40 Room A

- [A-10] Crystallization Behavior in Droplets by Phase Field Method**
*Yusuke NISHIMURA (Doshisha Univ.) , Yoshiyuki SHIRAKAWA, Atsuko SHIMOSAKA, Jyusuke HIDAHA
- [A-11] Influence of Mutual Diffusion on Cluster Formation Mechanism at the Liquid-Liquid Interface**
*Taiki WAKE (Doshisha Univ.) , Asato FUJIMOTO, Akira KITAYAMA, Atsuko SHIMOSAKA, Yoshiyuki SHIRAKAWA, Jusuke HIDAHA
- [A-12] Measurement of the Number Density of Droplets in an Aerosol by Laser-Induced Breakdown Method**
*Hidehiko YASHIRO (AIST) , Masayuki KAKEHATA
- [A-13] Preparation of Amino Acid Composite Particles in Atomization Process**
*Shuto MURATA (Doshisha Univ.) , Taiki WAKE, Asato FUJIMOTO, Atsuko SHIMOSAKA, Yoshiyuki SHIRAKAWA, Jusuke HIDAHA

A5 : Spray Combustion I (GS) December 20 (Tuesday) 10:50–11:40 Room A

- [A-14] Measurement of Spray Combustion Field with Swirl Flow in Aircraft Gas Turbine Combustor**
*Kazuki TAINAKA (Osaka Univ.) , Jun HAYASHI, Hideki MORIAI (Mitsubishi Heavy Industries Ltd.) , Noriaki NAKATSUKA (Osaka Univ.) , Fumiteru AKAMATSU
- [A-15] Effects of Ambient Gas Temperature on Spray Behavior and Combustion Characteristics in a Biodiesel Fueled Diesel Engine**
*Mingu KANG (Hanyang University), Su Han PARK, Sungwook PARK, Chang Sik LEE

A6 : Spray Combustion II (GS) December 20 (Tuesday) 14:00–15:15 Room A

- [A-16] Ignition and Combustion Phenomena of Mutually Interacted Diesel Sprays on an Impingement Wall with Extruded Column**
*Shota TOZUKA (Gunma Univ.) , Tatsuro OHIMA (Ota City Gas Co.) , Tomohiko FURUHATA (Gunma Univ.) , Masataka ARAI
- [A-17] A Study on Local Flame-Spread-Limit Distance of N-Decane Droplet Cloud Element and Its Dependence on Flame-Spread Direction in Micro gravity**
*Tutomu HIROSE (Yamaguchi Univ.) , Takehiko SEO, Masato MIKAMI, Masao KIKUCHI (JAXA)
- [A-18] Effects of Fuel Spray Characteristics on Cold-Starting of a 4 Stroke SI Engine**
*Ryota ADACHI (Gunma Univ.) , Kazuya HIRAGA, Mikiya ARAKI, Seiichi SHIGA, Naoya KANEKO (Toyota Motor Co., Ltd.) , Tomojiro SUGIMOTO

A7 : Diesel Spray (GS) December 20 (Tuesday) 15:25–17:05 Room A

- [A-19] Applicability of Micro-probe L2F for Measurement of High Number Density Spray**
*Keisuke KOMADA (Nagasaki Univ.) , Daisaku SAKAGUCHI, Hironobu UEKI, Masahiro ISHIDA
- [A-20] Ambient Gas Mixing Process of D.I. Diesel Spray**
* Jingyu ZHU (Hiroshima Univ.) , Keiya NISHIDA
- [A-21] Improvement of Atomization and Flow Characteristics of Atomization Enhancement Nozzle for Direct Injection Diesel Engine**
*Nobushige TAMAKI (Kinki Univ.) , Kazuya KATAKAMI (Kansai Univ.)

[A-22] Study on Structure of a Diesel Spray under High Ambient Pressure

*Yoshio ZAMA (Gunma Univ.) , Wataru OCHIAI, Masataka ARAI

December 19 (Monday)

B1 : Cavitation (GS) December 19 (Monday) 9:10–10:50 Room B

[B-1] Visualization of Internal Flow and Spray Formation in Real Size Diesel Nozzle

*Tomohiro HAYASHI (Nippon Soken Inc.) , Masatoshi BASAKI (Denso Co., Ltd.) , Masayuki Suzuki, Masato IKEMOTO (Toyota Motor Co., Ltd.)

[B-2] Influence of Eccentric Needle on the Flow inside a VCO Diesel Nozzle and Primary Atomization (Experimental Study on the Flow Visualization of 10 Times Scaled VCO Diesel Nozzle)

*Kento OHNISHI (Tottori Univ.) , Yukihiko GOHDA (Mitsubishi Materials Techno Co., Ltd.) , Tetsuya ODA (Tottori Univ.) , Katsuyuki OHSAWA

[B-3] Bubble Dynamics Model for Predicting Cavitation in a Nozzle

*Yusuke KINUGAWA (Kobe Univ.) , Tomoyuki KINUGASA, Akira SOU

[B-4] Cavitation in Fuel Injector Nozzles and Liquid Jets

Ryohei SUGIMURA (Kobe Univ.) , Raditya Hendra PRATAMA, *Ryota OHASHI, Tsuyoshi TOMISAKA, Akira SOU

B2 : Spray Application I (GS) December 19 (Monday) 11:00–11:50 Room B

[B-5] Measurement of Spacial Atomization Characteristics by Impinging Jet Atomizer

*Ryota SAKISAKA (Osaka Univ.) , Jun HAYASHI, Yu DAIMON (JAXA), Nobuhiro YAMANISHI, Fumiteru AKAMATSU (Osaka Univ.)

[B-6] Atomization of Water by Supersonic Air Streams

*Kiyotaka SHUZENJI (Fukuoka Industry Technology Center)

B3 : Spray Application II (GS) December 19 (Monday) 14:10–15:25 Room B

[B-7] Proposal of New Supplying Evaporation Precursor Method with CVD by using Mixed Solution (Fabrication of Injector for New Supplying Evaporation Precursor Method)

*Motohiro OSHIMA (Fukui Univ. of Tech.) , Masaya MATSUSHITA (Doshisha Univ.) , Hidenori MIYAMOTO, Jiro SENDA, Kozo ISHIDA (HORIBA Ltd.)

[B-8] Effects of Mean Droplet Diameter of Water Spray on Extinction Characteristics of Heptane Spray Diffusion Flame in Counterflow

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

[B-9] Experimental Study on Characteristics of Laser-Induced Plasma Generation in Water Mist

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

December 20 (Tuesday)

B4 : Numerical Simulation (OS④) December 20 (Tuesday) 9:00–10:40 Room B

[B-10] Verification of Breakup Model Using LES of High Density Diesel Spray

*Koji KITAGUCHI (Doshisha Univ.) , Soichi HATORI, Tsukasa HORI (Osaka Univ.) , Jiro SENDA (Doshisha Univ.)

- [B-11] Surface Instability and Atomization Characteristics of Straight Liquid Jet Sprays**
*Junji SHINJO (JAXA) , Akira UMEMURA (Nagoya Univ.)
- [B-12] Numerical Study of the Influence of Inhomogeneous Mixture Distribution on Combustion Process**
*Satoshi KAWAUCHI (National Maritime Research Institute) , Masahide TAKAGI, Hiroshi TAJIMA (Kyushu Univ.)
- [B-13] Spray Model Verification via Observation of Diesel Spray Propagation in Parallel Flow Field to Injection Direction**
*Hiroshi TAJIMA (Kyushu Univ.) , Daisuke TSURU, Satoshi KAWAUCHI (National Maritime Research Institute) , Hisako KATO (Kyushu Univ.)

B5 : Atomization Mechanism I (GS) December 20 (Tuesday) 10:50–11:40 Room B

- [B-14] Viscous Effects on Breakup of Ligaments from High Speed Rotary Atomizer**
*Yousuke HATAYAMA (Hiroasaki Univ.) , Toshiki HANEDA Minoru SHIROTA, Takao INAMURA, Masatoshi DAIKOKU (Hachinohe Inst. Tech.) , Yasuhiro SAITO (Tohoku Univ.) , Hideyuki AOKI
- [B-15] Instability Characteristics of a Liquid Sheet Formed with Surfactant Solution**
*Tatsuro WAKIMOTO (Osaka City Univ.) , Ryouyuke FUJII, Kenji KATO

B6 : Atomization Mechanism II (GS) December 20 (Tuesday) 14:00–15:15 Room B

- [B-16] Mist Flow Generation by a Rotating Cone and Enhancement of Oxygen Dissolution**
*Takahiro ADACHI (Akita Univ.) , Akihiro ARAI
- (B-17) Experimental Observation of Breakup Behavior of High-viscous Liquid-film Formed by Impingement of Two Liquid Jet (Fundamental Study for the Application of New Liquid Fuels to Gas-Turbine)**
*Takashi SUZUI (Toyohashi Univ. of Tech.) , Naoto Tezuka (Minebea Co., Ltd.) , Hiroyuki NISHIDA (CRIEPI) , Nozomu HASHIMOTO, Yasushi OZAWA
- [B-18] Proposal and Validation of Estimation Method for Spray Diameter and Size Distribution Based on Energy Conservation Law**
*Chihiro INOUE(Univ. of Tokyo), Toshinori WATANABE, Takehiro HIMENO, Mitsuo KOSHI

B7 : Gasoline Spray (GS) December 20 (Tuesday) 15:25–17:05 Room B

- [B-19] Evaporation and Mixture Formation Processes of Ethanol/Gasoline Blend Fuel Spray Injected by Hole-Type Nozzle for D.I. Gasoline Engine**
*Masaharu CHATO (Hiroshima Univ.) , Suguru FUKUDA (Honda Motor Co., Ltd.) , Kiyotaka SATO (Mazda Motor Co., Ltd.) , Keiya NISHIDA (Hiroshima Univ.)
- [B-20] Effect of Mixture Characteristics on Ignition and Combustion Processes of Fuel Spray Injected by Hole-Type Nozzle for D.I. Gasoline Engine**
*Hajime KATAOKA (Hiroshima Univ.) , Takashi ARAKI (Mazda Motor Co., Ltd.) , Keiya NISHIDA (Hiroshima Univ.) , Kiyotaka SATO (Mazda Motor Co., Ltd.) , Hajime YOSHIDA (Japan Coast Guard Academy)
- [B-21] Measurement of the Liquid Fuel Thickness Formed by Impinging Spray on a Wall Using Gasoline Port Injectors**
*Tomohiro YAMADA (Chiba Univ.) , Yasuo MORIYOSHI, Tatsuya KUBOYAMA, Gaku SATO (Keihin Co., Ltd.)