16th Annual Conference of *ILASS-Asia*

**Conference venue**
Ryojun Auditorium, Nagasaki University  
1-12-4 Sakamoto, Nagasaki, 852-8523 JAPAN  

Room A: Bauduin Hall  
Room B: Sensai Hall

**Special Lecture**  
(Chair: Prof. K. NISHIDA, Hiroshima Univ.)  
December 18 (Wednesday) 13:10 - 14:10 Room A

**Importance of Injector Design related to Combustion Instability**  
Professor Youngbin Yoon (School of Mechanical and Aerospace Engineering, Seoul National University)

**Welcome party**
Date and Time: December 18 (Wednesday) 19:00 - 20:30  
Venue: Cafeteria in Nagasaki University  
Access: 5 minutes by walk from Ryojun Auditorium.  
Admission: All participants of the 16th Annual Conference of ILASS-Asia are invited.

**Banquet**
Date and Time: December 19 (Thursday) 19:00 - 21:00  
Venue: BEST WESTERN PREMIER Hotel Nagasaki  
2-26 Takaramachi, Nagasaki, 850-0045 Japan  
Tel. +81-95-821-1111  
http://www.bestwestern.co.jp/english/nagasaki/index.html  
Access: 10 minutes' walk from Ryojun Auditorium to Hamaguchimachi tram stop, and another 10 minutes from Hamaguchimachi to Takaramachi by the tram.  
Admission: A banquet fee is included in the registration fee for the participants from abroad. For the participants of domestic residents, banquet is optional with an extra fee.  
Note: The 16th Annual Conference of ILASS-Asia shares the banquet with the 22nd Symposium of ILASS-Japan.

**Participation in 22nd Symposium of ILASS-Japan**
Participants of the 16th Annual Conference of ILASS-Asia (ILASS-Asia 2013) are eligible to participate in the 22nd Symposium of ILASS-Japan held during December 19-20 in the same venue. Invited lecture of the 22nd Symposium of ILASS-Japan, which starts directly after the final sessions of ILASS-Asia 2013, is given in English. Other sessions of the 22nd Symposium of ILASS-Japan are given in Japanese.

**Acknowledgement**
This conference was financially supported by Nagasaki University.
# 16th Annual Conference of ILASS-Asia

## December 18, 2013 (Wednesday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Room A</th>
<th>Room B</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 –</td>
<td>Registration</td>
<td></td>
</tr>
<tr>
<td>9:00 – 9:10</td>
<td>Opening Ceremony (Room A)</td>
<td></td>
</tr>
<tr>
<td>9:10 – 9:20</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A-111 ~ A-113)</td>
<td>(B-111 ~ B-113)</td>
</tr>
<tr>
<td>10:35 – 10:45</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>10:45 – 12:00</td>
<td>A12: Diesel Spray I</td>
<td>B12: Flashing Spray</td>
</tr>
<tr>
<td></td>
<td>(A-121 ~ A-123)</td>
<td>(B-121 ~ B-123)</td>
</tr>
<tr>
<td>12:00 – 13:10</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>13:10 – 14:10</td>
<td>Special Lecture (Room A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;Importance of Injector Design Related to Combustion Instability&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Youngbin Yoon (Professor, School of Mechanical and Aerospace Engineering, Seoul National University)</td>
<td></td>
</tr>
<tr>
<td>14:10 – 14:20</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A-131 ~ A-135)</td>
<td>(B-131 ~ B-135)</td>
</tr>
<tr>
<td>16:25 – 16:35</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>16:35 – 18:15</td>
<td>A14: Diagnostics</td>
<td>B14: Atomization Characteristics I</td>
</tr>
<tr>
<td></td>
<td>(A-141 ~ A-144)</td>
<td>(B-141 ~ B-144)</td>
</tr>
<tr>
<td>19:00 – 20:30</td>
<td>Welcome Party of 16th Annual Conference of ILASS-Asia</td>
<td></td>
</tr>
</tbody>
</table>

## December 19, 2013 (Thursday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Room A</th>
<th>Room B</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 -</td>
<td>Registration</td>
<td></td>
</tr>
<tr>
<td>9:00 – 10:15</td>
<td>A21: Atomizers/Injectors II</td>
<td>B21: Atomization Characteristics II</td>
</tr>
<tr>
<td></td>
<td>(A-211 ~ A-213)</td>
<td>(B-211 ~ B-213)</td>
</tr>
<tr>
<td>10:15 – 10:25</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A-221 ~ A-224)</td>
<td>(B-221 ~ B-224)</td>
</tr>
<tr>
<td>12:05 – 12:20</td>
<td>ILASS-Asia Annual General Meeting 2013 (Room A)</td>
<td></td>
</tr>
<tr>
<td>12:20 – 13:10</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A-231 ~ A-234)</td>
<td>(B-231 ~ B-234)</td>
</tr>
<tr>
<td>19:00 – 21:00</td>
<td>Banquet</td>
<td></td>
</tr>
<tr>
<td></td>
<td>of 16th Annual Conference of ILASS-Asia &amp; 22nd Symposium of ILASS-Japan</td>
<td></td>
</tr>
</tbody>
</table>
# 22nd Symposium of ILASS-Japan

## December 19, 2013 (Thursday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Room A</th>
<th>Room B</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30</td>
<td>Registration</td>
<td></td>
</tr>
<tr>
<td>15:00–16:00</td>
<td>Invited Lecture (Room A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Sooting and Burning Behavior of Isolated n-heptane of Droplet”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assistant Professor Hyun Kyu Suh (Kongju National University)</td>
<td></td>
</tr>
<tr>
<td>16:00–16:10</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>17:00–18:00</td>
<td>ILASS-Japan General Meeting (Room A)</td>
<td></td>
</tr>
<tr>
<td>19:00–21:00</td>
<td>Banquet</td>
<td></td>
</tr>
</tbody>
</table>

## December 20, 2013 (Friday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Room A</th>
<th>Room B</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30</td>
<td>Registration</td>
<td></td>
</tr>
<tr>
<td>9:00–10:40</td>
<td>A31: Diesel Spray I (A-311 ~ A-314)</td>
<td>B31: Spray Behavior (B-311 ~ B-314)</td>
</tr>
<tr>
<td>10:40–10:50</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>12:05–13:10</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>14:50–15:00</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>15:00–16:40</td>
<td>A34: Numerical Simulation (A-341 ~ A-344)</td>
<td>B34: Particle/Powder Production II (B-341 ~ B-344)</td>
</tr>
<tr>
<td>16:40–17:10</td>
<td>Award Ceremony of Best Presentation of ILASS-Japan (Room A)</td>
<td></td>
</tr>
</tbody>
</table>

* Invited lecture is given in English. Other sessions of the 22nd Symposium of ILASS-Japan are given in Japanese.
Program of Technical Sessions

Special Lecture (Chair: Prof. K. NISHIDA, Hiroshima Univ.)
Dec. 18  13:10 - 14:10 Room A

Importance of Injector Design Related to Combustion Instability
Professor Youngbin Yoon (School of Mechanical and Aerospace Engineering, Seoul National University)

December 18 (Wednesday)

A11: Atomizers/Injectors I  (Chair: Dr. N. IKI, AIST, Japan)
9:20-10:35 Room A

【A-111】 An Experimental Study on the Atomization Characteristics of the Twin-fluid Atomizer for the Heavy Fuel Oil Boiler
*Hong Min PARK, Kun Woo KU, Choong Won LEE, Jung Goo HONG (Kyungpook National University)

【A-112】 Effects of Geometric Design on the Spray Characteristics of an Internal-mixing Atomizer with Supersonic Configuration
Muh-Rong WANG, *Pin-Jen CHEN (National Cheng Kung University)

【A-113】 The Development of a Pressure-Swirl Injector for GDI Reciprocating Engine

A12: Diesel Spray I  (Chair: Prof. D. SAKAGUCHI, Nagasaki Univ., Japan)
10:45-12:00 Room A

【A-121】 Effects of Wall Impingement on Diesel Spray Characteristics
*Kuichun LI, Takeru MATSUO (Hiroshima University), Masaki IDO (Komatsu Ltd.), Keiya NISHIDA, Yoichi OGATA, Baolu SHI (Hiroshima University)

【A-122】 Effect of Ambient Pressure on Adhered Fuel Mass of Diesel Spray Impinging on a Flat Wall
*Mohd Zaid AKOP, Yoshio ZAMA, Tomohiko FURUHATA, Masataka ARAI (Gunma University)

【A-123】 Velocity Measurement of Diesel Spray Impinging on a Flat Wall
*Yoshio ZAMA, Kazuma SUGAWARA, Mohd Zaid AKOP, Tomohiko FURUHATA, Masataka ARAI (Gunma University)
A13: Cavitation  (Chair: Prof. N. TAMAKI, Kinki Univ., Japan)  14:20-16:25 Room A

【A-131】 String Cavitation in Fuel Injector
*Raditya Hendra PRATAMA, Akira SOU (Kobe University)

【A-132】 Effects of Inlet Edge Roundness on Cavitation in Injector Nozzles and Liquid Jet
*Makoto MASHIDA (Denso Corporation), Aika UZAWA, Yusuke KIBAYASHI, Akira SOU (Kobe University)

【A-133】 Numerical Simulation of Cavitation Phenomena in Diesel Injector Nozzles
*Baris BICER, Ayana TANAKA, Takumi FUKUDA, Akira SOU (Kobe University)

【A-134】 Study of Effect of Diesel Nozzle Geometries on Spray Characteristics with a Spray Model Coupled with Nozzle Cavitating Flow
*Zhixia HE, Fen WANG, Juyan LIU, Qian WANG, Zhaochen JIANG (Jiangsu University)

【A-135】 Experimental Study of Injector Nozzle Sac Volume and Scale Effect on Nozzle Cavitating Flow and Spray Characteristics
*Wenjun ZHONG, Zhixia HE, Qian WANG, Zhuang SHAO (Jiangsu University)

A14: Diagnostics  (Chair: Prof. N. KAWAHARA, Okayama Univ., Japan)  16:35-18:15 Room A

【A-141】 Study on Simulation of Diesel Fuel Spray Based on L2F Measurement
*Keisuke KOMADA (Nagasaki University), Hiroshi TAJIMA (Kyushu University), Daisaku SAKAGUCHI, Hironobu UEKI, Masahiro ISHIDA (Nagasaki University)

【A-142】 Reconstruction of Local Volume-Weighted Drop-Size Distributions of a Solid Cone Spray using Adaptive Tomographic Technique
*Songrit TANCHATCHAWAN, Pumyos VALLIKUL, Pisit YONGYINGSAKTHAVORN (King Mongkut’s University of Technology North Bangkok), Christophe DUMOUCHEL (Université et INSA de Rouen)

【A-143】 Temporal and Spatial Effects of Ablation Plume on Number Density Distribution of Droplets in an Aerosol Measured by Laser-induced Breakdown
*Hidehiko YASHIRO, Masayuki KAKEHATA (National Institute of Advanced Industrial Science and Technology (AIST))

【A-144】 Simultaneous Velocity Field Measurements of Two-Phase Flows by Means of High-Speed Two-Color PIV
*Ming ZHANG, Min XU (Shanghai Jiao Tong University)
B11: Alternative fuel/other liquid  (Chair: Prof. S. PARK, Hanyang Univ., Korea)  
9:20-10:35 Room B

【B-111】  Spray Characteristics of Iso-HVO and Biodiesel Blended Diesel Fuels in Diesel Engine-like Conditions  
*Duckhan KIM, Sehun OH, Seonghwan KIM (SK Innovation), Soo-Young NO (Chungbuk National University)

【B-112】  Experimental Investigation of Aerodynamic Effects on Jatropha Oil Spray Injected by the Air-assist Pressure-swirl Atomizer for a Laboratory-scale Burner  
*Yong FAN, Nozomu HASHIMOTO, Hiroyuki NISHIDA, Yasushi OZAWA (Central Research Institute of Electric Power Industry (CRIEPI))

【B-113】  Comparison of Injection, Spray and Combustion between Diesel from Direct Coal Liquefaction and Petrodiesel in a Common Rail Diesel Engine  
Jinlong BAI, Yonglun LI, *Xinqi QIAO, Zhen WANG, Jian ZHUANG, Zhen HUANG (Shanghai Jiao Tong University)

B12: Flashing Spray  (Chair: Prof. M. OSHIMA, Fukui Univ. of Tech., Japan)  
10:45-12:00 Room B

【B-121】  Internal Flow Pattern and Macroscopic Spray Characters of R134a Actuated through a Twin-Orifice Atomizer with Low Injection Pressure  
*Dehao JU, Jin XIAO, Xin ZHOU, Wei ZHOU, Zhen HUANG (Shanghai Jiao Tong University)

【B-122】  Effects of Upstream Temperature and Ambient Pressure on Spray Angle of CO₂ Flashing Spray  
*Tien-Chu LIN, Yi-Jun SHEN, Muh-Rong WANG, Yang-Sheng Huang (National Cheng Kung University)

【B-123】  Fuel Impingement Analysis of Flash-Boiling Spray in a Spark-Ignition Direct-Injection Engine  
*Hao CHEN, Min XU, David L.S. HUNG, Jie YANG, Hanyang ZHUANG (Shanghai Jiao Tong University)

B13: Gasoline Spray  (Chair: Prof. D. TSURU, Kyushu Univ., Japan)  
14:20-16:25 Room B

【B-131】  Numerical Study on Fuel/Air Mixture Formation in GDI Engine for Various Injection Strategies  
*Taehoon KIM, Sungwook PARK (Hanyang University)

*Jingeun SONG (Hanyang University), Munsoo CHON (Korea National University of Transportation), Sungwook PARK (Hanyang University)
**B14: Atomization Characteristics I** 
(Chair: Prof. T. WAKIMOTO, Osaka City Univ., Japan)  
16:35-18:15 Room B

- **B-133**  
  Study of Spray Evaporation of Gasoline and Alcohol Fuel using High Speed Schlieren and Mie Scattering Technique  
  *Tianyun LI, Min XU, Gaoming ZHANG (Shanghai Jiao Tong University)  

- **B-134**  
  Analysis of Spray Structure and Penetration Variations using Proper Orthogonal Decomposition  
  *Hanyang ZHUANG, David L.S. HUNG, Min XU, Hao CHEN (Shanghai Jiao Tong University)  

- **B-135**  
  Mixture Formation Process of Gasoline/Ethanol Blended Fuel Spray Injected by Hole-type Nozzle for D.I. Gasoline Engines  
  *Run CHEN (University of Hiroshima), Masaharu CHATO (Honda Motor Co., Ltd.), Keiya NISHIDA, Yoichi OGATA, Baolu SHI (University of Hiroshima)  

**B14: Atomization Characteristics I** 
(Chair: Prof. T. WAKIMOTO, Osaka City Univ., Japan)  
16:35-18:15 Room B

- **B-141**  
  A Study of Breakup Process of a Jet Fuel Simulant Liquid at Low Pressure  
  *Tomoyuki KANDA, Takehiiko SEO, Masato MIKAMI (Yamaguchi University)  

- **B-142**  
  Study of Ultrasonic Atomization  
  *Ajay M, Anand T. N. C. (Indian Institute of Technology-Madras)  

- **B-143**  
  Experimental Investigation of Primary Atomization of Liquid Jet in Crossflow using Dynamic Mode Decomposition and Proper Orthogonal Decomposition  
  *Gaurav SINGH, John ABRAHAM, RAMGOPAL, S. R. CHAKRAVARTHY (Indian Institute of Technology)  

- **B-144**  
  Spray Characteristics of a High Rotating Speed Slinger Fuel System  
  *Chih-Lung KE, Wei-Hsiang LAI (National Cheng Kung University), Chia-Hong HONG (Chung Shan Institute of Science and Technology)  

**December 19 (Thursday)**

**A21: Atomizers/Injectors II** 
(Chair: Prof. T. H. LIN, National Cheng Kung Univ., Taiwan)  
9:00-10:15 Room A

- **A-211**  
  Investigation Novel Matched Valve-Actuator Atomizer Insert Design For Liquid  
  *Norzelawati ASMUIN, Azizan ISMAIL, Waluyo Adi SISWANTO (Universiti Tun Hussein Onn Malaysia (UTM))  

- **A-212**  
  Experimental and Numerical Investigation of Hydraulic Flow and Spray Characteristics in CR Direct-Injection Diesel Engine with Indirect Acting Piezo Injector  
  *Myung Chul CHUNG, Gi Su SUNG, Sang Myeong KIM, Jin Wook LEE (Soongsil University)  

- **A-213**  
  Droplet Formation by Thin Coaxial Twin-Fluid Atomizer  
  *Norihiko IKI, Masato SUZUKI, Takashi OKADA (National Institute of Advanced Industrial Science and Technology (AIST))
A22: Diesel Spray II  (Chair: Prof. T. FURUHATA, Gunma Univ., Japan)  10:25-12:05 Room A

【A-221】  An Experimental Study on the Macroscopic Spray Characteristics using Marine Diesel Injector with Common-rail System  
*Junkyu PARK, Sungwook PARK (Hanyang University)

【A-222】  Experimental Study of Effect of Nozzle Diameter on Near-Field Spray Behavior of Diesel in Evaporating Conditions  
*Yanfei LI, Yizhou JIANG (Tsinghua University), Xiao MA (The University of Birmingham), Liang ZENG, Jianxin WANG (Tsinghua University), Hongming XU (The University of Birmingham)

【A-223】  An Investigation on Spray Characteristics of Diesel - DME Used the Multi-Injection with Change of Injection Pressure  
*Yunho JEONG, Jiwoong YANG, Ockteak LIM (University of Ulsan)

【A-224】  Characteristics of Diesel Spray in Near Nozzle Region Visualized by Microscopic Experiment  
WANG Zheng-hao, WANG Qian, HE Zhi-xia, LAI Xiao-ye, *Li Jian-zhi, WU Yu-qiang, Zhang Jia-bin (Jiangsu University)

A23: Industrial Applications  (Chair: Prof. J. HAYASHI, Osaka Univ., Japan)  13:10-14:50 Room A

【A-231】  Effects of Viscosity and Ion Concentration on Performance of Nebulization with Vibrating Mesh  
Hua-Yang HUNG, *Tien-Chu LIN, Pin-Jen CHEN, Muh-Rong WANG (National Cheng Kung University), Hung-Chia HSIEH (DELBio, INC)

【A-232】  Application of Spray Coating Technology on Thermal Solar Absorber Film  

【A-233】  Experimental Studies on Carburetors  
*Saransh JAIN, Anand T. N. C. (Indian Institute of Technology-Madras)

【A-234】  Gaseous Fuel Injection Modeling for CNG Direct Injection  
*Mingi CHOI, Sungwook PARK (Hanyang University)
B21: Atomization Characteristics II  (Chair: Prof. M. ARAKI, Gunma Univ., Japan)
9:00-10:15 Room B

【B-211】 Effects of Nozzle Configuration on Macroscopic Spray Characteristics of Multi-hole Injectors under Superheated Conditions
*Gele AORI, Min XU, Ming ZHANG, Gaoming ZHANG, Tianyun LI (Shanghai Jiao Tong University)

【B-212】 Temporal Investigation of Spray Characteristics from a Multi-hole Injector Using Dimensionless Analysis
*Gaoming ZHANG, Min XU (Shanghai Jiao Tong University)

【B-213】 The Break Up of Liquid Jet in Supersonic Cross Flow
Tony YUAN, *Yo-Hsiang SU (National Cheng Kung University)

B22: Impinging/collisions spray/droplet  (Chair: Prof. C. INOUE, Univ. of Tokyo, Japan)
10:25-12:05 Room B

【B-221】 Influences of Liquid Properties on Impact Behavior of High-Speed Micro-Droplet onto an Inclined Surface
*Tetsuya ODA (Tottori University), Naoya ABE (Mitsubishi Electric Corp.), Ryosuke MATSUO (Tottori University), Yhuichi KITAGAWA (Tohoku University), Hiroshi MASUDA, Katsuyuki OHSAWA (Tottori University)

【B-222】 A Quantitative Look into a Water Droplet Impacting onto Hot-surface
*Nejdet ERKAN, Koji OKAMOTO (University of Tokyo)

【B-223】 Merging Collisions of Two Aligned Drops in Flows
*Po-Kai HSU, Chun-Kuei CHEN, Ta-Hui LIN (National Cheng Kung University)

【B-224】 Disintegration Degree of Liquid Fan Formed with Impingement of Two Liquid Jets
*Shingo KARIKAWA, Jun HAYASHI (Osaka University), Yu DAIMON, Hideyo NEGISHI (JAXA), Fumiteru AKAMATSU (Osaka University)

B23: Combustion/Emission  (Chair: Prof. M. XU, Shanghai Jiao Tong Univ., China)
13:10-14:50 Room B

【B-231】 Effect of GTL Fuel on Spray, Combustion and Emission Characteristics in a Compression Ignition Engine
*Kibong Choi, Donggon LEE(Hanyang University), Hyun Gu ROH(Induk University), Chang Sik LEE (Hanyang University)

【B-232】 A Computational Study on DME HCCI Combustions Characteristics with Methanol Concentrations
*Hyowon LEE, Ockteak LIM (University of Ulsan)
A Numerical Investigation about the EGR Effect under the Condition of Intake-Boost Pressure on HCCI Autoignition
*Chunghwan OH, Narankhuu JAMSRAN, Ockteak LIM (University of Ulsan)

A Numerical Study on the NOx Reduction Rate Depending on the Flow Uniformity Index of NH₃ in front of the Catalytic Converter
*Mi ji SONG, Young soo JEON, Seang wock LEE, Yeon sik KANG, Yong seok CHO (Kookmin University)
22nd Symposium of ILASS-Japan

Invited Lecture
Dec. 19  15:00-16:00  Room A
Chair: Prof. H. UEKI, Nagasaki Univ.
Sooting and Burning Behavior of Isolated n-heptane of Droplet
Assistant Professor  Hyun Kyu Suh (Kongju National University)

December 19(Thursday)

A24: Atomization Mechanism  Dec. 19  16:10-17:00  Room A
Chair: Prof. H. TAJIMA, Kyushu Univ.

【A-241】Visualization of Atomization in Sparkling Fireworks
*Chihiro INOUE, Toshinori WATANABE, Takehiro HIMENO (Univ. of Tokyo),
Mitsuo KOSHI (Yokohama National Univ.), Hiroshi TERASHIMA (Univ. of Tokyo)

【A-242】Three-dimensional Deformation and Merging of Instability Waves Caused by Inflection Instability of a Liquid Sheet
*Tatsuro WAKIMOTO, Kenji KATOH (Osaka City Univ.)

B24: Mixture formation / Cavitation  Dec. 19  16:10-17:00  Room B
Chair: Prof. N. KAWAHARA, Okayama Univ.

【B-241】Study on Mixture Formation Process of Diesel Spray with Two-Component Fuel
*Masashi AJIOKA, Yu KUWAHARA (Doshisha Univ.), Masanori OKADA (IHI Co.),
Yoshimitsu KOBASHI (Kanazawa Inst. of Tech.) Eriko MATSUMURA, Jiro SENDA (Doshisha Univ.)

【B-242】Effects of Cavitation Bubble in the Nozzle on a Liquid Jet
*Takayoshi YAMAZAKI (Doshisha Univ.), Teruaki HAIBARA,
Mutsumi KANDA (TOYOTA Motor Co.), Eriko MATSUMURA, Jiro SENDA (Doshisha Univ.)

December 20(Friday)

A31: Diesel Spray I  Dec. 20  9:00-10:40  Room A
Chair: Prof. N. TAMAKI, Kinki Univ.

【A-311】Effect of Needle Lift on Atomization Process in Diesel Fuel Spray
*Tatsuya ZAITSU, Keisuke KOMADA, Daisaku SAKAGUCHI, Hironobu UEKI,
Masahiro ISHIDA (Nagasaki Univ.)

【A-312】Experimental Study on Ambient Gas Entrainment into Diesel Spray
*Jingyu ZHU (Mazda Motor Co. Ltd.), Takumi UEMURA, Keiya NISHIDA (Univ. of Hiroshima)

【A-313】Analysis of Velocity and Turbulence Intensity Fields of High-Pressure Diesel Sprays in the Near-Field
*Seoksu MOON, Taku TSUJIMURA (AIST), Takatoshi SAITO, Zhili CHEN (Tokai Univ.)

【A-314】Effects of Biofuel Properties on Response and Flow Performance of a High-Pressure Diesel Injector
*Tinkai KOU (Tokai Univ.), Seoksu MOON (AIST), Takatoshi SAITO, Zhili CHEN (Tokai Univ.)

A32: Diesel Spray II  Dec. 20  10:50-12:05  Room A
Chair: Prof. A. SOU, Kobe Univ.
*Kazuma NISHIKAWA (Kinki Univ.), Shohei FUKAMICHI (Yamanaka Eng. Co.), Nobushige TAMAKI (Kinki Univ.)

【A-322】 Effects of Pitch Circle Diameter and Existence of Inclination of Nozzle Hole of Atomization Enhancement Nozzle for Direct Injection Diesel Engine on Atomization Characteristics
*Shinya SAKAI, Kazuma NISHIKAWA (Kinki Univ.), Shohei FUKAMICHI (Yamanaka Eng. Co.), Nobushige TAMAKI (Kinki Univ.)

【A-323】 Time-Series Measurement of Pilot Diesel Spray with Two Wavelength Super High Spatial Resolution Photography
*Tatsunori FUJI (Doshisha Univ.), Naohiro MARUBAYASHI (Nippon Steel & Sumikin Engineering Co.), Eriko MATSUMURA, Jiro SENDA (Doshisha Univ.)

A33: Gasoline Spray / Spray Combustion II  Dec. 20  13:10-14:50  Room A
Chair: Prof. D. TSURU, Kyushu Univ.
【A-331】 Effect of Cross-flow on Behavior of Fuel Spray Injected by Hole-type Nozzle
*Ryosuke KISHI, Min GUO, Baulo SHI, Youichi OGATA, Keiya NISHIDA (Hiroshima Univ.), Yoshitaka WADA (MAZDA Motor Co.)

【A-332】 Atomization Characteristics of Transient Spray near the Nozzle Exit of DISI Injector
Nobuyuki KAWAHARA, Eiji TOMITA, *Ryo HASEGAWA (Okayama Univ.)

【A-333】 Effects of the Carbon Dioxide Atmosphere on Soot Formation in Spray Flame
*Takuma YAMAGAKI, Jun HAYASHI, Noriaki NAKATSUKA, Fumiteru AKAMATSU (Osaka Univ.)

(A-334) Simultaneous LIF Visualization of Spatial Distributions of OH Radicals and Fuel Concentrations both Inside and Outside of the Pre-mixing Duct of a Lean Staging Burner for an Aero Engine at High Temperature and High Pressure Burning Conditions
*Sunao OHORI, Takahiro EGUCHI (Hosei Univ.), Kazuaki MATSUURA, Hideshi YAMADA, Yoji KUROSAWA, Takeshi YAMAMOTO, Kazuo SHIMODAIRA (JAXA), Shigeru HAYASHI (Hosei Univ.)

A34: Numerical Simulation  Dec. 20  15:00-16:40  Room A
Chair: Prof. C. INOUE, The Univ. of Tokyo
【A-341】 Effect of The Evaporation Characteristics on The Hydrocarbon Fuel Ignition Characteristics
*Motohiro OSHIMA (Fukui Univ. of Tech.), Yasuyuki SAKAI (Fukui Univ.)

【A-342】 Numerical Simulation on Mixture Process of Urea-Water in Urea SCR
*Masayoshi HAYASHI, Akira SOU (Kobe Univ.)

【A-343】 Numerical Simulation of Fuel Film Deformation
*Ipppei OSHIMA, Akira SOU (Kobe Univ.)

【A-344】 Modeling of Droplet Collision Behavior between Two Merging Sprays
*Hiroshi TASHIMA, Daisuke TSURU, Kota HIDAKA (Kyushu Univ.)

B31: Spray Behavior  Dec. 20  9:00-10:40  Room B
Chair: Prof. J. HAYASHI, Osaka Univ.
【B-311】 Droplet Diameter and Atomization Process of Airblast Atomizer in a High Pressure Environment
*Kodai KATO, Soichiro SUZUKI, Taku KUDO (Tohoku Univ.), Soichiro KATO, Mitsunori ITOH (IHI Co.), Akihiro HAYAKAWA, Hideaki KOBAYASHI (Tohoku Univ.)

【B-312】 Effect of Air Flow on Liquid Film Formation in a Prefilming Type Air-blast Atomizer
*Mitsunori ITOH, Shinsuke MATSUNO (IHI Co.)
Temperature History of an Evaporating Droplet of Palm Methyl Ester at High Temperatures and Pressures
*Kentaro KANEKO, Hiroshi NOMURA (Nihon Univ.),
Nozomu HASHIMOTO (Central Research Institute of Electric Power Industry)

Atomization Characteristics and its Modeling of Impinging Jet Atomization in high Reynolds number regime
*Takao INAMURA, Minori SHIROTA, Yuki SAITO, Ryota SAKABE, Koji FUMOTO (Hirosaki Univ.)

B32: Spray Combustion I  Dec. 20  10:50-12:05  Room B
Chair: Prof. O. MORIUE, Kyushu Univ.

Experimental Study on Fuel Atomization and Combustion Characteristics of Airblast Fuel Injectors
*Takeshi MASUDA, Hidemi TOH (Kanazawa Inst. of Tech.)

Study of Spray Flame Structure in Aircraft Gas Turbine Combustor
*Ryuhei KAWANO, Jun HAYASHI (Osaka Univ.), Hideki MORIYAMA,
Noriaki NAKATSUKA (MHI, Ltd.), Noriaki NAKATSUKA, Fumiteru AKAMATSU (Osaka Univ.)

The Effect of Ethanol Spray Concentration on Laser-induced Breakdown Ignition
*Yuki ISHIMURA, Takehiko SEO, Masato MIKAMI (Yamaguchi Univ.)

B33: Particle / Powder Production I  Dec. 20  13:10-14:50  Room B
Chair: Prof. M. Oshima, Fukui Univ. of Tech.

Analysis of Mutual Diffusion Behavior Affecting on Cluster Formation at Droplet Interfaces
*Kazuki GONDA, Taiki WAKE, Atsuko SHIMOSAKA, Yoshiyuki SHIRAKAWA,
Jusuke HIDAKA (Doshisha Univ.)

Synthesis of Composite Particle by using Atomization Process in Micro Reactors
*Yuya HATTORI, Yoshiyuki SHIRAKAWA, Atsuko SHIMOSAKA,
Jusuke HIDAKA (Doshisha Univ.)

Development of Particle Morphology Control Technique in an Atomization Process of Solutions
*Hikaru TAMURA, Yoshiyuki SHIRAKAWA, Atsuko SHIMOSAKA,
Jusuke HIDAKA (Doshisha Univ.)

Adaptation of Electrostatic Spray Deposition to Thin-Electrolyte-Film Fabrication of a Tabular Solid Oxide Fuel Cell
*Takahiro AOKI, Takashi AOKI, Hiroshi NOMURA (Nihon Univ.)

B34: Particle / Powder Production II  Dec. 20  15:00-16:40  Room B
Chair: Prof. Y. ZAMA, Gunma Univ.

Influence of Solute Materials and Organic Solvents on Interfacial Tension in a Liquid-liquid Interface Crystallization Process
*Yurie MATSUO, Yoshiyuki SHIRAKAWA, Atsuko SHIMOSAKA,
Jusuke HIDAKA (Doshisha Univ.)

Electrostatic Spray Deposition of Electrolyte Material onto a Porosity-Increased Fuel Electrode of Solid Oxide Fuel Cell and the Performance Test Results
*Takashi AOKI, Hiroshi NOMURA (Nihon Univ.), Hitoshi HARADA, Tomonori ASANO (Noritz Co.)

Radical Formation of Amino Acid Particles by using Mechanochemical Processes
*Atsushi YAMAMOTO, Yoshiyuki SHIRAKAWA, Atsuko SHIMOSAKA,
Jusuke HIDAKA (Doshisha Univ.)

Study of Flame Synthesis Method for Nanoparticles by Flash Boiling Spray
*Anna YONEDA (Doshisha Univ.) Motohiro OSHIMA (Fukui Univ. of Tech.),
Kozo ISHIDA (HORIBA, Ltd.), Eriko MATSUMURA, Jiro SENDA (Doshisha Univ.)