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International Conference on Optical Particle Characterization (OPC 2014)

**Nobuhiro Aya
Norihiro Iki
Tsutomu Shimura
Tomohiro Shirai**
Editors

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Contents

ix	Conference Committee
xiii	Introduction

INVITED LECTURE

9232 02	A review on laser diagnostics on atomization and evaporation of liquid fuel (Invited Paper) [9232-31] Y. Zhang, S. Li, B. Lin, Shanghai Jiao Tong Univ. (China); Y. Liu, J. Wu, B. Xu, Henan Univ. of Science and Technology (China)
9232 03	Characterisation of particle assemblies by 3D cross correlation light scattering and diffusing wave spectroscopy (Invited Paper) [9232-501] F. Scheffold, Univ. of Fribourg (Switzerland)

NOVEL THEORETICAL METHODS

9232 04	A numerical evaluation of iterative solvers for the solution of static light scattering problems [9232-44] H. Sugawara, M. Umezawa, HORIBA Ltd. (Japan); K. Park, HORIBA Instruments Inc. (United States)
9232 05	Estimation of equivalence ratio distribution in diesel spray using a computational fluid dynamics [9232-24] Y. Suzuki, T. Tsujimura, National Institute of Advanced Industrial Science and Technology (Japan); J. Kusaka, Waseda Univ. (Japan)
9232 06	Hybrid Mie-MCML Monte Carlo simulation of light propagation in skin layers [9232-28] Y. Kawai, T. Iwai, Tokyo Univ. of Agriculture and Technology (Japan)
9232 07	Optical caustics associated with the primary and the secondary rainbows of oblate droplets [9232-14] H. Yu, Univ. of Shanghai for Science and Technology (China) and Technische Univ. Darmstadt (Germany); J. Shen, Univ. of Shanghai for Science and Technology (China); C. Tropea, Technische Univ. Darmstadt (Germany)
9232 08	Scattering of electromagnetic radiation based on numerical calculation of the T-matrix through its integral representation [9232-15] U. Tricoli, K. Pfeilsticker, Univ. of Heidelberg (Germany)

FUEL SPRAY

- 9232 09 **Laser-diffraction based drop-sizing system using image sensor** [9232-19]
T. Suzuki, K. Harase, Toyohashi Univ. of Technology (Japan)
- 9232 0A **Measurement of vapor/liquid distributions in a binary-component fuel spray using laser imaging of droplet scattering and vapor absorption** [9232-25]
S. Li, Y. Zhang, S. Wu, Shanghai Jiao Tong Univ. (China); B. Xu, Henan Univ. of Science and Technology (China)
- 9232 0B **Particulate morphology of waste cooking oil biodiesel and diesel in a heavy duty diesel engine** [9232-16]
J. Hwang, KAIST (Korea, Republic of); Y. Jung, Sandia National Labs. (United States); C. Bae, KAIST (Korea, Republic of)
- 9232 0C **PTV analysis of the entrained air into the diesel spray at high-pressure injection** [9232-22]
N. Toda, H. Yamashita, Nippon Soken, Inc. (Japan); M. Mashida, DENSO Corp. (Japan)

DROPLETS

- 9232 0D **Convection and surface tension profiles for aqueous droplet under microwave radiation** [9232-9]
Y. Kanazawa, M. Asada, Y. Asakuma, I. Honda, Univ. of Hyogo (Japan); C. Phan, H. Parmar, V. Pareek, Curtin Univ. (Australia); G. Evans, Univ. of Newcastle (Australia)
- 9232 0E **Detection and evaluation of droplet and bubble fringe patterns in images of planar interferometric measurement techniques using the wavelet transform** [9232-47]
Y. Hardalupas, A. P. Taylor, Imperial College London (United Kingdom); K. Zarogoulidis, Imperial College London (United Kingdom) and Keio Univ. (Japan)
- 9232 0F **In-situ observation of convection in droplet under microwave radiation by PIV** [9232-12]
M. Asada, Y. Kanazawa, Y. Asakuma, I. Honda, Univ. of Hyogo (Japan); C. Phan, H. Parmar, V. Pareek, Curtin Univ. (Australia); G. Evans, The Univ. of Newcastle (Australia)
- 9232 0G **Micro-explosion of compound drops** [9232-18]
C. Chen, T. Lin, National Cheng Kung Univ. (Taiwan)
- 9232 0H **The time-shift technique for measurement size of non-transparent spherical particles** [9232-6]
W. Schäfer, C. Tropea, Technische Univ. Darmstadt (Germany) and AOM-Systems GmbH (Germany)

NANOPARTICLES

- 9232 0I **High-sensitivity low-coherence dynamic light scattering and particle sizing for nanoparticles (II): SM-fiber probe system applied to dense particle suspensions** [9232-23]
S. Nakamura, Y. Sato, FUJIFILM Corp. (Japan); K. Ishii, The Graduate School for the Creation of New Photonics Industries (Japan)

- 9232 0J **Measurement of dispersion of nanoparticles in a dense suspension by high-sensitivity low-coherence dynamic light scattering** [9232-4]
K. Ishii, The Graduate School for the Creation of New Photonics Industries (Japan);
S. Nakamura, Y. Sato, FUJIFILM Corp. (Japan)
- 9232 0K **On the size and morphological characterization of needle-shaped TiO₂ nanoparticles in suspension** [9232-32]
F. A. Onofri, C. Pelcé, L. Meister, Institut Univ. des Systèmes Thermiques Industriels, CNRS, Aix-Marseille Univ. (France); C. Montet, Institut Univ. des Systèmes Thermiques Industriels, CNRS, Aix-Marseille Univ. (France) and CILAS (France); P. Pelcé, Institut de Recherche sur les Phénomènes Hors Équilibre, CNRS, Aix-Marseille Univ. (France); S. Barbosa, M. Sentis, Institut Univ. des Systèmes Thermiques Industriels, CNRS, Aix-Marseille Univ. (France); M. Bizi, BRGM (France)
- 9232 0L **Recent activity of international comparison for nanoparticle size measurement** [9232-13]
K. Takahashi, K. Takahata, I. Misumi, K. Sugawara, S. Gonda, K. Ehara, National Institute of Advanced Industrial Science and Technology (Japan)
- 9232 0M **Single nanoparticle imaging method based on photothermal effect by use of single element interferometer** [9232-33]
Y. Nagata, Y. Mizutani, T. Iwata, Univ. of Tokushima (Japan); Y. Otani, Utsunomiya Univ. (Japan)

AEROSOLS AND ENVIRONMENTAL MONITORING

- 9232 0N **Aerosol characterization with lidar methods** [9232-43]
N. Sugimoto, T. Nishizawa, A. Shimizu, I. Matsui, National Institute for Environmental Studies (Japan)
- 9232 0O **Flow visualization of a non-contact transport device by Coanda effect** [9232-36]
N. Iki, H. Abe, T. Okada, National Institute of Advanced Industrial Science and Technology (Japan)
- 9232 0P **Measurement of aerosol hydration states using the EDB coupled to a Raman spectrometer** [9232-8]
Y. Ishizaka, A. Harano, Gunma Univ. (Japan)
- 9232 0Q **New apparatus of single particle trap system for aerosol visualization** [9232-21]
H. Higashi, Kanazawa Univ. (Japan); T. Fujioka, T. Endo, Taisei Corp. (Japan); C. Kitayama, T. Seto, Y. Otani, Kanazawa Univ. (Japan)
- 9232 0R **Offshore wind profile measurements using a Doppler LIDAR at the Hazaki Oceanographical Research Station** [9232-5]
S. Shimada, National Institute of Advanced Industrial Science and Technology (Japan); T. Ohsawa, Kobe Univ. (Japan); T. Ohgishi, Y. Kikushima, T. Kogaki, National Institute of Advanced Industrial Science and Technology (Japan); K. Kawaguchi, S. Nakamura, PARI (Japan)

ULTRAFINE BUBBLES

- 9232 0S **Measurement and identification of ultrafine bubbles by resonant mass measurement method** [9232-42]
H. Kobayashi, S. Maeda, M. Kashiwa, T. Fujita, IDEC Corp. (Japan)
- 9232 0T **Measurement of the change in the number of ultrafine bubbles through pressurization** [9232-7]
T. Tuziuti, K. Yasui, W. Kanematsu, National Institute of Advanced Industrial Science and Technology (Japan)
- 9232 0U **Measurements of ultrafine bubbles using different types of particle size measuring instruments** [9232-37]
H. Kobayashi, S. Maeda, M. Kashiwa, T. Fujita, IDEC Corp. (Japan)
- 9232 0V **The effect of dilution on the quantitative measurement of bubbles in high-density ultrafine bubble-filled water using the light scattering method** [9232-41]
S. Maeda, H. Kobayashi, K. Ida, M. Kashiwa, I. Nishihara, T. Fujita, IDEC Corp. (Japan)

BIOMEDICAL APPLICATIONS

- 9232 0W **Estimation of trapping position in three-dimensional off-axis trapping with optical vortices** [9232-48]
T. Ando, T. Otsu, Y. Takiguchi, Y. Ohtake, H. Toyoda, H. Itoh, Hamamatsu Photonics K.K. (Japan)
- 9232 0X **Optical characterization of facial foundation applied to skin replicas by using visible FF-OCT** [9232-30]
R. Kimura, T. Iwai, Tokyo Univ. of Agriculture and Technology (Japan); T. Tsugita, KAO Corp. (Japan)
- 9232 0Y **Topological imaging of blood vessels by using diffusing light** [9232-27]
S. Kohama, T. Iwai, Tokyo Univ. of Agriculture and Technology (Japan)

CONTEMPORARY ISSUES

- 9232 0Z **Energy transfer mechanisms in green emitting LiBaPO₄:Tb³⁺ phosphors** [9232-45]
R. Yang, National Pingtung Univ. of Science and Technology (Taiwan); H. Lai, Y. Peng, S. Chang, National Cheng Kung Univ. (Taiwan)
- 9232 10 **Laser diffraction of acicular particles: practical applications** [9232-49]
D. M. Scott, DuPont Co. (United States) and Scott Applied Research (United States); T. Matsuyama, Soka Univ. (Japan)

- 9232 11 **Optical measurement method for particles on printed substrate by light-scattering**
[9232-35]
K. Shibakiri, S. Fujii, N. Kagi, Tokyo Institute of Technology (Japan)

Author Index

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- 1 Spray/Droplet
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- 2 Droplet/Combustion
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Takashi Suzuki, Toyohashi University of Technology (Japan)
- 3 Droplet
Yuyin Zhang, Shanghai Jiao Tong University (China)
Takashi Suzuki, Toyohashi University of Technology (Japan)

- 4 Bubble
Denis Koltsov, BREC Solutions Ltd. (United Kingdom)
Nobuhiro Aya, AIST (Japan)
- 5 Simulation
Fabrice Onofri, CNRS, Aix-Marseille Université (France)
Katsuhiro Ishii, Graduate School for the Creation of New Photonics Industries (Japan)
- 6 Droplet II
Norihiko Iki, AIST (Japan)
- 7 Diffraction Method
Tatsushi Matsuyama, Soka University (Japan)
Makoto Umezawa, HORIBA Ltd. (Japan)
- 8 Flow/Environment Monitoring
William D. Bachalo, Atrium Technologies Inc. (United States)
Shigehisa Endoh, Technology Research Association for Single Wall Carbon Nanotubes (Japan)
- 9 Nucleation and Growth
Paul E. Wagner, Universität Wien (Austria)
Masayuki Itoh, Doshisha University (Japan)
- 10 Contemporary Issues
Tsutomu Shimura, The University of Tokyo (Japan)
- 11 Low-coherence DLS
Frank Scheffold, University of Fribourg (Switzerland)
Toshiaki Iwai, Tokyo University of Agriculture and Technology (Japan)
- 12 Aerosols
Norikazu Namiki, Kogakuin University (Japan)
- 13 Surface
Kayori Takahashi, AIST (Japan)
- 14 Trapping
Tsutomu Shimura, The University of Tokyo (Japan)
- 15 Nanoparticle
Wuled Lenggoro, Tokyo University of Agriculture and Technology (Japan)
Katsuhiro Ishii, Graduate School for the Creation of New Photonics Industries (Japan)

Introduction

There are continuing and growing needs for techniques to determine the behaviors and characteristics of particles and the developments of nano-materials in science, engineering, medicine, human-environment, and leading industries. Optical methods are the most powerful tools, and they are capable of rapid on-line and in-situ measurement of various sizes of particles and their behaviors from molecular clusters to raindrops.

The International Conference on Optical Particle Characterization (OPC 2014) was held 10–14 March 2014 at the AIST Tokyo Waterfront, Tokyo, Japan, in order to discuss not only the optical measurement of particle concentration, size, shape, structure, and composition in various phases, but also the optical handling of particulate matter with the traditional and novel methods. It was the 10th international scientific conference which aims to contribute to development of the whole science and technology on the particle characterization with light, succeeding the basic principle of the previous successful series of conferences on OPC (and OPS = Optical Particle Sizing—the former name of the conference series) since 1987.

Forty-six oral presentations were accepted and made in 15 sessions at OPC 2014. Five invited lectures were given by the following leading scientists who were recommended by the international advisory committee and the program committee of OPC2014, viz., Dr. W. Bachalo, Atrium Technologies Inc. (United States), Prof. F. Scheffold, University of Fribourg (Switzerland), Prof. M. Shibayama, The University of Tokyo (Japan), Prof. P. Wagner, University of Vienna (Austria), and Prof. Y. Zhang, Shanghai Jiao Tong University (China). Also, Dr. D. Koltsov, BREC Solutions Ltd. (United Kingdom), gave a special lecture titled “Nanomaterials and fine bubbles standardisation and regulation” at the joint workshop of OPC2014, AIST, and FBIA (Fine Bubble Industry Association) held on the opening day of OPC2014.

Very fruitful discussions were made at OPC 2014. The conference program covered theoretical and experimental works, pertaining to the fundamentals of optical particle sizing and characterization, as well as its scientific, technological, and industrial applications.

In this proceeding volume, 36 original papers are published from among the studies presented at OPC 2014 after a post-conference peer reviewing process

coordinated by the scientists on each field including the chairs of the sessions and the committee members. Two of the invited papers are also included.

Handwritten signature of Nobuhiro Aya in blue ink, consisting of the characters '綾' and '博'.

Nobuhiro Aya