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# **BIOPHOTONICS JAPAN.**

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Conferences: 27–28 October 2015

University of Tsukuba  
Tokyo Campus  
Tokyo, Japan

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**SPiE.** | **BIOPHOTONICS**  
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**Conference: 27-28 October 2015**

**University of Tsukuba  
Tokyo Campus, Tokyo, Japan**



# Welcome

SPIE and the Optical Society of Japan welcome you to SPIE/OSJ Biophotonics Japan. This special symposium will take place in Tokyo from 27-28 October 2015 at the Tokyo Campus of Tsukuba University.

Biophotonics employs the science and technology of photonics to improve biological sensing, imaging, analysis, and therapy. These topical areas highlight the way that researchers and practitioners are using light-based technologies to develop the future of medicine and biotechnology. SPIE and OSJ are proud to jointly host this symposium to promote the latest research in these important fields.

In recognition of the global impact of light-based technology, 2015 will be the UNESCO's International Year of Light, which will commemorate and raise awareness of the contributions of optical science to humankind. The SPIE/OSJ Biophotonics Japan symposium will be an enthusiastic participant in this worldwide celebration.

This symposium will include both oral and poster presentations with manuscripts published in the Proceedings of SPIE. In addition to contributed work, distinguished international experts in the field of biomedical optics will present invited talks.

We look forward to welcoming you in Tokyo!

Symposium Chair:

**Takashige Omatsu**, Chiba Univ. (Japan)

Symposium Co-Chair:

**Yoshio Hayasaki**, Utsunomiya Univ. (Japan)

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## **CHAIRS AND COMMITTEE MEMBERS**

Symposium Chair:

**Takashige Omatsu**, Chiba Univ. (Japan)

Symposium Co-Chair:

**Yoshio Hayasaki**, Utsunomiya Univ. (Japan)

Conference Chairs

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**Yoshio Hayasaki**, Utsunomiya Univ. (Japan)

**Yusuke Ogura**, Osaka Univ. (Japan)

**Yasuyuki Ozeki**, The Univ. of Tokyo (Japan)

**Seigo Ohno**, Tohoku Univ. (Japan), RIKEN (Japan)

**Yukitoshi Otani**, Utsunomiya Univ. (Japan)

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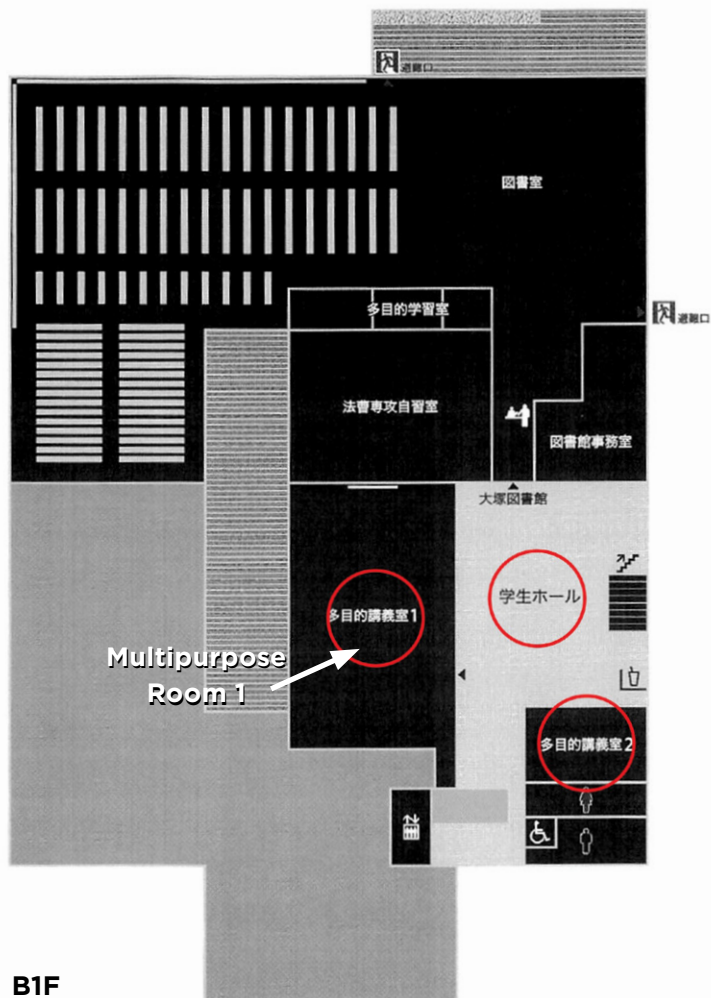
**Ichiro Shoji**, Chuo Univ. (Japan)

**Teruki Sugiyama**, Instrument Technology Research Ctr. (Taiwan)

**Takeshi Yasui**, The Univ. of Tokushima (Japan)

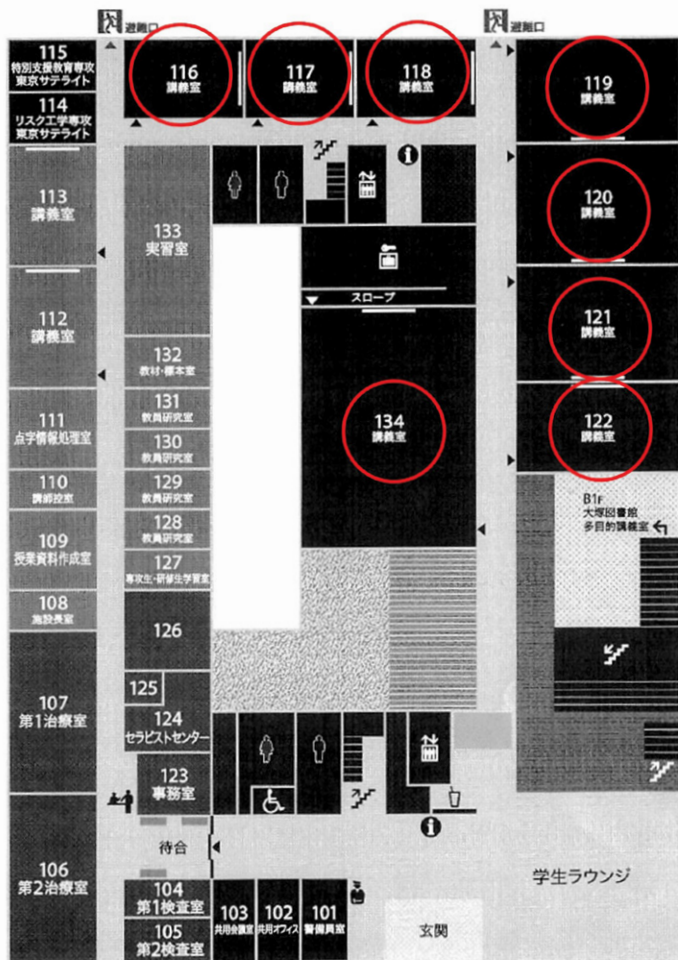
# FLOOR 0 ROOM LOCATIONS

## Tuesday Poster Session and Welcome Reception



**B1F**

# FLOOR 1 ROOM LOCATIONS



1F

### **SPIE/OSJ Biophotonics Japan Plenary Session**

Tuesday 27 October 2015 · 8:40 AM to 10:10 AM

Location: Room 134

8:40 am:

#### **OPENING REMARKS**

**Takashige Omatsu**, Chiba Univ. (Japan)

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8:50 am:

#### **OPTICAL IMAGING FOR EARLY-STAGE CANCER DETECTION**



**Jennifer Kehlet Barton**, The Univ. of Arizona (United States)

**Abstract:** With multiple mechanisms of contrast, high sensitivity, high resolution, and the possibility to create miniature, inexpensive devices, light-based techniques have tremendous potential to positively impact cancer detection and survival. Microscopic imaging of cells and tissues removed from the body is already the gold standard for detection and diagnosis of many cancers, and much recent research

is focused on taking the microscope into the body for in situ detection. In this talk, I will discuss our recent advancements in miniature endoscope design for optical coherence tomography, fluorescence spectroscopy, and multiphoton imaging. These endoscopes can enable minimally-invasive outpatient imaging, even for deeply buried organs such as the ovary.

**Biography:** **Jennifer Kehlet Barton**, Ph.D. (SPIE Fellow) is Professor of Biomedical Engineering and Associate Vice President for Research at the University of Arizona. Her research focuses on development of miniature multi-modality optical endoscopes for early detection of cancer, including instrumentation design, pre-clinical experiments, and translation to human pilot clinical studies.

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9:30 am:

#### **INTERFEROMETRIC AND NONLINEAR-OPTICAL SPECTRAL-IMAGING TECHNIQUES FOR OUTER SPACE AND LIVE CELLS**



**Kazuyoshi Itoh**, Osaka Univ. (Japan)

**Abstract:** Multidimensional signals such as the spectral images allow us to have deeper insights into the natures of objects. In this paper the spectral imaging techniques that are based on optical interferometry and nonlinear optics are presented.

*Continued*

## **SPECIAL EVENTS**

### **Interferometric and Nonlinear-Optical Spectral-Imaging Techniques for Outer Space and Live Cells** *Plenary continued*

The interferometric imaging technique is based on the unified theory of Van Cittert-Zernike and Wiener-Khinchine theorems and allows us to retrieve a spectral image of an object in the far zone from the 3D spatial coherence function. The retrieval principle is explained using a fundamental incoherent object in a simple manner. The promising applications to space interferometers for astronomy that are currently in progress will also be briefly touched on. An interesting extension of interferometric spectral imaging is a 3D and spectral imaging technique that records 4D information of objects where the 3D and spectral information is retrieved from the cross-spectral density function of optical field. The 3D imaging is realized via the numerical inverse propagation of the cross-spectral density. A few techniques suggested recently are introduced. The nonlinear optical technique that utilizes stimulated Raman scattering (SRS) for spectral imaging of biomedical targets is presented lastly. The strong signals of SRS permit us to get vibrational information of molecules in the live cell or tissue in real time. The vibrational information of unstained or unlabeled molecules is crucial especially for medical applications. The 3D information due to the optical nonlinearity is also the attractive feature of SRS spectral microscopy.

### **SPIE/OSJ Biophotonics Japan Poster Session**

Tuesday 27 October 2015 · 1:30 PM to 3:10 PM

Location: Multipurpose Room 1

Conference attendees are invited to attend the poster session on Tuesday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster authors can set up presentations between 9.30 and 12.00. Posters that are not set up by 12.00 will be considered a No-Show. Poster presentation guidelines can be viewed at <http://spie.org/x112796.xml>.

### **SPIE/OSJ Biophotonics Japan Welcome Reception**

Tuesday 27 October 2015 · 6:00 PM - 8:00 PM

Location: Multipurpose Room 1

All registered conference attendees are invited to relax, socialize, and enjoy refreshments. Please remember to wear your conference registration badge (required). Guest badge may be purchased during the registration process or at the registration desk on site.



**CONFERENCE 9792**  
**LOCATIONS: ROOMS 134 AND 122**

**Tuesday - Wednesday 27-28 October 2015**  
**Proceedings of SPIE Vol. 9792**

# **SPIE/OSJ**

# **Biophotonics Japan**

*Conference Chairs:* **Takashige Omatsu**, Chiba Univ. (Japan); **Yoshio Hayasaki**, Utsunomiya Univ. (Japan); **Yusuke Ogura**, Osaka Univ. (Japan); **Yasuyuki Ozeki**, The Univ. of Tokyo (Japan); **Seigo Ohno**, Tohoku Univ. (Japan), RIKEN (Japan)

*Program Committee:* **Satoshi Ashihara**, Tokyo Univ. of Agriculture and Technology (Japan); **Katsumasa Fujita**, Osaka Univ. (Japan); **Takanori Nomura**, Wakayama Univ. (Japan); **Yukitoshi Otani**, Utsunomiya Univ. (Japan); **Fabian Rotermund**, Ajou Univ. (Korea, Republic of); **Toshiharu Saiki**, Keio Univ. (Japan); **Ichiro Shoji**, Chuo Univ. (Japan); **Teruki Sugiyama**, Instrument Technology Research Ctr. (Taiwan); **Brian Wong**, Beckman Laser Institute and Medical Clinic (USA); **Takeshi Yasui**, The Univ. of Tokushima (Japan)

## **TUESDAY 27 OCTOBER**

**Location: Room 134 .....8:40 to 10:10**

### **Plenary Session**

8:40 am: Opening Remarks: Takashige Omatsu, Chiba Univ. (Japan)

8:50: **Optical imaging for early-stage cancer detection** (*Plenary*), Jennifer Kehlet Barton, The Univ. of Arizona (USA) ..... [9792-101]

9:30: **Interferometric and nonlinear-optical spectral-imaging techniques for outer space and live cells** (*Plenary*), Kazuyoshi Itoh, Osaka Univ. (Japan)..... [9792-102]

# CONFERENCE 9792

## LOCATIONS: ROOMS 134 AND 122

*Session 1A runs concurrently with session 1B.*

Coffee Break ..... Tue 10:10 to 10:40

### SESSION 1A

**Location: Room 134 ..... Tue 10:40 to 12:00**

### Nonlinear Microscopy

Session Chair: **Satoshi Ashihara**, The Univ. of Tokyo (Japan)

10:40: **A shifted-excitation Raman difference spectroscopy (SERDS) evaluation strategy for the efficient isolation of Raman spectra from extreme fluorescence interference**, Medhanie Tesfay Gebrekidan, Andreas Braeuer, Christian Knipfer, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany) ..... [9792-1]

11:00: **Stimulated Raman multispectral imaging with two-color picosecond laser pulses from a gain-switched laser diode and a Ti:sapphire laser**, Yasuyuki Ozeki, Kyoya Tokunaga, The Univ. of Tokyo (Japan); Yi-Cheng Fang, Yuta Kusama, Hiroyuki Yokoyama, Tohoku Univ. (Japan) ..... [9792-2]

11:20: **In situ monitoring of biomolecular processes in living systems using surface-enhanced Raman scattering**, Mine Altunbek, Seda Kelestemur, Mustafa Çulha, Yeditepe Univ. (Turkey) ..... [9792-3]

11:40: **Alkyne-tag Raman imaging of bio-active small molecules in live cells**, Jun Ando, Osaka Univ. (Japan) and AMED-CREST, AMED (Japan) and RIKEN (Japan); Almar F. Palonpon, Osaka Univ. (Japan); Hiroyuki Yamakoshi, RIKEN (Japan); Kosuke Dodo, RIKEN (Japan) and AMED-CREST, AMED (Japan); Satoshi Kawata, Osaka Univ. (Japan); Mikiko Sodeoka, RIKEN (Japan) and AMED-CREST, AMED (Japan); Katsumasa Fujita, Osaka Univ. (Japan) and AMED-CREST, AMED (Japan) ..... [9792-4]

Lunch Break ..... Tue 12:00 to 13:30

# CONFERENCE 9792

## LOCATIONS: ROOMS 134 AND 122

*Session 1A runs concurrently with session 1B.*

### SESSION 1B

**Location: Room 122 . . . . . Tue 10:40 to 12:00**

#### **Holographic Microscopy**

Session Chair: **Takanori Nomura**, Wakayama Univ. (Japan)

10:40: **Enhancement mechanism of fluorescence intensity in presence of plasmonic nanoparticles**, Sumana Das, Ramakrishna Vasireddi, Krishna Harika, Brahmanandam Javvaji, Gopalkrishna M. Hegde, D. Roy Mahapatra, Indian Institute of Science (India) . . . . . [9792-5]

11:00: **Annealing effect of TiO<sub>2</sub> nanostructure synthesized by sol-gel for dye sensitized solar cells**, Ari H. Ramelan, Sayekti Wahyuningsih, Sulistyio Saputro, Univ. Sebelas Maret (Indonesia) . . . . . [9792-6]

11:20: **Magneto-optical surface plasmon resonance biosensor based on Au nanoparticles and Au film hybrid structure**, Yuzhang Liang, Shuwen Chu, Lixia Li, Wei Peng, Dalian Univ. of Technology (China). . . . . [9792-7]

11:40: **Holographic mapping of fluorescent nanoparticles**, Ryosuke Abe, Yoshio Hayasaki, Utsunomiya Univ. (Japan). . . . . [9792-8]

Lunch Break . . . . . Tue 12:00 to 13:30

# CONFERENCE 9792

## POSTER SESSION—TUESDAY

**Location: Multipurpose Room 1 . . . . . Tue 13:30 to 15:10**

Conference attendees are invited to attend the poster session on Tuesday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

**Signal maximization in deep-tissue three-photon microscopy**, Ke Wang, Ping Qiu, Shenzhen Univ. (China) . . . . . [9792-42]

**Optical coherence tomography with pre-calculated reference spectrum**, Yi Wang, Xiaodong Chen, Xiaojie Chen, Daoyin Yu, Tianjin Univ. (China) [9792-43]

**Assessment of laser speckle flowgraphy: Development of novel cutaneous blood flow measurement technique**, Yoshinao Nagashima, KAO Corp. (Japan) and Kyushu Institute of Technology (Japan); Yuko Ohsugi, Yoshifumi Niki, Kouji Maeda, KAO Corp. (Japan); Takashi Okamoto, Kyushu Institute of Technology (Japan). . . . . [9792-45]

**Real-time system for extracting and monitoring cerebral functional component during fNIRS measurement**, Toru Yamada, AIST (Japan); Mitsuo Ohashi, Spectratech inc. (Japan); Shinji Umeyama, AIST (Japan) . [9792-46]

**Numerical study of light propagation in agricultural products for non-destructive assessment of food quality**, Kiyohito Hattori, Hiroyuki Fujii, Yuki Tatekura, Kazumichi Kobayashi, Masao Watanabe, Hokkaido Univ. (Japan). . . . . [9792-47]

**Expansion of dynamic range in Shack-Hartmann wavefront sensor using dual microlens array**, Hironobu Shinto, Yusuke Saita, Takanori Nomura, Wakayama Univ. (Japan). . . . . [9792-48]

**Optical properties of the light-emitting biomaterial based on DNA-cetyltrimethylammonium chloride surfactant doped with riboflavin**, Woo Hyun Jung, Byungjoo Kong, Seongjin Hong, Kyunghwan Oh, Yonsei Univ. (Korea, Republic of). . . . . [9792-49]

**Autofluorescence spectro-endomicroscopy of alveoli: comparative spectral analysis of healthy smoker volunteers and amiodarone-induced pneumonitis patients**, Christine Vever-Bizet, Univ. Pierre et Marie Curie (France); Geneviève Bourg-Heckly, Univ. Pierre et Marie Curie (France) and Lab. Jean Perrin, CNRS (France); Mathieu Salaün, Luc Thiberville M.D., Rouen Univ. Hospital (France); Walter C. P. M. Blondel, Univ. de Lorraine (France) and Ctr. de Recherche en Automatique de Nancy, CNRS (France) . . . . . [9792-50]

## CONFERENCE 9792

**Alternative natural dyes in water purification: Anthocyanin as  $TiO_2$ -sensitizer in rhodamin B photoelectrodegradation**, Sayekti Wahyuningsih, Ari Handono Ramelan, Ganjar Fadillah, Rahmat Hidayat, Hanik Munawaroh, Liya N. M. Z. Saputri, Qonita A. Hanif, Univ. Sebelas Maret (Indonesia) . . . . . [9792-51]

**Protein crystal nucleation and growth triggered by switch-off of laser trapping**, Teruki Sugiyama, Instrument Technology Research Ctr. (Taiwan) . . . . . [9792-52]

**Multiply charged ion plasma sources for compact x-ray microscopy in the water window spectral region**, Thanh Hung Dinh, Yoshiki Kondo, Goki Arai, Utsunomiya Univ. (Japan); Taisuke Miura, Akira Endo, Institute of Physics of the ASCR, v.v.i. (Czech Republic); Tetsuya Makimura, Univ. of Tsukuba (Japan); Padraig Dunne, Gerard D. O'Sullivan, Univ. College Dublin (Ireland); Tadashi Hatano, Takeo Ejima, Tohoku Univ. (Japan); Takeshi Higashiguchi, Utsunomiya Univ. (Japan) . . . . . [9792-53]

**Estimation of crosstalk in LED fNIRS by photon propagation Monte Carlo simulation**, Takayuki Iwano, Shinji Umeyama, National Institute of Advanced Industrial Science and Technology (Japan) . . . . . [9792-54]

**Development of a 10-Hz short pulse  $CO_2$  laser for short wavelength light sources**, Reiho Amano, Atsushi Sasanuma, Thanh Hung Dinh, Goki Arai, Yusuke Fujii, Utsunomiya Univ. (Japan); Akihiko Takahashi, Daisuke Nakamura, Tatsuo Okada, Kyushu Univ. (Japan); Tetsuya Makimura, Univ. of Tsukuba (Japan); Taisuke Miura, Akira Endo, Institute of Physics of the ASCR, v.v.i. (Czech Republic); Padraig Dunne, Gerard D. O'Sullivan, Univ. College Dublin (Ireland); Takeshi Higashiguchi, Utsunomiya Univ. (Japan) . . . . . [9792-55]

**Optical characterization of murine model's in-vivo skin using Mueller matrix polarimetric imaging**, Azael Mora-Núñez, Univ. de Guadalajara (Mexico); Geminiano Martinez-Ponce, Ctr. de Investigaciones en Óptica, A.C. (Mexico); Guillermo Garcia-Torales, Univ. de Guadalajara (Mexico) . . . [9792-56]

**In situ visualization of keratinocyte differentiation and langerhans cells in human epidermis using stimulated Raman scattering microscopy**, Mariko Egawa, Shiseido Co., Ltd. (Japan); Kyoya Tokunaga, The Univ. of Tokyo (Japan); Junichi Hosoi, Shinya Iwanaga, Shiseido Co., Ltd. (Japan); Yasuyuki Ozeki, The Univ. of Tokyo (Japan) . . . . . [9792-57]

**Widely tunable near-infrared optical vortex parametric oscillator**, Roukuya Mamuti, Aizitiaili Abulikemu, Yusufu Taximaiti, Katsuhiko Miyamoto, Takashige Omatsu, Chiba Univ. (Japan) . . . . . [9792-58]

**Preparation and sensing application of GNS-based optical fiber LSPR probe**, Lixia Li, Yuzhang Liang, Jianye Guang, Wei Peng, Dalian Univ. of Technology (China) . . . . . [9792-59]

## CONFERENCE 9792

**Glycine crystallization by structured light illumination**, Junhyung Lee, Manabu Magarisawa, Shunsuke Toyoshima, Katsuhiko Miyamoto, Takashige Omatsu, Chiba Univ. (Japan). . . . . [9792-60]

**Chirality control in mid-infrared optical vortex parametric laser**, Azusa Ogawa, Tomoki M. Horikawa, Kana Ando, Katsuhiko Miyamoto, Takashige Omatsu, Chiba Univ. (Japan). . . . . [9792-61]

**Multispectral Stokes polarimetry for dermatoscopic imaging**, Yoshio Eduardo Castillejos de los Santos, Geminiano Martínez-Ponce, Ctr. de Investigaciones en Óptica, A.C. (Mexico); Azael Mora-Nuñez, Univ. de Guadalajara (Mexico); Rogelio Castro-Sanchez, Univ. de Guanajuato (Mexico). . . . . [9792-63]

**Photoacoustic generation of high-amplitude ultrasound by using a solution-processed CNT-PDMS composite film**, Hyoung Won Baac, Pil Gyu Sang, Seung Jin Lee, Wan Jick Kim, Ju Ho Song, Sungkyunkwan Univ. (Korea, Republic of); Ujwal Thakur, Hui Joon Park, Ajou Univ. (Korea, Republic of); Jeong Min Heo, Sungkyunkwan Univ. (Korea, Republic of) . . . . . [9792-64]

**Gibberellin photoactivation by lasers on the surface tissues of plants**, Aleksandr S. Grishkanich, Sergey V. Kascheev, Aleksandr P. Zhevlakov, Julia Ruzankina, ITMO Univ. (Russian Federation); Igor S. Sidorov, Univ. of Eastern Finland (Finland); Alexey Yakovlev, St. Petersburg State Forest Technical Univ. (Russian Federation) . . . . . [9792-65]

**Environment monitoring methane emission in Siberian permafrost by airborne SRS-Lidar**, Aleksandr S. Grishkanich, Aleksandr P. Zhevlakov, Sergey V. Kascheev, ITMO Univ. (Russian Federation); Igor S. Sidorov, Univ. of Eastern Finland (Finland); Valentin V. Elizarov, ITMO Univ. (Russian Federation) . . . . . [9792-66]



**Light-based technologies respond to the needs of humankind**

## **Join us in celebrating the International Year of Light**

The International Year of Light is a global initiative highlighting to the citizens of the world the importance of light and light-based technologies in their lives, for their futures, and for the development of society.

We hope that the International Year of Light will increase global awareness of the central role of light in human activities and that the brightest young minds continue to be attracted to careers in this field.

For more information on how you and your organization can participate, visit [www.spie.org/IYL](http://www.spie.org/IYL)



INTERNATIONAL  
YEAR OF LIGHT  
2015



**SPIE.**

# CONFERENCE 9792

## LOCATIONS: ROOMS 134 AND 122

*Session 2A runs concurrently with session 2B.*

### SESSION 2A

**Location: Room 134 . . . . . Tue 15:10 to 17:10**

#### **Microscopic Imaging**

Session Chair: **Yasuyuki Ozeki**, The Univ. of Tokyo (Japan)

**15:10: Multiscale optical imaging of epithelial tissue with FLIM and reflectance confocal microscopy**, Kristen C. Maitland, Javier A. Jo, Texas A&M Univ. (USA) . . . . . [9792-9]

**15:30: Reflection-mode confocal microscopy through a multimode fiber**, Damien Loterie, Salma Farahi, Ioannis N. Papadopoulos, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Alexandre S. Goy, Princeton Univ. (USA); Demetri Psaltis, Christophe Moser, Ecole Polytechnique Fédérale de Lausanne (Switzerland) . . . . . [9792-10]

**15:50: Recording transient effects in fluorescence lifetime imaging**, Vladislav I. Shcheslavskiy, Wolfgang Becker, Becker & Hickl GmbH (Germany); Inna Slutsky, Tel Aviv Univ. (Israel) . . . . . [9792-11]

**16:10: Delay induced timing jitter in a synchronized time-lens source**, Ping Qiu, Ke Wang, Shenzhen Univ. (China) . . . . . [9792-12]

**16:30: Non-interferometric quantitative phase imaging of yeast cells**, Praveen Kumar Poola, Vimal Prabhu Pandiyan, Renu John, Indian Institute of Technology Hyderabad (India) . . . . . [9792-13]

**16:50: Biomedical imaging with wearable smart eyeglasses**, Dino Carpentras, Christophe Moser, Ecole Polytechnique Fédérale de Lausanne (Switzerland) . . . . . [9792-14]



# CONFERENCE 9792

## LOCATIONS: ROOMS 134 AND 122

*Session 2A runs concurrently with session 2B.*

### SESSION 2B

**Location: Room 122 . . . . . Tue 15:10 to 17:20**

#### **Optical Coherent Tomography I**

Session Chair: **Yoshio Hayasaki**, Utsunomiya Univ. (Japan)

**15:10: Fusion of optical coherence tomography image and high-frequency ultrasonic image**, Marie Tabaru, Kentaro Nakamura, Tokyo Institute of Technology (Japan) . . . . . [9792-15]

**15:30: A novel turbidding microfluidic based cutaneous phantom to calibrate the OCT reconstruction of the 2D velocity field of blood flow**, Chen Chen, Midhat Ahmed, Tom Häfner, Florian Klämpfl, Michael Schmidt, Lehrstuhl für Photonische Technologien (Germany) . . . . . [9792-16]

**15:50: Applications of optical coherence tomography in the head neck neck and upper airway**, Brian J. F. Wong, Beckman Laser Institute and Medical Clinic (USA) . . . . . [9792-67]

**16:10: Contrast enhancement in optical coherence tomography at 1300 nm using gold nanorods**, Ratheesh Kumar Meleppat, Prabhathan Patinharekandy, Murukeshan Vadakke Matham, Leong Keey Seah, Nanyang Technological Univ. (Singapore) . . . . . [9792-18]

**16:30: High-resolution optical coherence microscopy using a high-power supercontinuum source in 1700-nm spectral band**, Masahito Yamanaka, Tatsuhiro Teranishi, Hiroyuki Kawagoe, Norihiko Nishizawa, Nagoya Univ. (Japan) . . . . . [9792-19]

**16:50: Label-free three-dimensional imaging of live cells in suspension (Invited Paper)**, Natan Tzvi Shaked, Tel Aviv Univ. (Israel) . . . . . [9792-21]

**CONFERENCE 9792  
LOCATIONS: ROOMS 134 AND 122**

**WEDNESDAY 28 OCTOBER**

*Session 3A runs concurrently with session 3B.*

**SESSION 3A**

**Location: Room 134 . . . . . Wed 9:00 to 10:20**

**Optical Coherent Tomography II**

Session Chair: **Yusuke Ogura**, Osaka Univ. (Japan)

9:00: **Computer tomography measurement using a pixelated polarizing interferometer**, David Ignacio Serrano-García, Yukitoshi Otani, Utsunomiya Univ. (Japan) . . . . . [9792-20]

9:20: **Extension of depth-resolved reconstruction of attenuation coefficients in optical coherence tomography for slim samples**, Martin Hohmann, Benjamin Lengenfelder, Rajesh Kanawade, Florian Klämpfl, Michael Schmidt, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany) . . . . . [9792-22]

9:40: **Optical multi-frequency swept sensing for wide-field vibration measurement of interior surfaces in biological tissue**, Samuel Choi, Fumiaki Nin, Hiroshi Hibino, Niigata Univ. School of Medicine (Japan); Takamasa Suzuki, Niigata Univ. (Japan) . . . . . [9792-23]

10:00: **Spectral-phase-based direct-time-domain interpolation scheme for resampling in swept-source-based optical coherence tomography systems**, Ratheesh Kumar Meleppat, Murukeshan Vadakke Matham, Leong Keey Seah, Nanyang Technological Univ. (Singapore) . . . . . [9792-24]

Coffee Break . . . . . Wed 10:20 to 10:50

# CONFERENCE 9792

## LOCATIONS: ROOMS 134 AND 122

*Session 3A runs concurrently with session 3B.*

### SESSION 3B

**Location: Room 122 ..... Wed 8:50 to 10:20**

#### Scattering

Session Chair: **Toshiharu Saiki**, Keio Univ. (Japan)

8:50: **Biophotonics beyond multiple light scattering** (*Invited Paper*), Wonshik Choi, Korea Univ. (Korea, Republic of) ..... [9792-25]

9:20: **Determination of scattering coefficient considering wavelength and absorption dependence of anisotropy factor measured by polarized beam for biological tissues**, Daichi Fukutomi, Katsunori Ishii, Kunio Awazu, Osaka Univ. (Japan) ..... [9792-26]

9:40: **Refraction and reflection computation at curved interface in Voxel-based Monte Carlo method**, Bin Chen, Dong Li, Xi'an Jiaotong Univ. (China); Guoxiang Wang, The Univ. of Akron (USA); Zhaoxia Ying, Xi'an Jiaotong Univ. (China) ..... [9792-27]

10:00: **Morpho-functional optical diffusion imaging usable for vascular ulcers diagnosis during telehealth procedures**, Marine Amouroux, Alexandre Haudrechy, Kevin Hill, Walter C. P. M. Blondel, Univ. de Lorraine (France) and Ctr. de Recherche en Automatique de Nancy, CNRS (France). . . . . [9792-28]

Coffee Break ..... Wed 10:20 to 10:50

**CONFERENCE 9792  
LOCATIONS: ROOMS 134 AND 122**

*Session 4A runs concurrently with session 4B.*

**SESSION 4A**

**Location: Room 134 . . . . . Wed 10:50 to 12:00**

**Optical Coherent Tomography III**

Session Chair: **Yusuke Ogura**, Osaka Univ. (Japan)

10:50: **In vivo visualization of pancreatic beta-cell function in zebrafish using dual-color two-photon three-axis digital scanned light-sheet microscopy** (*Invited Paper*), Liangyi Chen, Peking Univ. (China) . . . . . [9792-29]

11:20: **Time-gated digital phase conjugation for two-photon excitation microscopy through multimode optical fibers**, Edgar E. Morales Delgado, Salma Farahi, Ioannis N. Papadopoulos, Christophe Moser, Demetri Psaltis, Ecole Polytechnique Fédérale de Lausanne (Switzerland) . . . . . [9792-30]

11:40: **Quantitative phase imaging of cell division in yeast cells and e.coli using digital holographic microscopy**, Vimal Prabhu Pandiyan, Renu John, Indian Institute of Technology Hyderabad (India) . . . . . [9792-31]

Lunch Break . . . . . Wed 12:00 to 13:30

**CONFERENCE 9792  
LOCATIONS: ROOMS 134 AND 122**

*Session 4A runs concurrently with session 4B.*

**SESSION 4B**

**Location: Room 122 . . . . . Wed 10:50 to 11:50**

**Imaging Technology**

Session Chair: **Toshiharu Saiki**, Keio Univ. (Japan)

10:50: **Development of photothermal actuator for fluorescence resonance energy transfer based nanorobot**, Takahiro Nishimura, Atsushi Onishi, Yusuke Ogura, Jun Tanida, Osaka Univ. (Japan). . . . . [9792-33]

11:10: **Artificial nanostructures for high-performance biosensing devices using fano resonances**, Aswini K. Pradhan, Norfolk State Univ. (USA) . . . . . [9792-34]

11:30: **Smart phone controlled compact optical imaging system for biosensing applications**, Khalid M. Arif, Massey Univ. (New Zealand). . . . . [9792-35]

Lunch Break . . . . . Wed 11:50 to 13:30

# CONFERENCE 9792

## LOCATIONS: ROOMS 134 AND 122

### SESSION 5

**Location: Room 134 . . . . . Wed 13:30 to 15:00**

### Biophysics

Session Chair: **Teruki Sugiyama**, Instrument Technology Research Ctr. (Taiwan)

**13:30: Research on imaging, sensing, and characterization of cells at RCAS** (*Invited Paper*), Din Ping Tsai, Bi-Chang Chen, Chau-Hwang Lee, Pei-Kuen Wei, Jung-Hsin Lin, Ji-Yen Cheng, Chih-Wei Chu, Tung-Han Hsieh, Koji Hatanaka, Yi-Chung Tung, Fu-Liang Yang, Academia Sinica (Taiwan) . . . . . [9792-38]

**14:00: Mechanism underlying stress-related mucosal damage: upper optical gastroscopy**, Oxana V. Semyachkina-Glushkovskaya, N.G. Chernyshevsky Saratov State Univ. (Russian Federation); Nikita Navalokin, Saratov State Medical Univ. (Russian Federation); Ilana Agranovich, N.G. Chernyshevsky Saratov State Univ. (Russian Federation) . . . . . [9792-39]

**14:20: A coupling model of the radiative transport equation for calculating photon migration in biological tissue**, Hiroyuki Fujii, Hokkaido Univ. (Japan); Shinpei Okawa, National Defense Medical College (Japan); Yukio Yamada, The Univ. of Electro-Communications (Japan); Yoko Hoshi, Hamamatsu Univ. School of Medicine (Japan); Masao Watanabe, Hokkaido Univ. (Japan) . . . . . [9792-40]

**14:40: Particle swarm optimisation combined to spectral fitting approach improves precision for parametric estimation of tissue optical properties**, Maria N. Kholodtsova, A. M. Prokhorov General Physics Institute (Russian Federation) and Univ. de Lorraine (France) and Ctr. de Recherche en Automatique de Nancy, CNRS (France); Walter C. P. M. Blondel, Christian Daul, Univ. de Lorraine (France) and Ctr. de Recherche en Automatique de Nancy, CNRS (France); Viktor B. Loschenov, A. M. Prokhorov General Physics Institute (Russian Federation) . . . . . [9792-41]

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## GENERAL INFORMATION

# Registration

### REGISTRATION HOURS

Tuesday 07:30 to 17:00

Wednesday 08:00 to 15:00

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Conferences: 27–28 October 2015  
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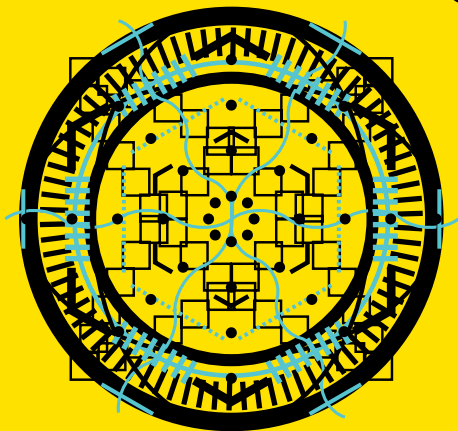


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