

## Advanced Biomedical and Clinical Diagnostic and Surgical Guidance Systems XV

Sunday - Tuesday 29 - 31 January 2017

### Conference Sessions At A Glance

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- 1: Raman Spectroscopy Applications
- 2: Raman Methods
- 3: Special Industry Session
- 4: Fluorescence Applications
- Posters-Sunday
- 5: Optical Coherence Tomography: Guidance Applications
- 6: Optical Coherence Tomography: Diagnostic applications
- 7: Near Infrared Spectroscopy and Imaging Applications
- 8: New Technologies
- 9: Applications of Other Imaging Methods I
- 10: Applications of Other imaging Methods II

### Important Dates

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- Abstract Due:  
18 July 2016
- Author Notification:  
26 September 2016
- Manuscript Due Date:  
3 January 2017

### Conference Committee

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#### Conference Chairs

- [Anita Mahadevan-Jansen](#), Vanderbilt Univ. (United States)  
[Tuan Vo-Dinh](#), Fitzpatrick Institute For Photonics, Duke Univ. (United States)  
[Warren S. Grundfest](#), Univ. of California, Los Angeles (United States)

#### SUNDAY 29 JANUARY

[Show All Abstracts](#)


### Session 1: Raman Spectroscopy Applications

Sunday 29 January 2017  
 8:30 AM - 10:10 AM  
 Location: Room 2006 (West Level 2)

Session Chair: [Anita Mahadevan-Jansen](#), Vanderbilt Univ. (United States)

#### High wavenumber Raman spectroscopic characterization of normal and oral cancer using blood plasma

Paper 10054-1  
 Time: 8:30 AM - 8:50 AM  
 Author(s): Rekha Pachaippan, Aruna Prakasarao, Murugesan Suresh Kumar, Ganesan Singaravelu, Anna Univ., Chennai (India)

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#### Tumor margin assessment in Mohs surgery using reflectance, fluorescence and Raman spectroscopy

Paper 10054-2  
 Time: 8:50 AM - 9:10 AM  
 Author(s): Hieu T. M. Nguyen, Austin Moy, Yao Zhang, Xu Feng, Jason S. Reichenberg, Matthew Fox, James W. Tunnell, The Univ. of Texas at Austin (United States)

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#### Raman spectroscopic characterization of urine of normal and cervical cancer subjects


Paper 10054-3  
 Time: 9:10 AM - 9:30 AM  
 Author(s): Raja Pappu, Aruna Prakasarao, Anna Univ., Chennai (India); Koteeswaran Domadula, Meenakshi Ammal Dental College & Hospital (India); Ganesan Singaravelu, Anna Univ., Chennai (India)

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#### Rapid and accurate peripheral nerve detection using multipoint Raman imaging

Paper 10054-4  
 Time: 9:30 AM - 9:50 AM  
 Author(s): Yasuaki Kumamoto, Kyoto Prefectural Univ. of Medicine (Japan); Takeo Minamikawa, The Univ. of Tokushima (Japan), Kyoto Prefectural Univ. of

Medicine (Japan); Akinori Kawamura, Junichi Matsumura, Yuichiro Tsuda, Toray Engineering Co., Ltd. (Japan); Juichiro Ukon, Ukon Craft Science, Co. Ltd. (Japan); Yoshinori Harada, Hideo Tanaka, Tetsuro Takamatsu, Kyoto Prefectural Univ. of Medicine (Japan)


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#### Label-free characterization of articular cartilage in osteoarthritis model mice by Raman spectroscopy

Paper 10054-5

Time: 9:50 AM - 10:10 AM

Author(s): Yusuke Oshima, Mayu Akehi, Hiroshi Kiyomatsu, Hiromasa Miura, Ehime Univ. (Japan)

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### Coffee Break 10:10 AM - 10:40 AM

## Session 2: Raman Methods

Sunday 29 January 2017

10:40 AM - 12:40 PM

Location: Room 2006 (West Level 2)


Session Chair: [Tuan Vo-Dinh](#), Duke Univ. (United States)

#### Feasibility of quantitatively diagnosing ocular infection using Raman spectroscopy

Paper 10054-6

Time: 10:40 AM - 11:00 AM

Author(s): Yanru Bai, Nanyang Technological Univ. (Singapore); Keren Chen, Nanyang Technological University (Singapore); Arti Mishra, Roger Beuerman, Singapore Eye Research Institute (Singapore); Quan Liu, Nanyang Technological Univ. (Singapore)


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#### Channel-compressed spectrometry for multiplexed molecular imaging of biomarker-targeted SERS nanoparticles on fresh tissue specimens

Paper 10054-7

Time: 11:00 AM - 11:20 AM

Author(s): Soyoung Kang, Yu Wang, Univ. of Washington (United States); Nicholas P. Reder, Univ. of Washington Medical Ctr. (United States); Jonathan T. C. Liu, Univ. of Washington (United States)


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#### In-situ shifted excitation Raman difference spectroscopy: development and demonstration of a portable sensor system at 785 nm

Paper 10054-8

Time: 11:20 AM - 11:40 AM

Author(s): Martin Maiwald, André Müller, Bernd Sumpf, Ferdinand-Braun-Institut (Germany)

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#### A stepwise spectral reconstruction method for spectroscopic Raman imaging

Paper 10054-9

Time: 11:40 AM - 12:00 PM

Author(s): Shuo Chen, Sino-Dutch Biomedical and Information Engineering School, Northeastern Univ. (China); Quan Liu, School of Chemical and Biomedical Engineering, Nanyang Technological Univ. (Singapore)

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#### Parameter optimization in Raman spectroscopy for differentiation of neural progenitor cells and their lineages

Paper 10054-10

Time: 12:00 PM - 12:20 PM

Author(s): Keren Chen, William Ong, Sing Yian Chew, Quan Liu, Nanyang Technological Univ. (Singapore)


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#### DNA detection and single nucleotide mutation identification using SERS for molecular diagnostics and global health

Paper 10054-51

Time: 12:20 PM - 12:40 PM

Author(s): Hoan Thanh Ngo, Fitzpatrick Institute for Photonics (United States), Duke Univ. (United States); Naveen Gandra, Fitzpatrick Institute for Photonics (United States), Duke Univ. (United States); Andrew M. Fales, Fitzpatrick Institute for Photonics (United States), Duke Univ. (United States); Steve Taylor, Tuan Vo-Dinh, Fitzpatrick Institute for Photonics (United States), Duke Univ. (United States)

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### Lunch/Exhibition Break 12:40 PM - 2:00 PM

## Session 3: Special Industry Session

Sunday 29 January 2017

2:00 PM - 3:00 PM

Location: Room 2006 (West Level 2)

Coffee Break 3:00 PM - 3:30 PM

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## Session 4: Fluorescence Applications

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Sunday 29 January 2017

3:30 PM - 5:30 PM

Location: Room 2006 (West Level 2)

Session Chair: [Quan Liu](#), Nanyang Technological Univ. (Singapore)


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### Hyperspectral imaging of colonic polyps in vivo

Paper 10054-11

Time: 3:30 PM - 3:50 PM

Author(s): Neil T. Clancy, Daniel S. Elson, Julian Teare, Imperial College London (United Kingdom)

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### Tumor margin assessment of surgical tissue specimen using hyperspectral imaging and machine learning

Paper 10054-12

Time: 3:50 PM - 4:10 PM

Author(s): Baowei Fei, Guolan Lu, Xu Wang, Hongzheng Zhang, James V. Little, Kelly R. Magliocca, Emory Univ. (United States); Amy Y. Chen, Emory Univ. School of Medicine (United States)


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### Three-dimensional online surface reconstruction of augmented fluorescence lifetime maps using photometric stereo

Paper 10054-13

Time: 4:10 PM - 4:30 PM

Author(s): Jakob Unger, Joao Lagarto, Jennifer Phipps, Dinglong Ma, Julien Bec, Univ. of California, Davis (United States); Jonathan Sorger, Intuitive Surgical, Inc. (United States); Gregory Farwell, Richard Bold, UC Davis Medical Ctr. (United States); Laura Marcu, Univ. of California, Davis (United States)


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### Multiphoton fluorescence microscopy using a 1 $\mu$ m fiber laser for rapid evaluation of breast surgical specimens

Paper 10054-14

Time: 4:30 PM - 4:50 PM

Author(s): Lucas C. Cahill, Michael G. Giacomelli, Massachusetts Institute of Technology (United States); Chi-Kuang Sun, National Taiwan Univ. (United States); Tadayuki Yoshitake, Massachusetts Institute of Technology (United States); Hilde Vardeh, Daniel B. Schmoltze, James L. Connolly, Beth Israel Deaconess Medical Ctr., Harvard Medical School (United States); James G. Fujimoto, Massachusetts Institute of Technology (United States)


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### Detection of radiation-induced brain necrosis in live rats using label-free time-resolved fluorescence spectroscopy

Paper 10054-15

Time: 4:50 PM - 5:10 PM

Author(s): Brad A. Hartl, Htet S. W. Ma, Shamira Sridharan, Katherine Hansen, Melanie Klich, Julian Perks, Michael Kent, Kyoungmi Kim, Ruben Fragoso, Laura Marcu, Univ. of California, Davis (United States)


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### Detection of human brain tumor infiltration with multimodal multiscale optical analysis

Paper 10054-16

Time: 5:10 PM - 5:30 PM

Author(s): Fanny Poulon, Camille Metais, Institut National de Physique Nucléaire et de Physique des Particules (France); Frederic Jamme, Synchrotron SOLEIL (France); Marc Zanello, Ctr. Hospitalier Sainte-Anne (France); Pascale Varlet, Ctr. Hospitalier Sainte-Anne (France), Univ. Paris Descartes (France); Bertrand Devaux, Ctr. Hospitalier Sainte-Anne (France), Univ. Paris Descartes (France); Matthieu Refregiers, Synchrotron SOLEIL (France); D. Abi-Haidar, Institut National de Physique Nucléaire et de Physique des Particules (France), Univ. Paris 7-Denis Diderot (France)

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## Session PSun: Posters-Sunday

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Sunday 29 January 2017

5:30 PM - 7:30 PM

Location: Moscone West Levels 2 and 3

Conference attendees are invited to attend the BIOS poster session on Sunday evening. Come view the posters, enjoy light refreshments, 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 sessions. Poster authors, view poster presentation guidelines and set-up instructions at <http://spie.org/PWPPosterGuidelines>.


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### Research of venous and capillary blood analytes using Raman spectroscopy approach

Paper 10054-45

Time: 5:30 PM - 7:30 PM

Author(s): Dmitry N. Artemyev, Ivan A. Bratchenko, Julia A. Khristoforova, Anastasia A. Lykina, Oleg O. Myakinin, Samara Univ. (Russian Federation); Tatyana P. Kuzmina, Igor L. Davydkin, Samara State Medical Univ. (Russian Federation); Valery P. Zakharov, Samara Univ. (Russian Federation)


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**Evaluation and diagnosis of brain death by functional near-infrared spectroscopy**

Paper 10054-46

Time: 5:30 PM - 7:30 PM

Author(s): Boan Pan, Univ. of Electronic Science and Technology of China (China); Fulin Zhong, Univ of Electronic Science and Technology of China (China); Xiaobo Huang, Sichuan Province Republic Hospital, University of Electronic Science & Technology of China (China); Ting Li, Univ. of Electronic Science and Technology of China (China)


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**Detection of migraine by using near-infrared spectroscopy**

Paper 10054-47

Time: 5:30 PM - 7:30 PM

Author(s): Chuan- Hsiang Yu, Chia-Wei Sun, National Chiao Tung Univ. (Taiwan)

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**Localization of subsurface photoacoustic fiducials for intraoperative guidance**

Paper 10054-48

Time: 5:30 PM - 7:30 PM

Author(s): Alexis Cheng, Haichong K. Zhang, Jin U. Kang, Russell H. Taylor, Emad M. Boctor, Johns Hopkins Univ. (United States)


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**Raman spectroscopic detection of peripheral nerves towards nerve-sparing surgery**

Paper 10054-49

Time: 5:30 PM - 7:30 PM

Author(s): Takeo Minamikawa, The Univ. of Tokushima (Japan), Kyoto Prefectural Univ. of Medicine (Japan); Yoshinori Harada, Tetsuro Takamatsu, Kyoto Prefectural Univ. of Medicine (Japan)


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**Polarized Raman spectroscopic characterization of normal and oral cancer blood plasma**

Paper 10054-50

Time: 5:30 PM - 7:30 PM

Author(s): Rekha Pachaiappan, Aruna Prakasarao, Ganesan Singaravelu, Anna Univ., Chennai (India)

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**MONDAY 30 JANUARY**[Show All Abstracts](#)

## Session 5: Optical Coherence Tomography: Guidance Applications

Monday 30 January 2017

8:50 AM - 10:10 AM

Location: Room 2006 (West Level 2)


Session Chair: [Caroline Boudoux](#), Ecole Polytechnique de Montréal (Canada)

**Optical coherence tomography guided laser ablation endoscopic imaging system for minimal invasive laryngeal surgery**

Paper 10054-17

Time: 8:50 AM - 9:10 AM

Author(s): Shanshan Liang, Xinyu Li, Sun Yat-Sen Univ. (China); Jun Zhang, SYSU-CMU Joint Institute of Engineering (China)


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**OCT imaging needles for deep anterior lamellar keratoplasty**

Paper 10054-18

Time: 9:10 AM - 9:30 AM

Author(s): Sucbei Moon, Kookmin Univ. (Korea, Republic of); Young-Sik Yoo, The Catholic Univ. of Korea (Korea, Republic of); Sung-Won Shin, Ulsan National Institute of Science and Technology (Korea, Republic of); Daseul Kim, Kookmin Univ. (Korea, Republic of); Woong-gyu Jung, Ulsan National Institute of Science and Technology (Korea, Republic of); Choun-ki Joo, The Catholic Univ. of Korea (Korea, Republic of)


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**Spectroscopic optical coherence tomography for ex vivo brain tumor analysis**

Paper 10054-19

Time: 9:30 AM - 9:50 AM

Author(s): Marcel Lenz, Photonics and Terahertz-Technology, Ruhr-Univ. Bochum (Germany); Robin Krug, Univ. Knappschaftskrankenhaus Bochum GmbH (Germany); Christopher Dillmann, Faculty of Electrical and Electronic Engineering, Technische Fachhochschule Georg Agricola zu Bochum (Germany); Alexandra Gerling, Nils C. Gerhardt, Photonics and Terahertz-Technology, Ruhr-Univ. Bochum (Germany); Hubert Welp, Faculty of Electrical and Electronic Engineering, Technische Fachhochschule Georg Agricola zu Bochum (Germany); Kirsten Schmieder, Univ. Knappschaftskrankenhaus Bochum GmbH (Germany); Martin R. Hofmann, Photonics and Terahertz-Technology, Ruhr-Univ. Bochum (Germany)


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**Optical coherence tomography guided smart laser knife for cancer surgery**

Paper 10054-20

Time: 9:50 AM - 10:10 AM

Author(s): Nitesh Katta, Austin Mcelroy, Arnold Estrada, Thomas E. Milner, The Univ. of Texas at Austin (United States)

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Coffee Break 10:10 AM - 10:40 AM

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## Session 6: Optical Coherence Tomography: Diagnostic applications

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Monday 30 January 2017

10:40 AM - 12:00 PM

Location: Room 2006 (West Level 2)

Session Chair: [Jennifer K. Barton](#), The Univ. of Arizona (United States)


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### Pancreatic cancer diagnosis based on full field OCT and dynamic full field OCT

Paper 10054-21

Time: 10:40 AM - 11:00 AM

Author(s): Clement Apelian, Institut Langevin (France); Marine Camus, Frederic Prat, Hopital Cochin (France); A. Claude Boccara, Institut Langevin (France)

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### Multimodal texture analysis of OCT images as a diagnostic application for skin tumors

Paper 10054-22

Time: 11:00 AM - 11:20 AM

Author(s): Dmitry S. Raupov, Oleg O. Myakinin, Ivan A. Bratchenko, Dmitry V. Kornilov, Valery P. Zakharov, Alexander G. Khramov, Samara Univ. (Russian Federation)


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### Diagnosis potential of hybrid Raman spectroscopy and optical coherence tomography technique for oral malignant lesions

Paper 10054-23

Time: 11:20 AM - 11:40 AM

Author(s): Jianfeng Wang, Wei Zheng, Kan Lin, Zhiwei Huang, National Univ. of Singapore (Singapore)


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### Towards double-clad fiber-based endoscopic single-pulse coagulation and concurrent optical coherence tomography

Paper 10054-24

Time: 11:40 AM - 12:00 PM

Author(s): Kathy Beaudette, Ecole Polytechnique de Montréal (Canada), Massachusetts General Hospital (United States); William Lo, Harvard Medical School (United States), Massachusetts General Hospital (United States); Martin Villiger, Brett E. Bouma, Harvard Medical School (United States), Massachusetts General Hospital (United States); Caroline Boudoux, Ecole Polytechnique de Montréal (Canada)

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Lunch Break 12:00 PM - 1:50 PM

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## Session 7: Near Infrared Spectroscopy and Imaging Applications

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Monday 30 January 2017

1:50 PM - 3:30 PM

Location: Room 2006 (West Level 2)

Session Chair: [Beop-Min Kim](#), Korea Univ. Medical Library (Korea, Republic of)


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### Thrombolytic therapeutic effect monitoring based on functional near-infrared spectroscopy

Paper 10054-26

Time: 1:50 PM - 2:10 PM

Author(s): Boan Pan, Pengbo Wang, Yaoxian Li, Yuan Gao, Ting Li, Univ. of Electronic Science and Technology of China (China)

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### Development of a NIRS method to quantify cerebral perfusion and oxidative metabolism in preterm neonates with post hemorrhagic ventricle dilation

Paper 10054-27

Time: 2:10 PM - 2:30 PM

Author(s): Peter McLachlan, Western Univ. (Canada); Jessica Kishimoto, Robarts Research Institute (Canada); Sandrine de Ribeaupierre, David S. C. Lee, Mamadou Diop, Keith St. Lawrence, Western Univ. (Canada)


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### Development of a hybrid broadband NIRS/diffusion correlation spectroscopy system for real-time monitoring of cerebral perfusion and oxygenation in preterm brain injury

Paper 10054-28

Time: 2:30 PM - 2:50 PM

Author(s): Ajay Rajaram, Keith St. Lawrence, Mamadou Diop, Lawson Health Research Institute (Canada)


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### Lymphatic Imaging in unsedated infants and children

Paper 10054-29

Time: 2:50 PM - 3:10 PM


Author(s): John C. Rasmussen, Duraisamy Balaguru, Melissa B. Aldrich, Eva M. Sevick-Muraca, The Univ. of Texas Health Science Ctr. at Houston (United States)

[Add To My Schedule](#) **Fibre-optic endoscope location through imaging of ballistic photons**

Paper 10054-30

Time: 3:10 PM - 3:30 PM

Author(s): Michael G. Tanner, Tushar R. Choudhary, Heriot-Watt Univ. (United Kingdom); Thomas Craven, Bethany Mills, Robert K. Henderson, Kevin Dhaliwal, The Univ. of Edinburgh (United Kingdom); Robert R. Thomson, Heriot-Watt Univ. (United Kingdom)

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**Coffee Break 3:30 PM - 4:00 PM**

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**Session 8:  
New Technologies**

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Monday 30 January 2017

4:00 PM - 5:40 PM

Location: Room 2006 (West Level 2)

Session Chair: [Christine P. Hendon](#), Columbia Univ. (United States)

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**Ultrasound imaging using all-optical power and signal transfer in a catheter**

Paper 10054-31

Time: 4:00 PM - 4:20 PM

Author(s): Martin Pekar, Philips Research (Netherlands), Erasmus MC (Netherlands); Martin B. van der Mark, Philips Research (Netherlands)

[Add To My Schedule](#) **Seeing laser scalpel: a novel monolithic high-power diode pumped Tm:YAG laser system at 2.02  $\mu\text{m}$  with double-clad fiber combined OCT**

Paper 10054-32

Time: 4:20 PM - 4:40 PM

Author(s): Manuel Messner, Arne Heinrich, Clemens Hagen, Pantec Engineering AG (Liechtenstein); Karl Unterrainer, Technische Univ. Wien (Austria)

[Add To My Schedule](#) **Compact system with handheld microfabricated optoelectronic probe for needle-based tissue sensing applications**

Paper 10054-33

Time: 4:40 PM - 5:00 PM

Author(s): Seung Yup Lee, Kyoungwan Na, Julia M. Pakela, Univ. of Michigan (United States); James Scheiman, Univ. of Michigan Health System (United States); Euisik Yoon, Mary-Ann Mycek, Univ. of Michigan (United States)

[Add To My Schedule](#) **Comparison and use 3D scanners to improve the quantification of medical images (surface structures and volumes) during follow up of clinical (surgical) procedures**

Paper 10054-34

Time: 5:00 PM - 5:20 PM


Author(s): Rudolf M. Verdaasdonk, Niki Tokkari, Niels Liberton, Jan Wolff, Martin den Heijer, Albert van der Veen, John Klaessens, Vrije Univ. Medical Ctr. (Netherlands)

[Add To My Schedule](#) **Fibre Bragg grating manometry catheters for in-vivo monitoring of peristalsis**

Paper 10054-35

Time: 5:20 PM - 5:40 PM

Author(s): John W. Arkwright, Flinders Univ (Australia), Arkwright Technologies Pty. Ltd. (Australia); Ian D. Underhill, Griffith Univ. (Australia)

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**TUESDAY 31 JANUARY**[Show All Abstracts](#)

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**Session 9:  
Applications of Other Imaging Methods I**

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Tuesday 31 January 2017

8:30 AM - 10:10 AM

Location: Room 2006 (West Level 2)

Session Chair: Rohit Reddy, Mondal Institute of Optics (India)


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**Volume measurement of the leg with the depth camera for quantitative evaluation of edema**

Paper 10054-40

Time: 8:30 PM - 8:50 PM


Author(s): Kaoru Kiyomitsu, Chiba Univ. (Japan); Akihiro Kakinuma, Hiroshi Takahashi, Naohiro Kamijo, Ricoh Co., Ltd. (Japan); Keiko Ogawa, Kanazawa Univ. Hospital (Japan); Norimichi Tsumura, Chiba Univ. (Japan)

[Add To My Schedule](#) **Evaluation of endoscopic entire 3D image acquisition of the digestive tract using a stereo endoscope**

Paper 10054-41

Time: 8:50 PM - 9:10 PM


Author(s): Kayo Yoshimoto, Osaka City Univ. (Japan); Kenji Watabe, Tetsuji Fujinaga, Hideki Iijima, Masahiko Tsujii, Osaka Univ. (Japan); Hideya Takahashi, Osaka City Univ. (Japan); Tetsuo Takehara, Kenji Yamada, Osaka Univ. (Japan)

[Add To My Schedule](#) **Novel diffuse optics system for continuous tissue viability monitoring: extended recovery in vivo testing in a porcine flap model**

Paper 10054-42

Time: 9:10 PM - 9:30 PM


Author(s): Seung Yup Lee, Julia M. Pakela, Taylor L. Hedrick, Univ. of Michigan (United States); Karthik Vishwanath, Miami Univ. (United States); Michael C. Helton, Yooree Chung, Univ. of Michigan (United States); Noah J. Kolodziejski, Christopher J. Stapels, Daniel R. McAdams, Daniel E. Fernandez, James F. Christian, Radiation Monitoring Devices, Inc. (United States); Jameson O'Reilly, Northeastern Univ. (United States), Radiation Monitoring Devices, Inc. (United States); Dana Farkas, Northeastern Univ. (United States), Radiation Monitoring Devices, Inc. (United States); Brent B. Ward, Stephen E. Feinberg, Mary-Ann Mycek, Univ. of Michigan (United States)

[Add To My Schedule](#) **Design and evaluation of a miniature laser speckle imaging device to assess gingival health**

Paper 10054-43

Time: 9:30 PM - 9:50 PM

Author(s): Caitlin Regan, Univ. of California, Irvine (United States), Beckman Laser Institute (United States); Sean M. White, Bruce Y. Yang, Beckman Laser Institute (United States), Univ. of California, Irvine (United States); Thair Takesh, Jessica Ho, Beckman Laser Institute and Medical Clinic (United States); Cherie Wink, Concorde Career College (United States); Petra Wilder-Smith, Bernard Choi, Univ. of California, Irvine (United States), Beckman Laser Institute and Medical Clinic (United States)

[Add To My Schedule](#) **Intraoperative detection of parathyroid gland perfusion during endocrine surgeries**

Paper 10054-44

Time: 9:50 PM - 10:10 PM

Author(s): Emmanuel Mannoh, Giju Thomas, Vanderbilt Univ. (United States); Carmen C. Solorzano, Anita Mahadevan-Jansen, Vanderbilt Univ. (United States)

[Add To My Schedule](#) **Coffee Break 10:10 PM - 10:40 PM****Session 10:  
Applications of Other imaging Methods II**

Tuesday 31 January 2017

10:40 AM - 12:00 PM

Location: Room 2006 (West Level 2)

Session Chairs: [Laura Marcu](#), Univ. of California, Davis (United States) ; [Anita Mahadevan-Jansen](#), Vanderbilt Univ. (United States)**3D endoscopic imaging using structured illumination technique for surgical guidance and assessment**

Paper 10054-36

Time: 10:40 AM - 11:00 AM


Author(s): Hanh N. D. Le, Johns Hopkins Univ. (United States); Hieu Nguyen, Zhaoyang Wang, The Catholic Univ. of America (United States); Jin U. Kang, Johns Hopkins Univ. (United States)

[Add To My Schedule](#) **Structured illumination microscopy as a diagnostic tool for nephrotic disease**

Paper 10054-37

Time: 11:00 AM - 11:20 AM


Author(s): Jonathan Nytk, Univ. of St. Andrews (United Kingdom); James M. Pullman, Montefiore Medical Ctr., Albert Einstein College of Medicine (United States); Elaine C. Campbell, Frank J. Gunn-Moore, Univ. of St. Andrews (United Kingdom); Michael B. Prystowsky, Montefiore Medical Ctr., Albert Einstein College of Medicine (United States); Kishan Dholakia, Univ. of St. Andrews (United Kingdom)

[Add To My Schedule](#) **An optoacoustic guide with augmented reality for precision breast-conserving surgery**

Paper 10054-38

Time: 11:20 AM - 11:40 AM

Author(s): Lu Lan, Weldon School of Biomedical Engineering, Purdue Univ. (United States); Kaiming Liu, Tsinghua Univ. (China); Yan Xia, Weldon School of Biomedical Engineering, Purdue Univ. (United States); Jiayingzi Wu, Purdue Univ. (United States); Rui Li, Weldon School of Biomedical Engineering, Purdue Univ. (United States); Pu Wang, Vibronix, Inc. (United States); Linda K. Han, Melvin and Bren Simon Cancer Ctr., Indiana Univ. (United States); Ji-Xin Cheng, Weldon School of Biomedical Engineering, Purdue Univ. (United States)


[Add To My Schedule](#) **Terahertz spectroscopy of the proteinuria in the patients with nephropathy**

Paper 10054-39

Time: 11:40 AM - 12:00 PM

Author(s): Chao Deng, Daheng New Epoch Technology, Inc. (China); Shangjian Liu, Beijing Univ. of Chinese Medicine (China); Jian Zuo, Cunlin Zhang, Capital

Normal Univ. (China); Siyi Yao, Xiaohong Yang, Daheng New Epoch Technology, Inc. (China)

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