

Photonics in Dermatology and Plastic Surgery

Saturday - Sunday 28 - 29 January 2017

Conference Sessions At A Glance

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1: Skin Cancer I: Spectroscopy and Wide-Field Imaging
2: Skin Cancer II: Raman and Fluorescence Spectroscopy
3: Skin Cancer III: Optical Microscopy and OCT
4: Optical Microscopy
5: Wide-Field Imaging
 BIOS Hot Topics
6: Therapeutics and Wound Healing I
7: Therapeutics and Wound Healing II
8: OCT Angiography
9: OCT
 A Tribute to Nik Kollias
 Posters-Sunday

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

[Bernard Choi](#), Beckman Laser Institute and Medical Clinic (United States)
[Haishan Zeng](#), The BC Cancer Agency Research Ctr. (Canada)

Program Committee

[Anthony J. Durkin](#), Beckman Laser Institute and Medical Clinic (United States)
[Conor L. Evans](#), Wellman Ctr. for Photomedicine (United States)
[Kristen Marie Kelly](#), Univ. of California, Irvine School of Medicine (United States)

Program Committee continued...

[Milind Rajadhyaksha](#), Memorial Sloan-Kettering Cancer Ctr. (United States)
[Jessica C. Ramella-Roman](#), Florida International Univ. (United States)
[Lise Lyngsnes Randeberg](#), Norwegian Univ. of Science and Technology (Norway)

SATURDAY 28 JANUARY

[Show All Abstracts](#)

Session 1: Skin Cancer I: Spectroscopy and Wide-Field Imaging

Saturday 28 January 2017

8:00 AM - 10:00 AM

Location: Room 3018 (West Level 3)


 Session Chair: [Kristen M. Kelly](#), Beckman Laser Institute and Medical Clinic (United States)

Quantification of changes in skin hydration and sebum after tape stripping using Infrared spectroscopy

Paper 10037-39

Time: 8:00 AM - 8:20 AM

Author(s): Anna A. Ezerskaia, Philips Research (Netherlands), Technische Univ. Delft (Netherlands); Sylvania F. Pereira, H. Paul Urbach, Technische Univ. Delft (Netherlands); Babu Varghese, Philips Research (Netherlands)

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Handheld spatial frequency domain spectrographic imager for depth-sensitive, quantitative spectroscopy of skin tissue

Paper 10037-1

Time: 8:20 AM - 8:40 AM

Author(s): Rolf B. Saager, An N. Dang, Anthony J. Durkin, Beckman Laser Institute and Medical Clinic, Univ. of California, Irvine (United States)

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Spectral biopsy for skin cancer diagnosis: initial clinical results

Paper 10037-2

Time: 8:40 AM - 9:00 AM

Author(s): Austin Moy, Xu Feng, Hieu Nguyen, Yao Zhang, The Univ. of Texas at Austin (United States); Kate Sebastian, Seton Healthcare Family (United States); Jason Reichenberg, Dell Medical School, The Univ. of Texas at Austin (United States); James W. Tunnell, The Univ. of Texas at Austin (United States)


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Intraoperative imaging of nonmelanoma skin cancers using polarization-enhanced reflectance and fluorescence technique

Paper 10037-3

Time: 9:00 AM - 9:20 AM


Author(s): Anna N. Yaroslavsky, Xin Feng, Univ. of Massachusetts Lowell (United States); Victor A. Neel, Massachusetts General Hospital (United States)

[Add To My Schedule](#) **Skin microrelief as a diagnostic tool**

Paper 10037-4

Time: 9:20 AM - 9:40 AM


Author(s): Lioudmila Tchvialeva, Jamie Phillips, Haishan Zeng, BC Cancer Research Ctr. (Canada); David McLean, Harvey Lui, The Univ. of British Columbia (Canada); Tim K. Lee, BC Cancer Research Ctr. (Canada)

[Add To My Schedule](#) **Physiological basis for noninvasive skin cancer diagnosis using diffuse reflectance spectroscopy**

Paper 10037-5

Time: 9:40 AM - 10:00 AM

Author(s): Yao Zhang, James W. Tunnell, The Univ. of Texas at Austin (United States); Mia K. Markey, The Univ. of Texas at Austin (United States), The Univ. of Texas MD Anderson Cancer Ctr. (United States)

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Coffee Break 10:00 AM - 10:30 AM

**Session 2:
Skin Cancer II: Raman and Fluorescence Spectroscopy**

Saturday 28 January 2017

10:30 AM - 11:10 AM

Location: Room 3018 (West Level 3)


Session Chair: [Haishan Zeng](#), BC Cancer Research Ctr. (Canada)

Wavenumber selection based analysis in Raman spectroscopy improves skin cancer diagnostic specificity at high sensitivity levels

Paper 10037-6

Time: 10:30 AM - 10:50 AM


Author(s): Jianhua Zhao, The Univ. of British Columbia (Canada), BC Cancer Research Ctr. (Canada); Haishan Zeng, BC Cancer Research Ctr. (Canada), The Univ. of British Columbia (Canada); Sunil Kalia, Harvey Lui, The Univ. of British Columbia (Canada)

[Add To My Schedule](#) **Melanoma and basal cell carcinoma control with Raman and fluorescence spectroscopy in visible and NIR regions**

Paper 10037-7

Time: 10:50 AM - 11:10 AM

Author(s): Ivan A. Bratchenko, Dmitry N. Artemyev, Oleg O. Myakinin, Yulia A. Hristophorova, Samara Univ. (Russian Federation); Alexander A. Moryatov, Sergey V. Kozlov, Samara State Medical Univ. (Russian Federation); Valery P. Zakharov, Samara Univ. (Russian Federation)

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**Session 3:
Skin Cancer III: Optical Microscopy and OCT**

Saturday 28 January 2017

11:10 AM - 12:30 PM

Location: Room 3018 (West Level 3)

Session Chair: [Bernard Choi](#), Beckman Laser Institute and Medical Clinic (United States)

Skin cancer margin analysis within minutes with FFOCT

Paper 10037-9

Time: 11:10 AM - 11:30 AM

Author(s): Eugénie Dalimier, LLTech SAS (France); Lauren Ogrich, Diego Morales, Carrie Ann Cusack, Mark Abdelmalek, Drexel Univ. College of Medicine (United States); Claude Boccard, LLTech SAS (France); John Durkin, Drexel Univ. College of Medicine (United States)

[Add To My Schedule](#) **Peri-operative imaging of cancer margins with reflectance confocal microscopy during Mohs micrographic surgery: feasibility of a videomosaicing algorithm**

Paper 10037-10

Time: 11:30 AM - 11:50 AM


Author(s): Eileen S. Flores, Oriol Yelamos, Miguel A. Cordova, Kivanc Kose, William Phillips, Anthony Rossi, Kishwer Nehal, Milind Rajadhyaksha, Memorial Sloan-Kettering Cancer Ctr. (United States)

[Add To My Schedule](#) **Deep learning based classification of morphological patterns in reflectance confocal microscopy to guide noninvasive diagnosis of melanocytic lesions**

Paper 10037-11

Time: 11:50 AM - 12:10 PM

Author(s): Kivanc Kose, Memorial Sloan-Kettering Cancer Ctr. (United States); Alican Bozkurt, Northeastern Univ. (United States); Setareh Ariafar, Memorial Sloan-Kettering Cancer Ctr. (United States); Christi A. Alessi-Fox, Caliber Imaging & Diagnostics, Inc. (United States); Melissa Gill, SkinMedical Research and Diagnostics, P.L.L.C. (United States); Jennifer G. Dy, Dana H. Brooks, Northeastern Univ. (United States); Milind Rajadhyaksha, Memorial Sloan-Kettering Cancer Ctr. (United States)


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Video-mosaicking of in vivo reflectance confocal microscopy images for noninvasive examination of skin lesions

Paper 10037-12

Time: 12:10 PM - 12:30 PM

Author(s): Kivanc Kose, Memorial Sloan-Kettering Cancer Ctr. (United States); Mengran Gou, Northeastern Univ. (United States); Oriol Yelamos, Miguel A. Cordova, Anthony Rossi, Kishwer S. Nehal, Memorial Sloan-Kettering Cancer Ctr. (United States); Octavia I. Camps, Jennifer G. Dy, Dana H. Brooks, Northeastern Univ. (United States); Milind Rajadhyaksha, Memorial Sloan-Kettering Cancer Ctr. (United States)

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Lunch/Exhibition Break 12:30 PM - 2:20 PM

Session 4: Optical Microscopy

Saturday 28 January 2017

2:20 PM - 3:20 PM

Location: Room 3018 (West Level 3)


Session Chair: [Milind Rajadhyaksha](#), Memorial Sloan-Kettering Cancer Ctr. (United States)

In vivo multiphoton imaging of the eyelid skin

Paper 10037-13

Time: 2:20 PM - 2:40 PM

Author(s): Ana Batista, Univ. des Saarlandes (Germany), Jenlab GmbH (Germany); Hans Georg Breunig, Jenlab GmbH (Germany); Aisada Uchugonova, Karsten König, Univ. des Saarlandes (Germany), JenLab GmbH (Germany)


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In vivo multiphoton-microscopy of laser-induced optical breakdown in human skin

Paper 10037-14

Time: 2:40 PM - 3:00 PM

Author(s): Mihaela Balu, Griffin Lentsch, Beckman Laser Institute and Medical Clinic, Univ. of California, Irvine (United States); Dorota Korta, Univ. of California, Irvine (United States); Karsten König, Univ. des Saarlandes (Germany), JenLab GmbH (Germany); Kristen M. Kelly, Univ. of California, Irvine (United States); Bruce J. Tromberg, Beckman Laser Institute and Medical Clinic, Univ. of California, Irvine (United States); Christopher B. Zachary, Univ. of California, Irvine (United States)

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3D imaging of hematoxylin and eosin stained thick tissues with a sub-femtoliter resolution by using Cr:forsterite-laser-based nonlinear microscopy

Paper 10037-15

Time: 3:00 PM - 3:20 PM

Author(s): Chien-Ting Kao, Institute of Biomedical Electronics and Bioinformatics, National Taiwan Univ. (Taiwan); Ming-Liang Wei, Molecular Imaging Ctr., National Taiwan Univ. (Taiwan); Yi-Hua Liao, National Taiwan Univ. Hospital (Taiwan); Chi-Kuang Sun, Institute of Photonics and Optoelectronics, National Taiwan Univ. (Taiwan), Molecular Imaging Ctr., National Taiwan Univ. (Taiwan)

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Coffee Break 3:20 PM - 3:50 PM

Session 5: Wide-Field Imaging

Saturday 28 January 2017

3:50 PM - 4:50 PM

Location: Room 3018 (West Level 3)

Session Chair: [Anthony J. Durkin](#), Beckman Laser Institute and Medical Clinic (United States)

In vivo characterization of structural and optical properties of human skin by combined photothermal radiometry and diffuse reflectance spectroscopy

Paper 10037-16

Time: 3:50 PM - 4:10 PM

Author(s): Nina Verdel, Jožef Stefan Institute (Slovenia); Ana Marin, Faculty of Mathematics and Physics, Univ. of Ljubljana (Slovenia); Luka Vidovič, Jožef Stefan Institute (Slovenia); Matija Milanič, Jožef Stefan Institute (Slovenia), Faculty of Mathematics and Physics, Univ. of Ljubljana (Slovenia); Boris Majaron, Jožef Stefan Institute (Slovenia)


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Quantitative assessment of graded burn wounds using a commercial and research grade laser speckle imaging (LSI) system

Paper 10037-18

Time: 4:10 PM - 4:30 PM

Author(s): Adrien Ponticorvo, Rebecca A. Rowland, Bruce Yang, Ben Lertsakdadet, Christian Crouzet, Beckman Laser Institute and Medical Clinic, Univ. of California, Irvine (United States); Nicole Bernal, Univ. of California, Irvine (United States); Bernard Choi, Anthony J. Durkin, Beckman Laser Institute and Medical Clinic, Univ. of California, Irvine (United States)


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Findings toward the miniaturization of a laser speckle contrast device for skin roughness measurements

Paper 10037-19

Time: 4:30 PM - 4:50 PM

Author(s): Daniel C. Louie, Univ. of British Columbia (Canada); Lioudmilla Tchvaleva, Univ. of British Columbia (Canada); Haishan Zeng, Univ. of British Columbia (Canada), British Columbia Cancer Agency (Canada); Tim K. Lee, Univ. of British Columbia (Canada), British Columbia Cancer Agency (Canada)

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Session HT: BIOS Hot Topics

Saturday 28 January 2017

7:00 PM - 9:00 PM

Location: Room 3009 (West Level 3)

SUNDAY 29 JANUARY

[Show All Abstracts](#)

Session 6: Therapeutics and Wound Healing I

Sunday 29 January 2017

8:50 AM - 10:20 AM

Location: Room 3018 (West Level 3)


Session Chair: [Bernard Choi](#), Beckman Laser Institute and Medical Clinic (United States)

Optical microscopy of targeted drug delivery and local distribution in skin of a topical minocycline: implications in translational research and guidance for therapeutic dose selection

Paper 10037-20

Time: 8:50 AM - 9:10 AM

Author(s): Maiko Hermsmeier, Tanvee Sawant, Diana Lac, Akira Yamamoto, Xin Chen, Susan Y. Huang, Usha Nagavarapu, BioPharmX, Inc. (United States); Conor L. Evans, Wellman Ctr. for Photomedicine (United States); Kin Foong Chan, AnnaMarie Daniels, BioPharmX, Inc. (United States)


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Light emitting fabric for photodynamic treatment of actinic keratosis

Paper 10037-21

Time: 9:10 AM - 9:30 AM

Author(s): Elise Thecuia, INSERM (France); Claire Vicentini, INSERM (France), Ctr. Hospitalier Regional Univ. de Lille (France); ANNE-SOPHIE VIGNION, FABIENNE LECOMTE, PASCAL DELEPORTE, U1189 - ONCO-THAI - Image Assisted Laser Therapy for Oncology (France); Laurent Mortier, Ctr. Hospitalier Regional Univ. de Lille (France), INSERM (France); Rolf-Markus Szeimies, Knappschafts Krankenhaus Recklinghausen (Germany); Serge R. Mordon, INSERM (France)


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Measuring temperature induced phase change kinetics in subcutaneous fatty tissues using near infrared spectroscopy (NIRS), magnetic resonance spectroscopy and optical coherence tomography

Paper 10037-22

Time: 9:30 AM - 9:50 AM

Author(s): Amir Y. Sajjadi, Stefan A. Carp, Dieter Manstein, Massachusetts General Hospital (United States)


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The role of ablative lasers in cutaneous scars: tissue regeneration to restore function *(Invited Paper)*

Paper 10037-23

Time: 9:50 AM - 10:20 AM

Author(s): Nathan Uebelhoer, Naval Medical Ctr. San Diego (United States)

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Coffee Break 10:20 AM - 10:50 AM

Session 7: Therapeutics and Wound Healing II

Sunday 29 January 2017

10:50 AM - 12:10 PM

Location: Room 3018 (West Level 3)


Session Chair: [Walfre Franco](#), Wellman Ctr. for Photomedicine (United States)

Hypericin-mediated selective photomodification of connective tissues

Paper 10037-24

Time: 10:50 AM - 11:10 AM

Author(s): Chen-Yuan Dong, Vladimir A. Hovhannisyan, National Taiwan Univ. (Taiwan); A. Hovhannisyan, European Regional Education Academy (Armenia); Vladimir Ghukasyan, Neuroscience Ctr., The Univ. of North Carolina at Chapel Hill (United States); Han-Wen Guo, Yang-Fang Chen, National Taiwan Univ. (Taiwan)


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Non-invasive in vivo characterization of skin wound healing using label-free multiphoton microscopy

Paper 10037-25

Time: 11:10 AM - 11:30 AM

Author(s): Jake D. Jones, Fariah Majid, Hallie Ramser, Kyle P. Quinn, Univ. of Arkansas (United States)


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A portable multi-spectral imaging system to monitor the level of melanin and wrinkle during low level light therapy

Paper 10037-26

Time: 11:30 AM - 11:50 AM

Author(s): Geunho Jung, Sungchul Kim, Jae Gwan Kim, Gwangju Institute of Science and Technology (Korea, Republic of)


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In vivo assessment of wound re-epithelialization by UV fluorescence excitation imaging

Paper 10037-27

Time: 11:50 AM - 12:10 PM

Author(s): Ying Wang, Antonio Ortega-Martinez, Juan Pablo Padilla-Martinez, Maura Williams, William A. Farinelli, Massachusetts General Hospital (United States); Richard R. Anderson, WalFRE Franco, Massachusetts General Hospital (United States), Harvard Medical School (United States)

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Lunch/Exhibition Break 12:10 PM - 1:40 PM

**Session 8:
OCT Angiography**

Sunday 29 January 2017

1:40 PM - 3:00 PM

Location: Room 3018 (West Level 3)


Session Chair: [Conor L. Evans](#), Wellman Ctr. for Photomedicine (United States)

Imaging cold-induced vasodynamic behaviour in skin using optical coherence tomography for microangiography

Paper 10037-28

Time: 1:40 PM - 2:00 PM

Author(s): Malte Casper, Massachusetts General Hospital (United States), Harvard Medical School (United States); Hinnerk Schulz-Hildebrandt, Univ. zu Lübeck (Germany); Michael Evers, Cuc Nguyen, Massachusetts General Hospital (United States), Harvard Medical School (United States); Reginald Birngruber, University of Luebeck (Germany); Gereon Hüttmann, Univ. zu Lübeck (Germany); Dieter Manstein, Massachusetts General Hospital (United States), Harvard Medical School (United States)


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Combined multimodal photoacoustic tomography, optical coherence tomography (OCT) and OCT based angiography system for in vivo imaging of multiple skin disorders in human

Paper 10037-29

Time: 2:00 PM - 2:20 PM

Author(s): Mengyang Liu, Zhe Chen, Christoph Sinz, Elisabeth Rank, Behrooz Zabihian, Medizinische Univ. Wien (Austria); Edward Z. Zhang, Paul C. Beard, Univ. College London (United Kingdom); Harald Kittler, Wolfgang Drexler, Medizinische Univ. Wien (Austria)


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Wide-field and high-sensitive angiography for clinical dermatology applications by swept-source optical coherence tomography

Paper 10037-30

Time: 2:20 PM - 2:40 PM

Author(s): Jingjiang Xu, Shaozhen Song, Ruikang K. Wang, Univ. of Washington (United States)


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Characterizing the microcirculation of atopic dermatitis using angiographic optical coherence tomography

Paper 10037-31

Time: 2:40 PM - 3:00 PM

Author(s): Robert A. Byers, Raman Maiti, Simon G. Danby, Elaine J. Pang, The Univ. of Sheffield (United Kingdom); Matt J. Carré, Roger Lewis, Univ of Sheffield (United Kingdom); Michael J. Cork, Stephen J. Matcher, The Univ. of Sheffield (United Kingdom)

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Coffee Break 3:00 PM - 3:30 PM

Session 9: OCT

Sunday 29 January 2017

3:30 PM - 4:30 PM

Location: Room 3018 (West Level 3)


Session Chair: [Jessica C. Ramella-Roman](#), Florida International Univ. (United States)

Optical coherence tomography for image-guided dermal filler injection and biomechanical evaluation

Paper 10037-32

Time: 3:30 PM - 3:50 PM

Author(s): Manmohan Singh, Univ. of Houston (United States); Shang Wang, Baylor College of Medicine (United States); Richard W. Yee, SeeFit In. (United States); Zhaolong Han, Univ. of Houston (United States); Salavat R. Aglyamov, The Univ. of Texas at Austin (United States); Kirill V. Larin, Univ. of Houston (United States), Baylor College of Medicine (United States)


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An integrated skin marking tool for use with optical coherence tomography (OCT)

Paper 10037-33

Time: 3:50 PM - 4:10 PM

Author(s): Rakesh Patalay, Emma Craythorne, Guy's and St Thomas' NHS Foundation Trust (United Kingdom); Raj Mallipeddi, Guys & St Thomas NHS Foundation Trust (United Kingdom); Andrew J. Coleman, Guy's and St Thomas' NHS Foundation Trust (United Kingdom)


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Comparison of optical localization techniques for optical coherence tomography of the hand for multi-fraction orthovoltage radiotherapy or photodynamic therapy: white light vs. optical surface imaging

Paper 10037-34

Time: 4:10 PM - 4:30 PM

Author(s): Raphael Jakubovic, Amitpal Bains, Joel Ramjist, Ryerson Univ. (Canada); Steve Babic, Lee Chin, Elizabeth Barnes, Sunnybrook Health Sciences Ctr., Univ. of Toronto (Canada); Victor X. D. Yang, Ryerson Univ. (Canada), Sunnybrook Health Sciences Ctr., Univ. of Toronto (Canada)

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Session REM: A Tribute to Nik Kollias

Sunday 29 January 2017

4:30 PM - 6:00 PM

Location: Room 3018 (West Level 3)

We would like to extend an open invitation to Photonics West attendees to join us in remembering Nik Kollias. The following colleagues will share their recollections of their time spent with Nik:

Harvey Lui, Department of Dermatology and Skin Science, University of British Columbia (Canada)

Rox Anderson, Wellman Center for Photomedicine, Massachusetts General Hospital, Harvard School of Medicine (United States)

InSeok Seo, Johnson and Johnson Consumer Inc. (United States)

Iltefat Hamzavi, Department of Dermatology, Henry Ford Hospital (United States)

Sunil Kalia, Department of Dermatology and Skin Science, University of British Columbia (Canada)

Haishan Zeng, Imaging Unit - Integrative Oncology Department, BC Cancer Agency Research Centre (Canada)

Session PSun: Posters-Sunday

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>.

Fabrication of double-layered optical skin phantom with artificial blood vessels embedded for port wine stain laser treatment

Paper 10037-35

Time: 5:30 PM - 7:30 PM

Author(s): Hyejin Kim, Hanna Kim, Van Phuc Nguyen, Hyun Wook Kang, Pukyong National Univ. (Korea, Republic of)


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Optical virtual biopsy of melasma for the diagnosis, prognosis and therapeutic decision by using in vivo non-invasive harmonic generation microscopy

Paper 10037-36

Time: 5:30 PM - 7:30 PM

Author(s): Ming-Liang Wei, Wei-Hung Weng, Yuan-Ta Shih, Guan-Liang Lin, National Taiwan Univ. (Taiwan); Yi-Hua Liao, National Taiwan Univ. Hospital (Taiwan), National Taiwan Univ. (Taiwan); Chi-Kuang Sun, National Taiwan Univ. (Taiwan)


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Assessment of cylindrical diffusing applicator for 1470 nm Laser lipolysis

Paper 10037-37

Time: 5:30 PM - 7:30 PM

Author(s): Jieun Hwang, Han Jae Pyo, Pukyong National Univ. (Korea, Republic of); Van Gia Truong, Hyun Wook Kang, Pukyong National Univ. (Korea, Republic of)

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Projection based multimodal imaging modality for visualization of vein and subcutaneous blood flow velocity

(Canceled)

Paper 10037-38

Time: 5:30 PM - 7:30 PM

Author(s):
