Dynamics and Fluctuations in Biomedical Photonics XI

Valery V. Tuchin
Kirill V. Larin
Martin J. Leahy
Ruikang K. Wang
Editors

1–2 February 2014
San Francisco, California, United States

Sponsored and Published by
SPIE

Volume 8942
## Contents

### TISSUE AND CELL DYNAMICS I

8942 06 **Liquid crystal-based spectral imaging goniometric polarimeter for sample characterization** [8942-8]
J. C. Gladish, D. D. Duncan, Portland State Univ. (United States)

8942 07 **Voice coil based robust and miniature optical delay for multiple reference optical coherence tomography** [8942-9]
R. Dsouza, H. Subhash, K. Neuhaus, National Univ. of Ireland, Galway (Ireland); J. Hogan, C. Wilson, Compact Imaging, Inc. (United States); M. Leahy, National Univ. of Ireland, Galway (Ireland) and Royal College of Surgeons (Ireland)

8942 08 **Improvement of tissue analysis and classification using optical coherence tomography combined with Raman spectroscopy** [8942-10]
C.-H. Liu, J. Qi, J. Lu, S. Wang, C. Wu, W.-C. Shih, Univ. of Houston (United States); K. V. Larin, Univ. of Houston (United States) and Baylor College of Medicine (United States)

8942 09 **Label free cell tracking in 3D tissue engineering constructs with high resolution imaging** [8942-11]
W. A. Smith, K.-P. Lam, K. P. Dempsey, Keele Univ. (United Kingdom); D. Mazzocchi-Jones, Institute for Science & Technology in Medicine (United Kingdom); J. B. Richardson, The Robert Jones and Agnes Hunt Orthopaedic Hospital NHS Foundation Trust (United Kingdom); Y. Yang, Institute for Science & Technology in Medicine (United Kingdom)

### CLINICAL IMAGING AND EVALUATION

8942 0F **Anatomical co-registration using spatio-temporal features of a non-contact near-infrared optical scanner** [8942-18]
Y.-J. Jung, J. Gonzalez, S. Rodriguez, M. Velez Mejia, G. Clark, A. Godavarty, Florida International Univ. (United States)

8942 0G **In vivo label-free monitoring microvascular and lymphatic vessel changes and dynamics during wound healing in mouse ear pinna using optical microangiography** [8942-19]
S. Yousefi, R. K. Wang, Univ. of Washington (United States)

8942 0H **Pre-cancer detection by wavelet transform and multi-fractality in various grades of DIC stromal images** [8942-20]
S. Mukhopadhyay, N. K. Das, Indian Institute of Science Education and Research Kolkata (India); A. Pradhan, Indian Institute of Technology Kanpur (India); N. Ghosh, P. K. Panigrahi, Indian Institute of Science Education and Research Kolkata (India)
FUNCTIONAL IMAGING AND SPECTROSCOPY

8942 0M Photoacoustic imaging of the human forearm using 40 MHz linear-array transducer [8942-25]
H. Zafar, A. Breathnach, H. M. Subhash, National Univ. of Ireland, Galway (Ireland) and National Biophotonics & Imaging Platform (Ireland); M. J. Leahy, National Univ. of Ireland, Galway (Ireland), National Biophotonics & Imaging Platform (Ireland), and Royal College of Surgeons (Ireland)

8942 0O Automated choroidal segmentation method in human eye with 1050nm optical coherence tomography [8942-27]
C. Liu, The Harker School (United States); R. K. Wang, Univ. of Washington (United States)

CEREBRAL HAEMODYNAMICS I

8942 0T Large field-of-view and depth-specific cortical microvascular imaging underlies regional differences in ischemic brain (Invited Paper) [8942-32]
J. Qin, L. Shi, S. Dziennis, R. K. Wang, Northeastern Univ. at Qinhuangdao (China) and Univ. of Washington (United States)

8942 OU Multi-parametric imaging of cerebral hemodynamic and metabolic response followed by ischemic injury [8942-33]
J. Qin, L. Shi, S. Dziennis, R. K. Wang, Northeastern Univ. at Qinhuangdao (China) and Univ. of Washington (United States)

TISSUE AND CELL DYNAMICS II

8942 0W Role of cellular adhesions in tissue dynamics spectroscopy [8942-35]
D. A. Merrill, R. An, J. Turek, D. Nolte, Purdue Univ. (United States)

8942 0X Imaging of electro-kinetic properties of tissue using the amplitude and the phase of optical coherence tomography (Invited Paper) [8942-36]
V. Toronov, Ryerson Univ. (Canada); V. Demidov, Ryerson Univ. (Canada) and Univ. of Toronto (Canada); Y. Xu, B. Vuong, Ryerson Univ. (Canada); C. Sun, Ryerson Univ. (Canada) and Univ. of Toronto (Canada); V. X. D. Yang, Ryerson Univ. (Canada); I. A. Vitkin, Univ. of Toronto (Canada)

POSTER SESSION

8942 0Y Monte Carlo simulation on the effect of contact pressure on in vivo NIRS measurement [8942-7]
J. Jiang, J. Lu, H. Zhang, X. Rong, Tianjin Univ. (China); Z. Ma, Northeastern Univ. at Qinhuangdao (China); K. Xu, Tianjin Univ. (China)

8942 0Z Ear feature region detection based on a combined image segmentation algorithm-KRM [8942-37]
J. Jiang, H. Zhang, Q. Zhang, J. Lu, Tianjin Univ. (China); Z. Ma, Northeastern Univ. at Qinhuangdao (China); K. Xu, Tianjin Univ. (China)
Reflectance spectroscopy for evaluating hair follicle cycle [8942-38]
C. Liu, Y. Guan, J. Wang, D. Zhu, Huazhong Univ. of Science and Technology (China)

Photophysical properties and photodynamic efficiency of cationic porphyrins [8942-16]
G. V. Gyulkhandanyan, Institute of Biochemistry (Armenia); R. K. Ghazaryan, Yerevan State Medical Univ. (Armenia); M. H. Paronyan, Science and Production Ctr. Armbiotechnology (Armenia); A. G. Gyulkhandanyan, Institute of Biochemistry (Armenia); M. A. Sheyryanjan, Yerevan State Univ. (Armenia); B. M. Dzhagarov, Institute of Physics (Belarus); E. S. Tuchina, M. A. Korchenova, N.G. Chernyshevsky Saratov State Univ. (Russian Federation); V. V. Tuchin, Research-Educational Institute of Optics and Biophotonics (Russian Federation), Institute of Precise Mechanics and Control (Russian Federation), and Univ. of Oulu (Finland)

Author Index
Conference Committee

Symposium Chairs

James G. Fujimoto, Massachusetts Institute of Technology (United States)
R. Rox Anderson, Wellman Center for Photomedicine, Massachusetts General Hospital (United States) and Harvard School of Medicine (United States)

Program Track Chairs

Steven L. Jacques, Oregon Health & Science University (United States)
William P. Roach, U.S. Air Force (United States)

Conference Chairs

Valery V. Tuchin, N.G. Chernyshevsky Saratov State University (Russian Federation) and University of Oulu (Finland)
Kirill V. Larin, University of Houston (United States)
Martin J. Leahy, National University of Ireland, Galway (Ireland)
Ruikang K. Wang, University of Washington (United States)

Conference Program Committee

Pierre O. Bagnaninchi, The University of Edinburgh (United Kingdom)
Wei R. Chen, University of Central Oklahoma (United States)
Joseph P. Culver, Washington University School of Medicine in St. Louis (United States)
Ekaterina I. Galanzha, University of Arkansas for Medical Sciences (United States)
Miya Ishihara, National Defense Medical College (Japan)
Jingying Jiang, Tianjin University (China)
Sean J. Kirkpatrick, University of Otago (New Zealand)
Jürgen M. Lademann, Charité Universitätsmedizin Berlin (Germany)
Hong Liu, The University of Oklahoma (United States)
Qingming Luo, Huazhong University of Science and Technology (China)
Igor V. Meglinski, University of Otago (New Zealand)
Brian S. Sorg, University of Florida (United States)
Vladislav Toronov, Ryerson University (Canada)
Lihong V. Wang, Washington University in St. Louis (United States)
Ying Yang, Keele University (United Kingdom)
Anna N. Yaroslavsky, University of Massachusetts Lowell (United States)
Vladimir P. Zharov, University of Arkansas for Medical Sciences (United States)
Dan Zhu, Huazhong University of Science and Technology (China)
Session Chairs

Speckle Technologies
Ruikang K. Wang, University of Washington (United States)

Tissue and Cell Dynamics I
Kirill V. Larin, University of Houston (United States)

Keynote Session: Tissue Optical Properties
Martin J. Leahy, National University of Ireland, Galway (Ireland)

Clinical Imaging and Evaluation
Jürgen M. Lademann, Charité Universitätsmedizin Berlin (Germany)

Optical Clearing and Biomechanics
Kirill V. Larin, University of Houston (United States)

Functional Imaging and Spectroscopy
Ruikang K. Wang, University of Washington (United States)

Cerebral Haemodynamics I
Anna N. Yaroslavsky, University of Massachusetts Lowell (United States)

Tissue and Cell Dynamics II
Martin J. Leahy, National University of Ireland, Galway (Ireland)
Kirill V. Larin, University of Houston (United States)
Ruikang K. Wang, University of Washington (United States)