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Fred S. Azar

Xavier Intes

Editors

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Contents

vii	Conference Committee
ix	Introduction

SESSION 1 IMAGING IN SURGICAL PROCEDURES

- 8937 03 **A surgical navigation system for non-contact diffuse optical tomography and intraoperative cone-beam CT** [8937-2]
M. J. Daly, Univ. of Toronto (Canada) and Univ. Health Network (Canada); N. Muhanna, H. Chan, Univ. Health Network (Canada); B. C. Wilson, J. C. Irish, Univ. Health Network (Canada) and Princess Margaret Cancer Ctr. (Canada); D. A. Jaffray, Univ. of Toronto (Canada), Univ. Health Network (Canada) and Princess Margaret Cancer Ctr. (Canada)
- 8937 04 **Multimodal confocal mosaics enable high sensitivity and specificity in screening of in situ squamous cell carcinoma** [8937-3]
M. Grados Luyando, A. Bar, N. Snavely, S. Jacques, Oregon Health and Science Univ. (United States); D. S. Gareau, Oregon Health and Science Univ. (United States) and The Rockefeller Univ. (United States)
- 8937 06 **A simultaneous multimodal imaging system for tissue functional parameters** [8937-5]
W. Ren, Z. Zhang, Q. Wu, S. Zhang, Univ. of Science and Technology of China (China); R. Xu, Univ. of Science and Technology of China (China) and The Ohio State Univ. (United States)

SESSION 2 MICROSCOPY

- 8937 09 **In vivo hyperspectral CARS and FWM microscopy of carotenoid accumulation in *H. Pluvialis*** [8937-8]
A. D. Slepov, Trent Univ. (Canada); A. M. Barlow, National Research Council Canada (Canada) and Univ. of Ottawa (Canada); A. Ridsdale, P. J. McGinn, National Research Council Canada (Canada); A. Stelow, National Research Council Canada (Canada) and Univ. of Ottawa (Canada)

SESSION 3 MULTIMODAL TOMOGRAPHY/SPECTROSCOPY IMAGING

- 8937 0D **A parallel framework for simultaneous fNIRS/fMRI fusion** [8937-12]
Z. Yuan, Univ. of Macau (Macao, China)
- 8937 0H **Validation of temperature-modulated fluorescence tomography in vivo** [8937-16]
T. C. Kwong, F. Nouzi, Y. Lin, R. Rajyaguru, T. Nguyen, L. Alptekin, Univ. of California, Irvine (United States); U. Sampathkumaran, Y. Zhu, S. Ahmed, InnoSense LLC (United States); G. Gulsen, Univ. of California, Irvine (United States)

SESSION 4 AGENTS, RECONSTRUCTION, AND ANALYSIS

- 8937 OK **One-step microencapsulation of nanoparticles and perfluorocarbon in microbubbles for potential application in controlled activation** [8937-19]
G. Li, T. Si, X. Luo, Univ. of Science and Technology of China (China); R. Xu, Univ. of Science and Technology of China (China) and The Ohio State Univ. (United States)
- 8937 OL **Single snapshot RGB multispectral imaging at fixed wavelengths: proof of concept** [8937-20]
J. Spigulis, L. Elste, Univ. of Latvia (Latvia)
- 8937 OM **Microencapsulation of multiple components by compound-fluidic electro-flow focusing** [8937-21]
C. Yin, T. Si, P. Gao, Univ. of Science and Technology of China (China); R. X. Xu, Univ. of Science and Technology of China (China) and The Ohio State Univ. (United States)
- 8937 ON **A fast and effective reconstruction method for fluorescence molecular tomography based on sparsity adaptive subspace pursuit** [8937-22]
J. Ye, C. Chi, Institute of Automation (China); Y. An, H. Xu, Beijing Jiaotong Univ. (China); S. Zhang, Northeastern Univ. (China); X. Yang, J. Tian, Institute of Automation (China)

POSTER SESSION

- 8937 OO **IRF-calibrated Born normalization scheme for time-domain diffuse fluorescence tomography based on overlap time-gating** [8937-23]
F. Gao, Tianjin Univ. (China) and Tianjin Key Lab. of Biomedical Detecting Techniques and Instruments (China); P. Liu, W. Wan, Tianjin Univ. (China); J. Li, H. Zhao, Tianjin Univ. (China) and Tianjin Key Lab. of Biomedical Detecting Techniques and Instruments (China)
- 8937 OP **Dental imaging using laminar optical tomography and micro CT** [8937-28]
F. Long, M. S. Ozturk, X. Intes, S. Kotha, Rensselaer Polytechnic Institute (United States)
- 8937 OR **High resolution 3D image reconstruction in laminar optical tomography based on compressive sensing** [8937-30]
F. Yang, Shandong Institute of Business and Technology (China) and Rensselaer Polytechnic Institute (United States); M. S. Ozturk, W. Cong, G. Wang, X. Intes, Rensselaer Polytechnic Institute (United States)
- 8937 OS **Mesh optimization for fluorescence molecular tomography** [8937-31]
A. Edmans, C. Smith, X. Intes, Rensselaer Polytechnic Institute (United States)
- 8937 OT **Structured light based hyperspectral time-resolved diffuse optical tomography system** [8937-32]
Q. Pian, X. Intes, Rensselaer Polytechnic Institute (United States)
- 8937 OU **Unsupervised clustering analyses of features extraction for a caries computer-assisted diagnosis using dental fluorescence images** [8937-33]
M. Bessani, M. M. da Costa, Univ. de São Paulo (Brazil); E. C. C. Lins, Univ. Federal do ABC (Brazil); C. D. Maciel, Univ. de São Paulo (Brazil)

- 8937 0V **Comparison of l_p -regularization-based reconstruction methods for time domain fluorescence molecular tomography on early time gates** [8937-34]
L. Zhao, H. Yang, W. Cong, G. Wang, X. Intes, Rensselaer Polytechnic Institute (United States)
- 8937 0W **Diffuse fluorescence tomography based on the radiative transfer equation for small animal imaging** [8937-36]
Y. Wang, Tianjin Univ. (China); L. Zhang, H. Zhao, F. Gao, J. Li, Tianjin Univ. (China) and Tianjin Key Lab. of Biomedical Detecting Techniques and Instruments (China)
- 8937 0X **Comparison of NIR FRET pairs for quantitative transferrin-based assay** [8937-37]
N. Sinsuebphon, Rensselaer Polytechnic Institute (United States); T. Bevington, Albany Medical College (United States); L. Zhao, Rensselaer Polytechnic Institute (United States); A. Ken, M. Barroso, Albany Medical College (United States); X. Intes, Rensselaer Polytechnic Institute (United States)
- 8937 0Z **Optimal arrangements of fiber optic probes to enhance the spatial resolution in depth for 3D reflectance diffuse optical tomography with time-resolved measurements performed with fast-gated single-photon avalanche diodes** [8937-24]
A. Puszka, CEA-LETI (France); L. Di Sieno, A. Dalla Mora, A. Pifferi, D. Contini, G. Boso, A. Tosi, Politecnico di Milano (Italy); L. Hervé, A. Planat-Chrétien, A. Koenig, J.-M. Dinten, CEA-LETI (France)
- 8937 10 **Time-resolved measurements in diffuse reflectance: effects of the instrument response function of different detection systems on the depth sensitivity** [8937-25]
A. Puszka, A. Planat-Chrétien, M. Berger, L. Hervé, J.-M. Dinten, CEA-LETI (France)
- 8937 13 **Novel fusion for hybrid optical/microcomputed tomography imaging based on natural light surface reconstruction and iterated closest point** [8937-35]
N. Ning, Harbin Univ. of Science and Technology (China); J. Tian, Institute of Automation (China) and Xidian Univ. (China); X. Liu, Harbin Univ. of Science and Technology (China); K. Deng, Xidian Univ. (China); P. Wu, Institute of Automation (China); B. Wang, Harbin Univ. of Science and Technology (China); K. Wang, X. Ma, Institute of Automation (China)
- 8937 14 **Combining 3D optical imaging and dual energy absorptiometry to measure three compositional components** [8937-38]
S. Malkov, J. Shepherd, Univ. of California, San Francisco (United States)
- 8937 17 **Simulation of optical breast density measurements using structured light illumination** [8937-42]
J. Kwong, F. Nouizi, Y. Li, J.-H. Chen, M.-Y. Su, G. Gulsen, Univ. of California, Irvine (United States)

Author Index

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(United States)
Fred S. Azar, Philips Medical Systems (United States)
- 4 Agents, Reconstruction, and Analysis
Mark J. Niedre, Northeastern University (United States)
Xavier Intes, Rensselaer Polytechnic Institute (United States)

Introduction

Data generated by novel imaging technologies such as optical tomography are complex to analyze due to the inherent scattering of light through anatomical systems. Cross validation and direct comparison with established methods in other imaging modalities are especially challenging. There is critical need for new computational techniques to provide rapid, accurate and cost-effective means for quantification and characterization of such data, either independently or integrated with other modalities. These computational methods will enable faster acceptance of novel imaging modalities into viable clinical and/or pre-clinical systems. The applications are diverse and range from imaging at the cellular level to the whole body while incorporating molecular, functional and anatomical information.

The conference objectives are to provide a forum:

- to review and share recent developments in novel multimodal imaging techniques,
- to report development of novel computational methods, and
- to bring together the optical imaging and image analysis communities.

Topics include, but are not limited to:

- multimodal imaging integrating structural, molecular and functional information
- 2D, 3D, 4D, tomographic and / or multi-spectral imaging
- imaging analysis and/or image processing techniques applied to optical imaging (e.g. visualization, segmentation, registration)
- detection and diagnostic analysis techniques which may provide better quantitative and/or diagnostic insight into clinical and pre-clinical imaging (e.g. methods for quantitative measurements, computer-assisted diagnosis)
- imaging analysis and/or image processing techniques used to combine optical imaging with other imaging modalities (e.g. MR, x-ray, PET)
- image analysis, computational methods and reconstruction approaches which may help bring optical imaging into the clinic (visual rendering of complex data set, novel algorithms for assisted optical reconstruction)
- clinical evaluation of these new technologies (Physiological and functional interpretation of image data, visual perception and observer performances, validation of quantitative assessment of optical signatures in-vivo).

Fred S. Azar
Xavier Intes