

PROGRESS IN BIOMEDICAL OPTICS AND IMAGING

Vol. 12, No. 7

# ***Optical Coherence Tomography and Coherence Domain Optical Methods in Biomedicine XV***

**James G. Fujimoto  
Joseph A. Izatt  
Valery V. Tuchin**  
*Editors*

**24–26 January 2011  
San Francisco, United States**

*Sponsored and Published by*  
SPIE

**Volume 7889**

Proceedings of SPIE, 1605-7422, v. 7889

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

The papers included in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. The papers published in these proceedings reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from this book:

Author(s), "Title of Paper," in *Optical Coherence Tomography and Coherence Domain Optical Methods in Biomedicine XV*, edited by James G. Fujimoto, Joseph A. Izatt, Valery V. Tuchin, Proceedings of SPIE Vol. 7889 (SPIE, Bellingham, WA, 2011) Article CID Number.

ISSN 1605-7422

ISBN 9780819484260

Published by

**SPIE**

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445

SPIE.org

Copyright © 2011, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at [copyright.com](http://copyright.com). Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 1605-7422/11/\$18.00.

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.

**SPIE**   
Digital Library

[SPIDigitalLibrary.org](http://SPIDigitalLibrary.org)

---

**Paper Numbering:** Proceedings of SPIE follow an e-First publication model, with papers published first online and then in print and on CD-ROM. Papers are published as they are submitted and meet publication criteria. A unique, consistent, permanent citation identifier (CID) number is assigned to each article at the time of the first publication. Utilization of CIDs allows articles to be fully citable as soon they are published online, and connects the same identifier to all online, print, and electronic versions of the publication. SPIE uses a six-digit CID article numbering system in which:

- The first four digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc.

The CID number appears on each page of the manuscript. The complete citation is used on the first page, and an abbreviated version on subsequent pages. Numbers in the index correspond to the last two digits of the six-digit CID number.

# Contents

xiii Conference Committee

---

## SESSION 1 OPTHALMIC OCT I

---

- 7889 06 **Ultra highspeed in-vivo Fourier domain full-field OCT of the human retina** [7889-05]  
T. Bonin, Univ. of Lübeck (Germany); M. Hagen-Eggert, Medical laser Ctr. Lübeck GmbH (Germany); G. Franke, Univ. of Lübeck (Germany); P. Koch, Thorlabs GmbH (Germany); G. Hüttmann, Univ. of Lübeck (Germany) and Medical laser Ctr. Lübeck GmbH (Germany)
- 7889 07 **Fast dispersion encoded full range OCT for retinal imaging at 800 nm and 1060 nm** [7889-06]  
B. Hofer, B. Považay, A. Unterhuber, Medical Univ. Vienna (Austria); L. Wang, Cardiff Univ. (United Kingdom); B. Hermann, Medical Univ. Vienna (Austria); S. Rey, Cardiff Univ. (United Kingdom); G. Matz, Vienna Univ. of Technology (Austria); W. Drexler, Medical Univ. Vienna (Austria) and Cardiff Univ. (United Kingdom)

---

## SESSION 2 SMALL ANIMAL IMAGING

---

- 7889 09 **Non-invasive imaging and monitoring of rodent retina using simultaneous dual-band optical coherence tomography** [7889-08]  
P. Cimalla, A. Burkhardt, J. Walther, A. Hofer, D. Wittig, R. Funk, E. Koch, Dresden Univ. of Technology (Germany)
- 7889 0A **In utero imaging of mouse embryonic development with optical coherence tomography** [7889-09]  
S. H. Syed, Univ. of Houston (United States); M. E. Dickinson, Baylor College of Medicine (United States); K. V. Larin, Univ. of Houston (United States), Baylor College of Medicine (United States), and Saratov State Univ. (Russian Federation); I. V. Larina, Baylor College of Medicine (United States)
- 7889 0C **Three-dimensional functional imaging of lung parenchyma using optical coherence tomography combined with confocal fluorescence microscopy** [7889-11]  
M. Gaertner, P. Cimalla, L. Knels, S. Meissner, E. Koch, Dresden Univ. of Technology (Germany)

---

## SESSION 3 OPTHALMIC OCT II

---

- 7889 0E **Imaging of temperature distribution and retinal tissue changes during photocoagulation by high speed OCT** [7889-13]  
H. H. Müller, L. Ptaszynski, K. Schlott, T. Bonin, M. Bever, Univ. of Lübeck (Germany); S. Koinzer, Arnold-Heller-Strasse (Germany); R. Birngruber, R. Brinkmann, G. Hüttmann, Univ. of Lübeck (Germany) and Medical Laser Ctr. Lübeck GmbH (Germany)

- 7889 OF **Visualization of vitreoretinal surgical manipulations using intraoperative spectral domain optical coherence tomography** [7889-14]  
Y. K. Tao, Duke Univ. (United States); J. P. Ehlers, Duke Univ. Medical Ctr. (United States); C. A. Toth, Duke Univ. Medical Ctr. (United States) and Duke Univ. (United States); J. A. Izatt, Duke Univ. (United States) and Duke Univ. Medical Ctr. (United States)
- 7889 OG **Investigation of retinal blood flow in glaucoma patients by Doppler Fourier-domain optical coherence tomography** [7889-15]  
Y. Wang, X. Zhang, O. Tan, D. Huang, Oregon Health and Science Univ. (United States)
- 7889 OH **Visualization of human retinal micro-capillaries with phase contrast high-speed optical coherence tomography** [7889-16]  
D. Y. Kim, Univ. of California, Davis (United States); J. Fingler, California Institute of Technology (United States); J. S. Werner, Univ. of California Davis (United States); D. M. Schwartz, Univ. of California, San Francisco (United States); S. E. Fraser, California Institute of Technology (United States); R. J. Zawadzki, Univ. of California, Davis (United States)
- 7889 OJ **Optimized doppler optical coherence tomography for choroidal capillary vasculature imaging** [7889-18]  
G. Liu, Beckman Laser Institute (United States) and Univ. of California, Irvine (United States); W. Qi, L. Yu, Beckman Laser Institute (United States); Z. Chen, Beckman Laser Institute (United States) and Univ. of California, Irvine (United States)
- 7889 OK **In-vivo human retina imaging with 5 $\mu$ m axial resolution, at 92000 A-scans/s with 1 $\mu$ m spectral domain OCT system** [7889-19]  
S. Hariri, P. J. Lee, A. A. Moayed, K. Bizheva, Univ. of Waterloo (Canada)
- 7889 OL **In-vivo retinal imaging by multi-beam spectral-domain optical coherence tomography with a novel spectrometer** [7889-20]  
N. Suehira, H. Yoshida, T. Yuasa, M. Sato, K. Yamada, Canon Inc. (Japan)

---

#### SESSION 4 CLINICAL APPLICATIONS

- 7889 ON **Automatic segmentation of intravascular optical coherence tomography images for facilitating quantitative diagnosis of atherosclerosis** [7889-22]  
Z. Wang, Case Western Reserve Univ. (United States); H. Kyono, H. G. Bezerra, Univ. Hospitals Case Medical Ctr. (United States); D. L. Wilson, Case Western Reserve Univ. (United States); M. A. Costa, Univ. Hospitals Case Medical Ctr. (United States); A. M. Rollins, Case Western Reserve Univ. (United States)
- 7889 OO **Automated stent strut coverage and apposition analysis of in-vivo intra coronary optical coherence tomography images** [7889-23]  
G. J. Ughi, Catholic Univ. Leuven (Belgium); T. Adriaenssens, K. Onsea, P. Kayaert, Univ. Hospitals Leuven (Belgium); C. Dubois, Catholic Univ. Leuven (Belgium) and Univ. Hospitals Leuven (Belgium); M. Coosemans, Univ. Hospitals Leuven (Belgium); P. Sinnaeve, W. Desmet, Catholic Univ. Leuven (Belgium) and Univ. Hospitals Leuven (Belgium); J. D'hooge, Catholic Univ. Leuven (Belgium)

- 7889 OS **Exploring the mechanism of radiation-enhanced hepatocellular carcinoma cell invasion by swept-source optical coherence tomography** [7889-27]  
W. C. Kuo, W. W. Cheng, National Taiwan Normal Univ. (Taiwan); C. H. Chou, National Taiwan Univ. Hospital (Taiwan); J.-H. Cheng, National Taiwan Univ. Hospital (Taiwan) and National Taiwan Univ. College of Medicine (Taiwan)

---

**SESSION 5 POLARIZATION-SENSITIVE OCT**

---

- 7889 OU **Ultra-high-speed polarization sensitive OCT in the human retina using a single spectrometer** [7889-29]  
T. Schmoll, E. Götzinger, Medizinische Univ. Wien (Austria); A. Unterhuber, Femtolasers Produktions GmbH (Austria); C. K. Hitzenberger, R. A. Leitgeb, Medizinische Univ. Wien (Austria)
- 7889 OW **Optic axis determination by fiber-based polarization-sensitive swept-source optical coherence tomography** [7889-31]  
Z. Lu, D. K. Kasaragod, S. J. Matcher, The Univ. of Sheffield (United Kingdom)
- 7889 OZ **Spectral domain polarization sensitive optical coherence tomography at 1.55  $\mu\text{m}$ : novel developments and applications for dynamic studies in materials science** [7889-34]  
D. Stifter, Johannes Kepler Univ. Linz (Austria); E. Leiss-Holzinger, Research Ctr. for Non Destructive Testing GmbH (Austria); B. Heise, J.-L. Bouchot, Z. Major, Johannes Kepler Univ. Linz (Austria); M. Pircher, E. Götzinger, B. Baumann, C. K. Hitzenberger, Medical Univ. of Vienna (Austria)

---

**SESSION 6 DOPPLER TECHNIQUES**

---

- 7889 IO **Label-free 3D optical imaging of microcirculation within sentinel lymph node in vivo** [7889-35]  
Y. Jung, Z. Zhi, R. K. Wang, Univ. of Washington (United States)
- 7889 II **Doppler velocity detection limitations in spectrometer and swept-source Fourier-domain optical coherence tomography** [7889-36]  
H. C. Hendargo, R. P. McNabb, A. Dhalla, N. Shepherd, J. A. Izatt, Duke Univ. (United States)
- 7889 IJ **Label-free in vivo optical micro-angiography imaging of cerebral capillary blood flow within meninges and cortex in mice with the skull left intact** [7889-37]  
Y. Jia, R. K. Wang, Univ. of Washington (United States)
- 7889 IK **Volumetric Doppler imaging of small animal brain using spectral and time domain optical coherence tomography** [7889-38]  
D. Bukowska, I. Grulkowski, Nicolaus Copernicus Univ. (Poland); G. Wilczynski, Nencki Institute of Experimental Biology (Poland); S. Tamborski, D. Ruminski, Nicolaus Copernicus Univ. (Poland); J. Wlodarczyk, Nencki Institute of Experimental Biology (Poland); D. Szlag, M. Szkulmowski, A. Kowalczyk, M. Wojtkowski, Nicolaus Copernicus Univ. (Poland)
- 7889 IL **Lateral resonant Doppler imaging for quantitative flow extraction in spectral domain optical coherence tomography** [7889-39]  
J. Walther, P. Cimalla, E. Koch, Dresden Univ. of Technology (Germany)

- 7889 15 **Ultra high resolution ultra high sensitive optical micro-angiography based on super continuum light source** [7889-40]  
L. An, J. Qin, Z. Zhi, R. Wang, Univ. of Washington (United States)

---

**SESSION 7 NEW OCT TECHNOLOGY I**

---

- 7889 16 **Multimodal optical coherence/photoacoustic tomography of skin** [7889-41]  
A. Alex, Medizinische Univ. Wien (Austria); E. Z. Zhang, Univ. College London (United Kingdom); B. Považay, Medizinische Univ. Wien (Austria); J. Laufer, Univ. College London (United Kingdom); B. Hofer, Medizinische Univ. Wien (Austria); C. Glittenberg, Ludwig Boltzmann Institut (Austria); B. Hermann, Medizinische Univ. Wien (Austria); P. C. Beard, Univ. College London (United Kingdom); W. Drexler, Medizinische Univ. Wien (Austria)
- 7889 18 **Integrated optical coherence tomography - ultrasound system and miniaturized probes for intravascular imaging** [7889-43]  
J. Yin, Univ. of California, Irvine (United States); X. Li, The Univ. of Southern California (United States); J. Jing, Beckman Laser Institute (United States); C. Hu, Q. Zhou, The Univ. of Southern California (United States); T. Burney, D. Mukai, S. Mahon, Beckman Laser Institute (United States); A. Edris, K. Hoang, Univ. of California, Irvine Medical Ctr. (United States); K. K. Shung, The Univ. of Southern California (United States); M. Brenner, J. Narula, Univ. of California, Irvine Medical Ctr. (United States); Z. Chen, Beckman Laser Institute (United States)
- 7889 19 **Piezoelectric transducer based miniature catheter for ultrahigh speed endoscopic optical coherence tomography** [7889-44]  
T.-H. Tsai, Massachusetts Institute of Technology (United States); B. M. Potsaid, Massachusetts Institute of Technology (United States) and Thorlabs Inc. (United States); M. Kraus, Massachusetts Institute of Technology (United States) and Univ. Erlangen-Nurnberg (Germany); J. J. Liu, C. Zhou, Massachusetts Institute of Technology (United States); J. Homegger, Univ. Erlangen-Nurnberg (Germany); J. G. Fujimoto, Massachusetts Institute of Technology (United States)
- 7889 1D **Structural and functional imaging with extended focus dark-field OCT at 1300nm** [7889-48]  
C. Blatter, B. Grajciar, Medizinische Univ. Wien (Austria); R. Huber, Ludwig-Maximilians-Univ. München (Germany); R. A. Leitgeb, Medizinische Univ. Wien (Austria)

---

**SESSION 8 NOVEL LIGHT SOURCES AND OCT SYSTEMS**

---

- 7889 1J **A mechanical-free 150-kHz repetition swept light source incorporated a KTN electro-optic deflector** [7889-54]  
S. Yagi, NTT Photonics Labs. (Japan); K. Naganuma, NTT Advanced Technology Corp. (Japan); T. Imai, Y. Shibata, S. Ishibashi, NTT Photonics Labs. (Japan); Y. Sasaki, NTT Advanced Technology Corp. (Japan); M. Sasaura, NTT Photonics Labs. (Japan); K. Fujiura, NTT Advanced Technology Corp. (Japan); K. Kato, NTT Photonics Labs. (Japan)
- 7889 1L **Tailoring wavelength sweep for SS-OCT with a programmable picosecond laser** [7889-56]  
G. Lamouche, S. Vergnole, National Research Council Canada (Canada); Y. Kim, B. Burgoyne, A. Villeneuve, Genia Photonics Inc. (Canada)

---

**SESSION 9 OCM, FULL FIELD OCT, AND MICROSCOPY**

---

- 7889 1O **The impact of aberrations on object reconstruction with interferometric synthetic aperture microscopy** [7889-59]  
S. G. Adie, Beckman Institute for Advanced Science and Technology (United States); B. W. Graf, A. Ahmad, B. Darbarsyah, S. A. Boppart, P. S. Carney, Beckman Institute for Advanced Science and Technology (United States) and Univ. of Illinois at Urbana-Champaign (United States)
- 7889 1Q **Spatial-domain low-coherence quantitative phase microscopy for cancer diagnosis** [7889-61]  
P. Wang, R. Bista, Univ. of Pittsburgh (United States); R. Bhargava, Univ. of Pittsburgh Medical Ctr. (United States); R. E. Brand, Y. Liu, Univ. of Pittsburgh (United States)

---

**SESSION 10 OCT TECHNOLOGY AND SIGNAL PROCESSING**

---

- 7889 1V **Digital dispersion compensation for ultrabroad-bandwidth single-camera spectral-domain polarization-sensitive OCT** [7889-66]  
A. L. Oldenburg, R. K. Chhetri, The Univ. of North Carolina at Chapel Hill (United States)
- 7889 1W **Segmented scanning protocols for speckle contrast reduction in spectral OCT images** [7889-67]  
M. Szkulmowski, I. Gorczyńska, D. Szlag, I. Grulkowski, A. Kowalczyk, M. Wojtkowski, Nicolaus Copernicus Univ. (Poland)

---

**SESSION 11 NEW OCT TECHNOLOGY II**

---

- 7889 1Y **Generating multiple-depths en-face images in optical coherence tomography** [7889-69]  
A. Bradu, L. Neagu, J. Rogers, A. G. Podoleanu, Univ. of Kent (United Kingdom)
- 7889 1Z **Ultra-high-speed real-time 4D display system installed in ultra-high speed parallel OCT system at a volume rate of 12 volumes/sec** [7889-70]  
K. Ohbayashi, Kitasato Univ. School of Medicine (Japan); D. Choi, H. Hiro-oka, Kitasato Univ. (Japan); A. Kubota, T. Ohno, R. Ikeda, System House Co., Ltd. (Japan); K. Shimizu, Kitasato Univ. (Japan)
- 7889 20 **An approach for megahertz OCT: streak mode Fourier domain optical coherence tomography** [7889-71]  
R. Wang, Clemson Univ. (United States); X. Yuan, Nankai Univ. (China); R. Goodwin, Univ. of South Carolina (United States); R. R. Markwald, Medical Univ. of South Carolina (United States); B. Z. Gao, Clemson Univ. (United States)
- 7889 22 **Dual-band refractive low coherence interferometry in the spectral domain for dispersion measurements** [7889-73]  
J. Liebermann, C. Brückner, Technical Univ. of Ilmenau (Germany); B. Grajciar, Medical Univ. of Vienna (Austria); J. Hauelsen, Technical Univ. of Ilmenau (Germany); A. F. Fercher, Medical Univ. of Vienna (Austria)

- 7889 25 **Single-shot full complex spectrum spectrometer-based OCT** [7889-76]  
G. V. Gelikonov, V. M. Gelikonov, P. A. Shilyagin, Institute of Applied Physics (Russian Federation)

---

**SESSION 12 FUNCTIONAL IMAGING AND ASSESSMENT**

---

- 7889 26 **Magnetomotive optical coherence microscopy for cell dynamics and biomechanics** [7889-77]  
X. Liang, B. W. Graf, R. John, V. Crecea, F. T. Nguyen, H. Ding, H. Song, G. Popescu, Univ. of Illinois at Urbana-Champaign (United States); A. Wei, Purdue Univ. (United States); S. A. Boppart, Univ. of Illinois at Urbana-Champaign (United States)
- 7889 2A **Assessment of tissue optical clearing as a function of glucose concentration using optical coherence tomography** [7889-81]  
N. Sudheendran, M. Mohamed, Univ. of Houston (United States); M. G. Ghosn, Univ. of Houston (United States) and Baylor College of Medicine (United States); V. V. Tuchin, Saratov State Univ. (Russian Federation) and Institute of Precise Mechanics and Control (Russian Federation); K. V. Larin, Univ. of Houston (United States) and Saratov State Univ. (Russian Federation)
- 7889 2B **Diffusion-sensitive Fourier-domain optical coherence tomography** [7889-82]  
M. Hagen-Eggert, Medical Laser Ctr. Lübeck GmbH (Germany); D. Hillmann, P. Koch, Thorlabs GmbH Lübeck (Germany); G. Hüttmann, Institute of Biomedical Optics Lübeck (Germany)

---

**POSTER SESSION**

---

- 7889 2E **High-speed (92 kHz) Fourier domain optical coherence tomography system in the 1  $\mu$ m band with real-time data re-sampling** [7889-85]  
A. Bradu, S. Van der Jeught, Univ. of Kent (United Kingdom); D. Malchow, Sensors Unlimited, Inc., Goodrich Corp. (United States); A. G. Podoleanu, Univ. of Kent (United Kingdom)
- 7889 2F **Performance comparison between 8 and 14 bit-depth imaging in polarization-sensitive swept-source optical coherence tomography** [7889-86]  
Z. Lu, D. K. Kasaragoda, S. J. Matcher, The Univ. of Sheffield (United Kingdom)
- 7889 2G **Real time display Fourier-domain OCT using multi-thread parallel computing with data vectorization** [7889-87]  
T. J. Eom, H. S. Kim, C. M. Kim, Y. L. Lee, Gwangju Institute of Science and Technology (Korea, Republic of); E. S. Choi, Chosun Univ. (Korea, Republic of)
- 7889 2H **Adaptive optics assisted Fourier domain OCT with balanced detection** [7889-88]  
A. Meadway, A. Bradu, Univ. of Kent (United Kingdom); M. Hathaway, OPKO Health, Inc. (United States); S. Van der Jeught, Univ. of Kent (United Kingdom); R. B. Rosen, New York Medical College (United States); A. G. Podoleanu, Univ. of Kent (United Kingdom)
- 7889 2I **Design and realization of a spectroscopic optical coherence tomography system for medical applications** [7889-89]  
P. Steiner, C. Meier, V. M. Koch, Bern Univ. of Applied Sciences (Switzerland); M. Stampanoni, ETH Zürich (Switzerland)



- 7889 2J **Low power real time signal processing engine for optical coherence tomography systems using multi-core digital signal processor** [7889-90]  
M. Ali, R. Parlapalli, Texas Instruments Inc. (United States); R. John, Indian Institute of Technology (India); S. A. Boppart, Univ. of Illinois at Urbana-Champaign (United States)
- 7889 2K **Common path FDOCT based on multiple reflections within the sample arm** [7889-91]  
N. Krstajić, R. Hogg, S. J. Matcher, The Univ. of Sheffield (United Kingdom)
- 7889 2L **Experimental investigation of wavelength dependence of penetration depth and imaging contrast for ultra-high-resolution optical coherence tomography** [7889-92]  
S. Ishida, N. Nishizawa, Nagoya Univ. (Japan); K. Itoh, Osaka Univ. (Japan)
- 7889 2M **Full-field optical coherence tomography for rapid 3-D imaging in biological systems** [7889-93]  
W. Zheng, C. J. R. Sheppard, National Univ. of Singapore (Singapore)
- 7889 2O **Ultra-high-resolution optical coherence tomography imaging of lung structure using Gaussian-shaped supercontinuum sources** [7889-95]  
N. Nishizawa, S. Ishida, Nagoya Univ. (Japan); T. Ohta, K. Itoh, Osaka Univ. (Japan); M. Kitatsuji, H. Ohshima, HOYA Corp. (Japan); Y. Hasegawa, Nagoya Univ. Graduate School of Medicine (Japan); M. Matsushima, T. Kawabe, Nagoya Univ. (Japan)
- 7889 2P **Long imaging range optical coherence tomography based on a narrow line-width dual band Fourier domain mode-locked swept source** [7889-96]  
J. Zhang, P. Wang, Z. Chen, Univ. of California, Irvine (United States)
- 7889 2Q **High speed swept source based on polygon-scanner filter and Fox-Smith cavity** [7889-97]  
P. Wang, Beckman Laser Institute and Medical Clinic (United States) and Univ. of Electronic Science and Technology of China (China); J. Zhang, G. Liu, Beckman Laser Institute and Medical Clinic (United States); Z. Chen, Beckman Laser Institute and Medical Clinic (United States) and Univ. of California, Irvine (United States)
- 7889 2R **Instantaneous coherence length measurement of a swept laser source using a Mach-Zehnder interferometer** [7889-98]  
T. von Niederhäusern, C. Meier, Bern Univ. of Applied Sciences (Switzerland); M. Duell, P. Vorreau, Exalos AG (Switzerland)
- 7889 2T **Characterization of a fibre optic swept laser source at 1  $\mu\text{m}$  for optical coherence tomography imaging systems** [7889-100]  
I. Trifanov, Multiwave Photonics S.A. (Portugal); L. Neagu, A. Bradu, Univ. of Kent (United Kingdom); A. Lobo Ribeiro, Univ. Fernando Pessoa (Portugal); A. G. Podoleanu, Univ. of Kent (United Kingdom)
- 7889 2U **Ultra-fast one-micron spectral domain ultra-high-sensitive optical micro-angiography for in-vivo visualization of ocular circulation of human retina and choroid** [7889-101]  
L. An, R. K. Wang, Univ. of Washington (United States)

- 7889 2V **Volumetric in-vivo imaging of intra-cochlear microstructures and microvascular perfusion in mice using high-speed spectral domain optical coherence tomography and ultra-high sensitive optical microangiography** [7889-102]  
H. M. Subhash, V. Davila, H. Sun, A. T. Nguyen-Huynh, A. L. Nuttall, R. K. Wang, Oregon Health & Science Univ. (United States)
- 7889 2X **Effect of blood vessel diameter on relative blood flow estimate in Doppler optical coherence tomography algorithms** [7889-104]  
J. Tokayer, The Univ. of Southern California (United States); D. Huang, Oregon Health & Science Univ. (United States)
- 7889 2Z **Dynamic analysis of a small artery of a human finger by optical coherence tomography** [7889-106]  
M. Kuwabara, N. Takahashi, D. Takada, M. Ohmi, M. Haruna, Osaka Univ. (Japan)
- 7889 30 **Imaging vibration of the cochlear partition of an excised guinea pig cochlea using phase-sensitive Fourier domain optical coherence tomography** [7889-107]  
N. Choudhury, Y. Zeng, A. Fridberger, F. Chen, D. Zha, A. L. Nuttall, R. K. Wang, Oregon Health & Science Univ. (United States)
- 7889 31 **Imaging of the intact mouse cochlea by spectral domain optical coherence tomography** [7889-108]  
S. S. Gao, Rice Univ. (United States); T. Yuan, Baylor College of Medicine (United States); A. Xia, P. Raphael, Stanford Univ. (United States); R. L. Shelton, B. E. Applegate, Texas A&M Univ. (United States); J. S. Oghalai, Stanford Univ. (United States)
- 7889 32 **Morphometry of the myopic optic nerve head using FDOCT** [7889-110]  
S. Lee, M. Young, E. Lebed, Simon Fraser Univ. (Canada); P. J. Mackenzie, The Univ. of British Columbia (Canada); M. F. Beg, M. V. Sarunic, Simon Fraser Univ. (Canada)
- 7889 33 **Fast retinal layer identification for optical coherence tomography images** [7889-111]  
T. Fabritius, Univ. of Oulu (Finland); S. Makita, Computational Optics Group (Japan); M. Miura, Tokyo Medical Univ. (Japan); Y. Yasuno, Computational Optics Group (Japan); R. Myllylä, Univ. of Oulu (Finland)
- 7889 38 **Digital phase stabilization for improving sensitivity and degree of polarization accuracy in polarization sensitive optical coherence tomography** [7889-116]  
J. W. Jacobs, S. J. Matcher, The Univ. of Sheffield (United Kingdom)
- 7889 39 **Polarization sensitive and Mueller matrix OCT measurements and data analysis** [7889-117]  
M. P. Raele, M. M. Amaral, N. Dias Vieira, Jr., A. Zanardi de Freitas, Nuclear and Energy Research Institute (Brazil)
- 7889 3A **Modulated deconvolution for resolution improvement in Fourier domain optical coherence tomography** [7889-118]  
E. Bousi, I. Charalambous, C. Pitris, Univ. of Cyprus (Cyprus)
- 7889 3C **Despeckling vs averaging of retinal UHROCT tomograms: advantages and limitations** [7889-120]  
J. A. Eichel, D. D. Lee, A. Wong, P. W. Fieguth, D. A. Clausi, K. K. Bizheva, Univ. of Waterloo (Canada)

7889 3D **Using phase gradient autofocus (PGA) algorithm for restoration OCT images with diffraction limited resolution** [7889-121]  
A. A. Moiseev, G. V. Gelikonov, P. A. Shilyagin, V. M. Gelikonov, Institute of Applied Physics  
(Russian Federation)

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, Harvard School of Medicine (United States)

## *Program Track Chairs*

**Tuan Vo-Dinh**, Duke University (United States)

**Anita Mahadevan-Jansen**, Vanderbilt University (United States)

## *Conference Chairs*

**James G. Fujimoto**, Massachusetts Institute of Technology (United States)

**Joseph A. Izatt**, Duke University (United States)

**Valery V. Tuchin**, N.G. Chernyshevsky Saratov State University (Russian Federation)

## *Program Committee*

**Peter E. Andersen**, Danmarks Tekniske Universitet (Denmark)

**Stephen A. Boppart**, University of Illinois at Urbana-Champaign (United States)

**Zhongping Chen**, Beckman Laser Institute and Medical Clinic (United States)

**Johannes F. de Boer**, Vrije Universiteit Amsterdam (Netherlands)

**Wolfgang Drexler**, Medizinische Universität Wien (Austria)

**Christoph K. Hitzenberger**, Medizinische Universität Wien (Austria)

**Rainer A. Leitgeb**, Medizinische Universität Wien (Austria)

**Xingde Li**, The Johns Hopkins University (United States)

**Adrian G. Podoleanu**, University of Kent (United Kingdom)

**Andrew M. Rollins**, Case Western Reserve University (United States)

**Natalia M. Shakhova**, Institute of Applied Physics (Russian Federation)

**Guillermo J. Tearney**, Wellman Center for Photomedicine (United States)

**Ruikang K. Wang**, Oregon Health & Science University (United States)

**Maciej Wojtkowski**, Nicolaus Copernicus University (Poland)

**Yoshiaki Yasuno**, University of Tsukuba (Japan)

## Session Chairs

- 1 Ophthalmic OCT I  
**James G. Fujimoto**, Massachusetts Institute of Technology (United States)
- 2 Small Animal Imaging  
**Joseph A. Izatt**, Duke University (United States)
- 3 Ophthalmic OCT II  
**Wolfgang Drexler**, Medizinische Universität Wien (Austria)
- 4 Clinical Applications  
**Stephen A. Boppart**, University of Illinois at Urbana-Champaign (United States)
- 5 Polarization-Sensitive OCT  
**Johannes F. de Boer**, Vrije Universiteit Amsterdam (Netherlands)
- 6 Doppler Techniques  
**Andrew M. Rollins**, Case Western Reserve University (United States)
- 7 New OCT Technology I  
**Xingde Li**, The Johns Hopkins University (United States)
- 8 Novel Light Sources and OCT Systems  
**Yoshiaki Yasuno**, University of Tsukuba (Japan)
- 9 OCM, Full Field OCT, and Microscopy  
**Adrian G. Podoleanu**, University of Kent (United Kingdom)
- 10 OCT Technology and Signal Processing  
**Peter E. Andersen**, Danmarks Tekniske Universitet (Denmark)
- 11 New OCT Technology II  
**Christoph K. Hitzenberger**, Medizinische Universität Wien (Austria)
- 12 Functional Imaging and Assessment  
**Valery V. Tuchin**, N.G. Chernyshevsky Saratov State University (Russian Federation)  
**Rainer A. Leitgeb**, Medizinische Universität Wien (Austria)