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Editors

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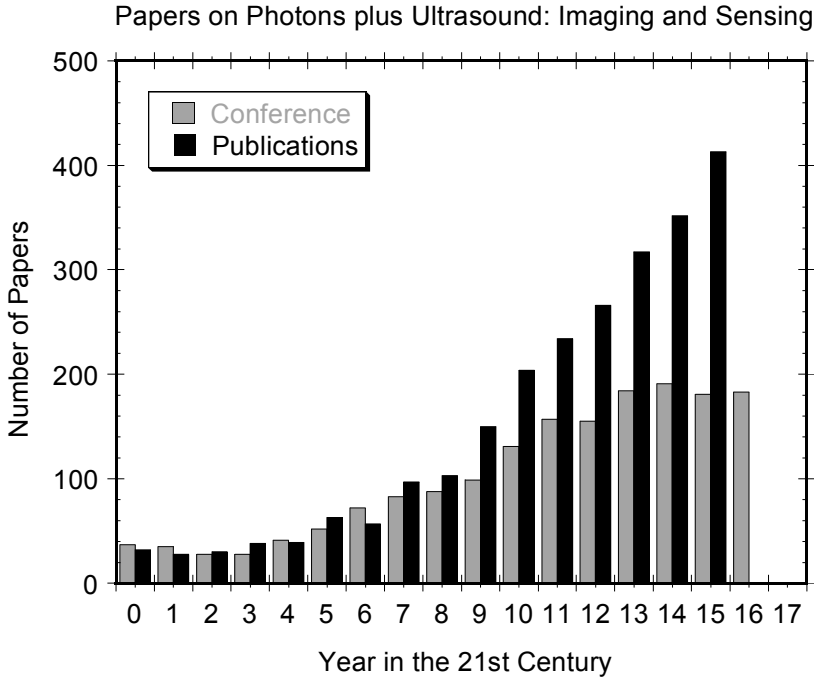
Introduction

This volume of SPIE Proceedings summarizes research and development conducted by our community in the past year. The field of biomedical optoacoustic (photoacoustic) imaging continues to experience rapid growth as shown in the following chart depicting the number of research papers published each year of the 21st century. The journal paper counts were from the Web of Science, and the number of conference papers reflects the actual number of presentations in the Conference on "Photons plus Ultrasound: Imaging and Sensing". This year our technology was highlighted for the fourth time at the BiOS Hot Topics plenary session (presentation by Paul Beard: "Photoacoustic imaging: from light to sound and back"). A significant trend at our conference noted in the previous years became even more prominent this year — an increased number and maturity of papers reporting on commercial grade systems and clinical applications. There is no wonder why on the first day of our 4-day conference there was no place to sit or even stand in the conference room. We are glad to see that biomedical optoacoustics (photoacoustics) is entering the real world of healthcare.



Starting this year, the Best Paper of the conference will be selected through a two-step process. In the first step the conference organizing committee composed of leading researchers from our community selected six finalists for the Best Paper Award:

Paper 9708-31 "Novel fibre lasers as excitation sources for photoacoustic tomography and microscopy" by Thomas J. Allen, Univ. College London (UK); Martin Berendt, Shaiful Alam, Univ. of Southampton (United Kingdom); Edward Z. Zhang, Univ. College London (UK); David J. Richardson, Optoelectronics Research Ctr. (UK); Paul C. Beard, Univ. College London (UK)

Paper 9708-59 "Breaking the acoustic diffraction limit in photoacoustic imaging with multiple speckle illumination", by Thomas Chaigne, PSL Research Univ. (France), Lab. Kastler-Brossel (France); Jérôme Gateau, PSL Research Univ. (France), Lab. Kastler-Brossel (France); Marc Allain, Univ. Aix-Marseille (France); Ori Katz, PSL Research Univ. (France), Lab. Kastler-Brossel (France; Sylvain Gigan, Lab. Kastler Brossel (France); Anne Sentenac, Univ. Aix-Marseille (France); Emmanuel Bossy, PSL Research Univ. (France)

Paper 9708-61 "Reflection-artifact-free photoacoustic imaging using PAFUSion (photoacoustic-guided focused ultrasound" by Mithun Kuniyil Ajith Singh, Univ. Twente (Netherlands); Michael Jaeger, Martin Frenz, Univ. Bern (Switzerland); Wiendelt Steenbergen, Univ. Twente (Netherlands)

Paper 9708-90 "Super-resolution photoacoustic imaging of single gold nanoparticles" by Seunghyun Lee, Pohang Univ. of Science and Technology (Korea); Owoong Kwon, Sungkyunkwan Univ. (Korea); Mansik Jeon, Kyungpook National Univ. (Korea); Jaejung Song, Minguk Jo, Junwoo Son, Sungjee Kim, Pohang Univ. of Science and Technology (Korea); Yunseok Kim, Sungkyunkwan Univ. (Korea); Chulhong Kim, Pohang Univ. of Science and Technology (Korea)

Paper 9708-182 "Comparison of transrectal photoacoustic, Doppler, and magnetic resonance imaging for prostate cancer detection" by Miya Ishihara, Akio Horiguchi, Hiroshi Shinmoto, Hitoshi Tsuda, National Defense Medical College (Japan); Kaku Irisawa, Takatsugu Wada, FUJIFILM Corp. (Japan); Tomohiko Asano, National Defense Medical College (Japan)

Paper 9708-184 "Reversibly switchable photoacoustic tomography using a genetically-encoded near-infrared phytochrome," by Junjie Yao, Washington Univ. in St. Louis (USA); Andrii A. Kaberniuk, Albert Einstein College of Medicine (USA); Lei Li, Washington Univ. in St. Louis (USA); Daria M. Shcherbakova, Albert Einstein College of Medicine (USA); Ruiying Zhang, Lidai Wang, Guo Li, Washington Univ. in St. Louis (USA); Vladislav V. Verkhusha, Albert Einstein College of Medicine (USA); Lihong V. Wang, Washington Univ. in St. Louis (USA).

In the second stage, a committee of independent experts formed by Seno Medical Instruments, the sponsor of the Award, selected the Best Paper from the

list of finalists based on review of the corresponding SPIE Proceedings. The $3,000 award and the Certificate of Accomplishment was announced by SPIE Media in April 2016 and presented by Seno Medical Instruments (San Antonio, Texas) at the opening ceremony of the 2017 conference.

We would like to congratulate the finalists and thank all the contributors of this conference and the Organizing Committee for their hard work.

Alexander A. Oraevsky
Lihong V. Wang