PROCEEDINGS OF SPIE

SPIE Advanced Biophotonics Conference (SPIE ABC 2023)

Hyuk-Sang Kwon Ki-Hun Jeong Euiheon Chung Hyun Wook Kang Editors

1–4 November 2023 Jeju, Korea, Republic of

Hosted by
Optical Society of Korea (Korea, Republic of)

Organized by Conference Committee of SPIE ABC 2023 (Korea, Republic of)

Published by SPIE

Volume 13076

Proceedings of SPIE 0277-786X, V. 13076

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

The papers 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. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIEDigitalLibrary.org.

The papers 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 these proceedings: Author(s), "Title of Paper," in *SPIE Advanced Biophotonics Conference (SPIE ABC 2023)*, edited by Hyuk-Sang Kwon, Ki-Hun Jeong, Euiheon Chung, Hyun Wook Kang, Proc. of SPIE 13076, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510674707

ISBN: 9781510674714 (electronic)

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA Telephone +1 360 676 3290 (Pacific Time)

SPIE.org

Copyright © 2024 Society of Photo-Optical Instrumentation Engineers (SPIE).

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 fees. To obtain permission to use and share articles in this volume, visit Copyright Clearance Center at 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.

Printed in the United States of America by Curran Associates, Inc., under license from SPIE.

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



Paper Numbering: A unique citation identifier (CID) number is assigned to each article in the Proceedings of SPIE at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

- The first five 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.

Contents

v Conference Committee

	Y1A1
13076 02	Nonlinear optical response of upconverting nanoparticles and its versatile applications with inherent three-dimensional capabilities: from microscopy to therapy [13076-1]
13076 03	Open-top two-photon light sheet microscopy for three-dimensional tissue examination [13076-2]
13076 04	Real-time in-vivo imaging of blood flow in a photothrombotic cortical mouse microinfarction model [13076-3]
13076 05	High-resolution, wide field of view, and cost-effective imaging using high space-bandwidth product lens with adaptive optics [13076-9]
13076 06	Development of a multimodal optical system for quantitative biological tissue characterization [13076-11]
	Y1A2
13076 07	Two-photon excitation microscopy through scattering media using digital optical phase conjugation (DOPC) [13076-5]
13076 08	Reliable reconstruction of passive non-line-of-sight imaging with occluder by deep learning [13076-6]
13076 09	High-speed lensless eye tracker for microsaccade measurement [13076-8]
	P4
13076 0A	Four layer integrated optical biosensor [13076-4]

Conference Committee

Conference Chair

Hyuk-Sang Kwon, Gwangju Institute of Science and Technology (Korea, Republic of)

Organizing Committee

Ki-Hun Jeong, KAIST (Korea, Republic of)
Jae-Byum Chang, KAIST (Korea, Republic of)
Mooseok Jang, KAIST (Korea, Republic of)
Pilhan Kim, KAIST (Korea, Republic of)
Hyun Wook Kang, Pukyong National University (Korea, Republic of)

Program Committee

Euiheon Chung, GIST (Korea, Republic of)
Pilhan Kim, KAIST (Korea, Republic of)
Jung-Hoon Park, UNIST (Korea, Republic of)
Woonggyu Jung, UNIST (Korea, Republic of)
Tae Joong Eom, Pusan National University (Korea, Republic of)
Chulhong Kim, POSTECH (Korea, Republic of)
Jeesu Kim, Pusan National University (Korea, Republic of)
Jeongmin Kim, Seoul National University (Korea, Republic of)
Jonghee Yoon, Ajou University (Korea, Republic of)
Myunghwan Choi, Seoul National University (Korea, Republic of)
Mooseok Jang, KAIST (Korea, Republic of)
Chulmin Joo, Yonsei University (Korea, Republic of)
Seung Ah Lee, Yonsei University (Korea, Republic of)
Chang-Seok Kim, Pusan National University (Korea, Republic of)
Kisoo Kim, KOPTI (Korea, Republic of)