Optogenetics and Optical Manipulation 2022

Samarendra K. Mohanty Anna W. Roe Shy Shoham Editors

22–23 January 2022 San Francisco, California, United States

Sponsored and Published by SPIE

Volume 11947

Proceedings of SPIE, 1605-7422, V. 11947

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 Optogenetics and Optical Manipulation 2022, edited by Samarendra K. Mohanty, Anna W. Roe, Shy Shoham, Proc. of SPIE 11947, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 1605-7422

ISSN: 2410-9045 (electronic)

ISBN: 9781510647657

ISBN: 9781510647664 (electronic)

Published by

SPIE

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

SPIE.org

Copyright © 2022 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-diait 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

٧	Conference Committee
	INFRARED NEURAL MODULATION
11947 02	Exploring the impact of spatially varying heating profiles on temperature thresholds for infrared neural modulation [11947-8]
	OPTICAL MANIPULATION
11947 03	Set-ups to induce by light a memory in in-vitro neuronal cultures [11947-14]
	SPATIOTEMPORAL OPTOGENETIC MODULATION
11947 04	Hologram optogenetic illumination with a few pixel SLM [11947-16]

Conference Committee

Symposium Chairs

Jennifer Barton, The University of Arizona (United States) **Wolfgang Drexler**, Medical University of Vienna (Austria)

Program Track Chairs

Elizabeth Hillman, Columbia University (United States) **Anna Devor**, Boston University (United States)

Conference Chairs

Samarendra K. Mohanty, Nanoscope Technologies, LLC (United States)
Anna W. Roe, Zhejiang University (China)
Shy Shoham, NYU Langone Health (United States)

Conference Program Committee

Antoine Adamantidis, McGill University (Canada)
George J. Augustine, The Lee Kong Chian School of Medicine (Singapore)

Klaus B. Gerwert, Ruhr-Universität Bochum (Germany)

Xue Han, Boston University (United States)

Elizabeth M. Hillman, Columbia University (United States)

E. Duco Jansen, Vanderbilt University (United States)

Richard Kramer, University of California, Berkeley (United States)

Alfred L. Nuttall, Oregon Health & Science University (United States)

Darcy S. Peterka, Columbia University (United States)

Michelle Y. Sander, Boston University (United States)

Ulrich T. Schwarz, Technische Universität Chemnitz (Germany)

Cuiru Sun, Tianjin University (China)

John P. Welsh, University of Washington (United States)