

PROCEEDINGS OF SPIE

Organic Photonic Materials and Devices XXII

**Christopher E. Tabor
François Kajzar
Toshikuni Kaino**
Editors

**5–6 February 2020
San Francisco, California, United States**

Sponsored and Published by
SPIE

Volume 11277

Proceedings of SPIE 0277-786X, V. 11277

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 SPIDigitalLibrary.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 *Organic Photonic Materials and Devices XXII*, edited by Christopher E. Tabor, François Kajzar, Toshikuni Kaino, Proceedings of SPIE Vol. 11277 (SPIE, Bellingham, WA, 2020)
Seven-digit Article CID Number.

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510633179

ISBN: 9781510633186 (electronic)

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 © 2020, 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. 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 0277-786X/20/\$18.00.

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.

**SPIE. DIGITAL
LIBRARY**

SPIDigitalLibrary.org

Paper Numbering: *Proceedings of SPIE* follow an e-First publication model. A unique citation identifier (CID) number is assigned to each article 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	Authors
vii	Conference Committee

3D PRINTING

11277 04	Can one 3D print a laser? [11277-3]
11277 05	Additive manufactured organic light-emitting diodes [11277-4]

NANO MATERIALS

11277 0A	Continuous roll imprinting of moth-eye antireflection surface using anodic porous alumina and multi-functionalities on the moth-eye surface (Invited Paper) [11277-9]
----------	---

NEW MATERIALS

11277 0E	Controlling energy transfer routes in dye-sensitized lanthanide-based nanoparticles for enhanced emission [11277-13]
----------	--

NONLINEAR OPTICS

11277 0M	Understanding photophysics of metallated tetrakis(cumylphenoxy) phthalocyanines in epoxy and PMMA (Invited Paper) [11277-21]
11277 0N	Characterization of the ultrafast nonlinear response of new organic compounds (Invited Paper) [11277-22]
11277 0O	Transmission of 43-Gb/s optical signals through a single-mode polymer waveguide for LAN-WDM [11277-23]
11277 0P	Kinetics of energy transfer and acceptor dimerization in a bichromophore system [11277-24]

SOLAR CELLS

11277 0S	Properties and applications of hybrid organic-inorganic halide perovskites thin films (Invited Paper) [11277-27]
----------	--

BIOPHOTONICS

- 11277 0W **Unveiling excited-state chirality of binaphthols by sub-picosecond circular dichroism and quantum-chemical calculations (Invited Paper) [11277-31]**

OLEDs

- 11277 12 **Optical dispersion study of PPDT2FBT by spectroscopic ellipsometry [11277-38]**

POSTER SESSION

- 11277 14 **A beam modulation in the multilayer parabolic bio-nanostructures of the eye of the firefly [11277-40]**
- 11277 15 **Development of IOT mechanical device for fabrication of tapers and gratings using CO₂ IR laser [11277-41]**
- 11277 18 **Development of a new polymer (OSTE⁺) optical waveguide for evanescent wave absorption-based photonic sensors [11277-44]**