PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 11877

, "Front Matter: Volume 11877," Proc. SPIE 11877, Second iiScience International Conference 2021: Recent Advances in Photonics and Physical Sciences, 1187701 (1 July 2021); doi: 10.1117/12.2602837

SPIE.

Event: 2nd iiScience International Conference 2021: Recent Advances in Photonics and Physical Sciences, 2021, Faisalabad, Pakistan

PROCEEDINGS OF SPIE

Second iiScience International Conference 2021: Recent Advances in Photonics and Physical Sciences

**M. Yasin Akhtar Raja
Zill-I-Huma Nazli
Syed A. Haider
M. Imran Asghar
Farhat Jubeen
Shagufta Parveen**
Editors

**29–30 March 2021
Faisalabad, Pakistan**

Organized by
Government College Women University Faisalabad (Pakistan)
The University of North Carolina at Charlotte (United States)

Sponsored by
Punjab Higher Education Commission (Pakistan)
Government College Women University Faisalabad (Pakistan)
The University of North Carolina at Charlotte (United States)

Technical Cosponsor and Publisher
SPIE

Volume 11877

Proceedings of SPIE 0277-786X, V. 11877

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

Second iiScience International Conference 2021: Recent Advances in Photonics and Physical Sciences,
M. Y. A. Raja, Z. Nazli, S. A. Haider, M. I. Asghar, F. Jubeen, S. Parveen, Proc. of SPIE Vol. 11877,
1187701 · © 2021 SPIE · CCC code: 0277-786X/21/\$21 · doi: 10.1117/12.2602837

Proc. of SPIE Vol. 11877 1187701-1

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](https://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 *Second iiScience International Conference 2021: Recent Advances in Photonics and Physical Sciences*, edited by M. Yasin Akhtar Raja, Zill-I-Huma Nazli, Syed A. Haider, M. Imran Asghar, Farhat Jubeen, Shaguffa Parveen, Proc. of SPIE 11877, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X
ISSN: 1996-756X (electronic)

ISBN: 9781510645981
ISBN: 9781510645998 (electronic)

Published by

SPIE

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

Telephone +1 360 676 3290 (Pacific Time)

[SPIE.org](https://spie.org)

Copyright © 2021 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.

**SPIE. DIGITAL
LIBRARY**

[SPIDigitalLibrary.org](https://spiedigitallibrary.org)

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

SECOND IISCIENCE INTERNATIONAL CONFERENCE 2021: RECENT ADVANCES IN PHOTONICS AND PHYSICAL SCIENCES

11877 02	Biomaterials-based anti-traumatic and antibacterial gauze dressing pads for partial thickness wounds [11877-2]
11877 03	Custom-building information modeling tool for renewable energy system [11877-3]
11877 04	Highly efficient light emitting transistor with transparent electrode using simulation [11877-4]
11877 05	DFT study of base catalyzed transesterification of tributyrin for biodiesel production [11877-8]
11877 06	Biochemical analysis of root exudates of canola plant in response to chemical and physical abiotic stress [11877-9]
11877 07	Synthesis, structural interpretation, and DFT study of potentially bioactive metal complexes of acyl thiocarbamides [11877-11]
11877 08	Design and characterization of a 3D-printer-based diode laser engraver [11877-15]
11877 09	Synthesis spectroscopic investigation and pharmacological evaluation of metal complex containing O, S donor ligand [11877-17]
11877 0A	On the nano-engineered III-nitride quantum-wells-based deep-UV light emitting diodes for COVID disinfection applications [11877-18]
11877 0B	Secure autonomous charging stations: machine-to-machine authentication framework [11877-20]
11877 0C	Multi granular level-based IFT model for RISC-V [11877-21]
11877 0D	Estimation of gamma radiation shielding parameters for polymer matrix composites using EGS5 Monte Carlo code [11877-22]
11877 0E	Efficiency calibration of NaI (TI) detector for disc source using point source experimental technique and Monte Carlo simulations [11877-24]