

PROCEEDINGS OF SPIE

1st International Conference on UltrafastX 2021

**Jiangbo She
Ping Chen**
Editors

**14–15 April 2022
Xi'an, China**

Hosted by
Optica (United States)
Chinese Optical Society (China)
Chinese Society for Optical Engineering (China)
Xi'an Institute of Optics and Precision Mechanics, CAS (China)
RIKEN Center for Advanced Photonics (RAP) (Japan)

Organized by
Xi'an Institute of Optics and Precision Mechanics, CAS (China)
State Key Laboratory of Transient Optics and Photonics (China)

Co-organized by
Key Laboratory of Ultrafast Photoelectric Diagnostics Technology of CAS (China)
Key Laboratory of Optical Physics, Institute of Physics CAS (China)
Optica & SPIE Student Chapter of XIOPM (China)
Youth Innovation Promotion Association Group of XIOPM, CAS (China)
Ultrafast Science Editorial Office (China)
Acta Photonica Sinica Editorial Office (China)
WaveQuanta (China)

Published by
SPIE

Volume 12291

Proceedings of SPIE 0277-786X, V. 12291

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

1st International Conference on UltrafastX 2021, edited by Jiangbo She, Ping Chen,
Proc. of SPIE Vol. 12291, 1229101 · © 2022 SPIE · 0277-786X · doi: 10.1117/12.2646013

Proc. of SPIE Vol. 12291 1229101-1

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.

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 *1st International Conference on UltrafastX 2021*, edited by Jiangbo She, Ping Chen, Proc. of SPIE 12291, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510656000

ISBN: 9781510656017 (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.

**SPIE. DIGITAL
LIBRARY**

SPIDigitalLibrary.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

v *Conference Committee*

1ST INTERNATIONAL CONFERENCE ON ULTRAFSTX 2021

- | | |
|----------|--|
| 12291 02 | High precision phase-space reconstruction method for emittance measurement of low energy high intensity electron beam [12291-2] |
| 12291 03 | Field-free orientation of linear molecules by femtosecond co-rotating two-color circularly polarized laser pulses [12291-5] |
| 12291 04 | Isolated attosecond light pulse generation from plasma surfaces at varying laser intensities and incidence angles [12291-11] |
| 12291 05 | High-power all-fiber Mamyshev oscillator [12291-18] |
| 12291 06 | Temporal compression of bunch train with picosecond spacing via THz-driven resonator [12291-19] |
| 12291 07 | A novel jitter-free ultrafast electron beam length measurement driven by self-emission THz pulse [12291-20] |
| 12291 08 | A proposal of multipulse-driven split-ring resonator for femtosecond resolution bunch length measurement [12291-38] |
| 12291 09 | Theoretical investigation of THz radiation generation from air-plasma based on an improved FDTD algorithm [12291-53] |

Conference Committee

General Chairs

Qihuang Gong, Peking University (China)
Katsumi Midorikawa, RIKEN (Japan)

General Co-Chairs

Eric Cormier, Bordeaux University (France)
François Légaré, INRS-EMT (Canada)
Rodrigo Lopez-Martens, Laboratoire d'Optique Appliquée (France)
Hongbo Sun, Tsinghua University (China)
Zhiyi Wei, Institute of Physics, CAS (China)
Xiaoping Xie, Xi'an Institute of Optics and Precision Mechanics, CAS (China)
Baoli Yao, Xi'an Institute of Optics and Precision Mechanics, CAS (China)

Advisory Committees

Min Gu, University of Shanghai for Science and Technology (China)
Minghui Hong, National University of Singapore (Singapore)
Xun Hou, Xi'an Institute of Optics and Precision Mechanics, CAS (China)
Ferenc Krausz, Max Planck Institute of Quantum Optics (Germany)
Ruxin Li, Shanghai Institute of Optics and Fine Mechanics, CAS (China)
Caiwen Ma, Xi'an Institute of Optics and Precision Mechanics, CAS (China)
Chang Hee Nam, Gwangju Institute of Science and Technology (Korea, Republic of)
Kaoru Yamanouchi, The University of Tokyo (Japan)
Xicheng Zhang, University of Rochester (USA)
Wei Zhao, Xi'an Institute of Optics and Precision Mechanics, CAS (China)

Program Chairs

Jens Biegert, Institut de Ciències Fotòniques (ICFO) (Spain)
Yuxi Fu, Xi'an Institute of Optics and Precision Mechanics, CAS (China)
Zhi-Heng Loh, Nanyang Technological University (Singapore)
Eiji J. Takahashi, RIKEN (Japan)
Jinshou Tian, Xi'an Institute of Optics and Precision Mechanics, CAS (China)

Session Chairs

- 1 Attosecond Science and Technology
 Yuxi Fu, Xi'an Institute of Optics and Precision Mechanics, CAS (China)
 Eiji J. Takahashi, RIKEN (Japan)
- 2 Ultrafast Strong Laser and Application
 Yuxin Leng, Shanghai Institute of Optics and Fine Mechanics, CAS (China)
 Yutong Li, Institute of Physics, CAS (China)
- 3 Ultrafast Terahertz Photonics
 Wenhui Fan, Xi'an Institute of Optics and Precision Mechanics (China)
 Alexander P. Shkurinov, Lomonosov Moscow State University
 (Russian Federation)
- 4 Ultrafast Imaging and Spectroscopy
 Jian Wu, East China Normal University (China)
 François Légaré, INRS-EMT (Canada)
- 5 Ultrafast Chemical Physics and Dynamics
 Zhi-Heng Loh, Nanyang Technological University(Singapore)
 Dajun Ding, Jilin University (China)
- 6 Ultrafast Particle Science, Technology, and Application
 Yongtao Zhao, Xi'an Jiaotong University (China)
 Weimin Zhou, Laser Fusion Research Center, CAEP (China)