PROCEEDINGS OF SPIE

Selected Papers from Conferences of the Photoelectronic Technology Committee of the Chinese Society of Astronautics 2014, Part II

Xiangwan Du
Dianyuan Fan
Jialing Le
Yueguang Lv
Jianquan Yao
Weimin Bao
Lijun Wang
Editors

19–24 October 2014
Suzhou, China

Organized by
Photoelectronic Technology Committee, China Society of Astronautics (China)
China Aerodynamics Research and Development Center (China)
State Key Laboratory of Laser Propulsion and Applications, Academy of Equipment (China)

Sponsored by
Chinese Society of Astronautics (China)

Volume 9522

Proceedings of SPIE 0277-786X, V. 9522

Selected Papers from Conferences of the Photoelectronic Technology Committee of the Chinese Society of Astronautics 2014, Part II, edited by Xiangwan Du, Dianyuan Fan, Jialing Le, Yueguang Lv, Jianquan Yao, Weimin Bao, Lijun Wang, Proc. of SPIE Vol. 9522, 952201 · © 2015 SPIE · CCC code: 0277-786X/15/$18 · doi: 10.1117/12.2191523

The papers included 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. The papers published in these proceedings 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 this book:
Author(s), "Title of Paper," in *Selected Papers from Conferences of the Photoelectronic Technology Committee of the Chinese Society of Astronautics 2014, Part II*, edited by Xiangwan Du, Dianyuan Fan, Jialing Le, Yueguang Lv, Jianquan Yao, Weimin Bao, Lijun Wang, Proceedings of SPIE Vol. 9522 (SPIE, Bellingham, WA, 2015) Article CID Number.

ISSN: 0277-786X
ISBN: 9781628416534

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

Printed in the United States of America.

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

SPIE Digital Library
SPIEDigitalLibrary.org

Paper Numbering: Proceedings of SPIE follow an e-First publication model, with papers published first online and then in print. Papers are published as they are submitted and meet publication criteria. A unique citation identifier (CID) number is assigned to each article at the time of the first 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, print, and electronic versions of the publication. SPIE uses a six-digit CID article numbering system in which:

- The first four 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. The complete citation is used on the first page, and an abbreviated version on subsequent pages.

Contents

Authors

Numbers in the index correspond to the last two digits of the six-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first four digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Conference Committees

Conference Chairs

Xiangwan Du, Chinese Academy of Engineering Physics (China)
Dianyuan Fan, Shanghai Institute of Optics and Fine Mechanics (China)
Jialing Le, China Aerodynamics Research and Development Center (China)
Yueguang Lv, China Northern Institute of Electronic Equipment (China)
Jianquan Yao, Tianjin University (China)
Weimin Bao, China Aerospace Science and Technology Corporation (China)
Lijun Wang, Changchun Institute of Optics, Fine Mechanics and Physics (China)

Conference Committee

Chun Tang, Institute of Applied Electronics, CAPE (China)
Yongke Zhang, Southwest Institute of Technical Physics (China)
Guangyong Jin, Changchun University of Science and Technology (China)
Yanji Hong, State Key Laboratory of Laser Propulsion and Application, Academy of Equipment (China)
Xiaoyong Liu, The 31st Research Institute of China Aerospace Science and Industry Corporation (China)
Zizheng Gong, China Academy of Space Technology (China)
Yanji Hong, State Key Laboratory of Laser Propulsion and Application, Academy of Equipment (China)
Huilin Jiang, Changchun University of Science and Technology (China)
Jing Ma, Harbin Institute of Technology (China)

Program Committee

Michalis N. Zervas, University of Southampton (United Kingdom)
Björn Manuel Hegelich, The University of Texas at Austin (United States)
Akira Shirakawa, University of Electro-Communications (Japan)
Michael W. Renfro, University of Connecticut (United States)
Jizhang Sang, Wuhan University (China)
Bin Xiangli, Shanghai Engineering Center for Microsatellites (China)
Yudong Zhang, Institute of Optics and Electronics, Chinese Academy of Sciences (China)

Introduction

We had the great honor of organizing The Second International Seminar on High-power Laser Interaction with Matter and Application, The International Seminar on Space Surveillance Technology, and The Second Symposium on Combustion Diagnostics in Suzhou. It was truly a great pleasure for us to greet more than 600 participants from many different countries attending the three conferences. We firmly believe these conferences will become important international events in the field of optical technology.

The Second International Seminar on High-power Laser Interaction with Matter and Application was sponsored by the Chinese Society of Astronautics, and organized by the Photoelectronic Technology Committee, Chinese Society of Astronautics. The International Seminar on Space Surveillance Technology was sponsored by the Chinese Society of Astronautics, and organized by the Photoelectronic Technology Committee, Chinese Society of Astronautics. The Second Symposium on Combustion Diagnostics was sponsored by the Chinese Society of Astronautics, and organized by the the China Aerodynamics Research and Development Center and State Key Laboratory of Laser Propulsion and Applications.

The purpose of the three conferences was to provide a forum for the participants to report and review innovative ideas, up-to-date progress and developments, and to discuss novel approaches to application in the optical field. We sincerely hope that research and development in the optical field will be promoted and because of international cooperation and sharing, so common interest will be enhanced.

On behalf of other co-chairmen, and the Organization Committee of the three conferences, we would like to genuinely thank our sponsors and cooperation organizers for all they have done for the conferences. Thanks also to all the authors for their contributions to the Proceedings, to all of the participants and friends for their interest and efforts in helping us to make the conferences possible, to the Program Committee for their effective work and valuable advice, and especially the Secretariat and the editors in SPIE for their tireless effort and outstanding services in preparing the conferences and publishing the Proceedings.

Xiangwan Du
Dianyuan Fan
Jialing Le
Yueguang Lv
Jianquan Yao
Weimin Bao
Lijun Wang