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Please use the following format to cite material from this book:


ISSN: 0277-786X
ISBN: 9781628415650

Published by

SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445
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Introduction

Following the successes of the Annual China Western Photonics Conference in 2010, 2011, 2012 and 2013, the Shaanxi Optical Society, Shaanxi Provincial Physical Society, Optics and Photonics Society of Singapore, Xi’an Technological University, Xi’an Jiaotong University, Xi’an Institute of Optics and Precision Mechanics of CAS, Xi’an Institute of Applied Optics, and Nanyang Technological University hosted the International Conference on Photonics and Optical Engineering 2014 (icPOE 2014) 13–15 October 2014, in Xi’an, China.

The field of photonics and optical engineering is developing rapidly worldwide. Indeed, there have been significant advances in this field in China as well over the past years. There is an increasing number of photonics and optical engineering companies setting up or ramping up their manufacturing facilities here; and at the same time, some home-grown companies are show-casing innovations and technologies. In order to cater to these developments, many universities and scientific research institutions in Xi’an, Shanghai, Tianjin, and other famous cities have established the ‘Photonics Research Centre’. These institutions have organized many national academic conferences for deeper academic exchanges and scientific interactions, as well as to strengthen the cultivation of the excellent talent, and finally to reach out to the younger generation and highlight them career and research options in photonics and optical engineering. The International Conference on Photonics and Optical Engineering (icPOE) is a conference of international academic exchanges about optical engineering and photonics technology. Its goal is to build a bridge between the study of photonics and optical engineering and the promotion of the application, manipulation, and measurement of new advanced technology in the context of continuous innovation and development. Leading scientists and researchers from all over the world submitted 138 papers, which are summarized under six topics:

1. Space optics
2. Spectral imaging technique
3. Photoelectric material and photoelectric devices
4. Optical design and manufacturing technology
5. Optical measurement and inspection
6. Micro-nano manufacturing and testing

The editors would like to express their thanks to all the authors who spent a lot of time and effort in the preparation of the papers. Our appreciation also goes to SPIE for providing excellent conditions for the publication of the proceeding. Our deep thanks are directed to master students Tian Yujun, Liu Ting, Bao Jianan, Li Jicheng, and Zhang Cong. The continuous help given especially by Zhou Renkui, Yang Xiaoxu and Chen Feng was the basis for making a successful icPOE 2014.
Finally, our special thanks and appreciation goes to all friends and colleagues for sharing with us the positive result of photonics and optical engineering.

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