

PROCEEDINGS OF SPIE

# ***Novel Optical Systems Design and Optimization XIII***

**G. Groot Gregory**  
**R. John Koshel**  
*Editors*

**2–5 August 2010**  
**San Diego, California, United States**

*Sponsored and Published by*  
SPIE

**Volume 7787**

Proceedings of SPIE, 0277-786X, v. 7787

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

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

Author(s), "Title of Paper," in *Novel Optical Systems Design and Optimization XIII*, edited by G. Groot Gregory, R. John Koshel, Proceedings of SPIE Vol. 7787 (SPIE, Bellingham, WA, 2010) Article CID Number.

ISSN 0277-786X  
ISBN 9780819482839

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

This year in San Diego, California, we held the thirteenth conference of Novel Optical Systems Design and Optimization, which was well attended. This year there were five oral sessions, one poster session, and a joint Optical Engineering Plenary Session. The primary focus of the conference was the field of optical design for computed imaging systems. The five oral sessions had titles of: Optical Design, Optical Encoding: Imaging and Polarization, Bio-Optics Systems and Measurement, LED Displays, and Novel Design and Systems. These oral sessions ranged over one and a half days of the entire Optics and Photonics 2010 meeting.

The Optical Design session included papers on layout and the design process along with a couple of papers on specific systems. The Optical Encoding session addressed techniques for optics systems using computerized methods or polarization to address defocus, depth of field, and image artifacts. The Bio-Optics Systems and Measurement session looked into the body using optical detection means. The LED Displays session showed various projection systems with LED sources. The Novel Design and Systems session covered the use of optics to perform a diverse set of applications.

Two invited papers were presented during the conference;

- Peter Goldstein of Cooper Industries shared his process for designing a freeform Fresnel lens that is not dependant of rotational symmetry
- A paper given by Yung-Lin Chen from the National Chiao Tung University used a blur metric to design a phase encoded lens.

Novel Optical Systems Design and Optimization has been capturing and building on themes that illustrate the strength and ingenuity of those working in the fields of optics. The broad set of diverse topics has led to lively and interesting discussions following each paper. Additionally, these discussions were carried into the hallways following each session. Of particular note is one paper presented during the poster session titled "Producing superresolved point-spread functions using a phase modulation technique". The two authors had engaging discussion with several attendees who all were surprised that these knowledgeable students were from Plainsboro High School. This conference will have a bright future with contributors spanning multiple generations.

Our thanks go to those who helped make this conference a success, especially the authors, audience, SPIE staff, and program committee. The authors share the credit for making this conference an unqualified success. The audience built upon this success by being active and asking engaging questions. The program committee provided excellent assistance to ensure the quality of the content

while also presiding over a number of the sessions. It was composed of Dmitry Bakin, Andrew Cheng, Jyh-Long Chern, Arthur Davis, Oliver Drosse, Andrew Harvey, Joseph Howard, Richard Juergens, Scott Lerner, Rongguang Liang, Paul Manhart, Craig Olson, Andrew Rakich, Dirk Robinson, Jose Sasian, David Shealy, Marija Strojnik, Kevin Thompson, and Mary Turner.

Next year we will return for the fourteenth iteration of this conference. The chairs will be G. Groot Gregory and Dirk Robinson. John Koshel will be stepping down to allow a fresh face to contribute to the conference. The planning for Novel Optical Systems Design and Optimization XIV in 2011 is already underway, so please start planning submissions, questions, and attendance. Focus themes are being decided at this time. If you would like to assist with the 2011 or later conference please contact one of us. We look forward to seeing you in 2011!

**G. Groot Gregory**  
**R. John Koshel**