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G. Groot Gregory
Editors

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Contents

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2 Biomedical Applications
Craig Olson, L-3 Communications Sonoma EO (United States)

3 Simulation and Metrology
Arthur J. Davis, Reflexite Energy Solutions (United States)

4 Nonimaging and Freeform Optics
Rongguang Liang, College of Optical Sciences, The University of Arizona (United States)

Introduction

In 2011 Novel Optical Systems Design and Optimization (Novel Optics) conference met for the fourteenth time at SPIE's Optics and Photonics (O+P) in San Diego, California. The four oral and one poster sessions were well attended. The four oral sessions and their respective presiders were:

- Imaging Systems: from 3D imaging to zoom lenses; presider: Andrew Sparks (L-3)
- Biomedical Applications: from microscopes to eye tracking; presider: Craig Olson (L-3)
- Simulation and Metrology: from multi-threaded ray tracing to aberration measurement; presider: Arthur Davis (Reflexite), and
- Nonimaging and Freeform Optics: from simultaneous multiple surface telephoto lenses to headlights; presider: Rongguang Liang (Univ. of Arizona).

In 2011 the oral sessions were held on a single day so that the conference would be better focused and limit the overlap with other conferences held at O+P. This choice meant that there were more posters. Fortunately, the poster session immediately followed the completion of the oral sessions, such that the Novel Optics conference was compact and finished in one day.

There were four invited papers at Novel Optics:

- "3D imaging with a single-aperture 3-mm objective lens: concept, fabrication, and test," by Sam Bae, Ronald Komiski, Harish Manohara (JPL), and Hrayr Shahninian (Skull Base Institute)
- "Design considerations for biomedical optical imaging systems," by Rongguang Liang (Univ. of Arizona, but submitted when he was at Carestream Health)
- "Scalability of a cross-platform multi-threaded non-sequential optical ray tracer," by Alan Greynolds (Ruda-Cardinal); and
- "Determination of off-axis aberrations of imaging systems using on-axis measurements," by James Burge (Univ. of Arizona).

Additionally, the plenary paper from Prof. John Greivenkamp (Univ. of Arizona) entitled "The history of telescope and binoculars: an engineering perspective" appears in this volume. The Novel Optical Systems Design and Optimization conference continues to grow by presenting state-of-the-art optical systems and designs, while always being cognizant of the tools, design techniques, and systems from the past. Though the conference name starts with "Novel," we would be remiss in not recognizing that the past guides a number of the designs of this day and future ones. The diverse topics presented at the conference led to lively and interesting discussions following each paper. Additionally, these

discussions were carried into the hallways following each session. 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 take the bulk of the credit for making this conference an unqualified success. The audience built upon this success by being active and asking engaging questions. The SPIE staff ensured that everything ran smoothly before, during, and after the meeting. The program committee provided excellent assistance to ensure the quality of the content while also presiding over the sessions. The program committee was composed of W. Andrew Cheng, Jyh-Long Chern, Arthur J. Davis, Oliver Dross, Frank S. Grochocki, Andrew R. Harvey, Joseph M. Howard, Richard C. Juergens, Scott A. Lerner, Rongguang Liang, Paul K. Manhart, Craig Olson, Andrew Rakich, Michael D. Robinson, José Sasián, David L. Shealy, Andrew W. Sparks, Marija Strojnik, and Kevin P. Thompson.

Next year we will return for the 15th iteration of this conference. The chairs will be Groot Gregory and Art Davis. John Koshel will be stepping down (finally) to allow a fresh face to contribute to the conference. The planning for Novel Optical Systems Design and Optimization XV in 2012 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 2012 or later conference please contact one of us. We look forward to seeing you in 2012.

R. John Koshel
G. Groot Gregory