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Nonimaging Optics and Efficient Illumination Systems V

**Roland Winston
R. John Koschel**
Editors

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Introduction

Nonimaging Optics and Efficient Illumination Systems was held for the fifth time at SPIE's Optics and Photonics meeting, but this conference is descendent of Roland Winston's successful Nonimaging Optics: Maximum Efficiency Light Transfer. This year the Nonimaging Optics conference continued its excellent performance. It brings together a disparate number of optics communities, from nonimaging optics to source manufacturers to illumination to concentrating solar. This meeting is one of the sole places where these communities can interact and learn new techniques, develop sources, and participate in the growth of solid-state lighting, concentrating photovoltaic, and display industries. Based upon the excitement and packed meeting room, the sixth iteration in 2009 will be a success.

There were four oral sessions and one poster session for this conference. The primary focus topics of this year's meeting were the limits of design in nonimaging optics, solar and daylighting applications, lightpipes, and LED applications. Roland Winston started the conference with an introduction about new developments in aplanatic systems. After that, the primary focus of the conference started with a session titled Limits in Design. This session touched upon étendue, tolerancing, and beam shaping. Gerhard Kloos of Hella KgaA Hueck and Company from Germany had an invited paper discussing the theory and application of applying optical design tolerancing to the field of illumination devices. The next session was Solar and Daylighting, presided over by Jeffrey Gordon. Maikel Hernández of Light Prescriptions Innovators Europe gave an invited talk entitled "High-performance Köhler concentrators with uniform irradiance on solar cell." The first afternoon session was LED Applications. Within this session, an invited talk by Sergey V. Kudaev from Fraunhofer-Institut für Angewandte Optik und Feinmechanik presented an invited talk on how to scale folded, reflective LED collimators. The fourth and final session for the Nonimaging Optics conference was Lightguides. A number of authors, especially those from overseas, presented interesting work on lightpipes and lightguides, especially as applied to the display industry. In the evening of the following day, a number of posters were presented as part of this conference.

Simply said, the field of illumination continues to expand at a fast pace. The vitality and range of topics in Nonimaging Optics and Efficient Illumination Systems make for an educational and engaging day. Topics ranged from the theoretical limits such as conservation of étendue and skewness to applications of LED sources in external, aeronautical applications. Étendue is a growing topic in a number of the papers presented – meaning that the fundamental design limits are increasingly being used by those entering the illumination field. Finally, LEDs, as evidenced by the number of papers presenting work using these sources, are the source of choice for studies in this field. The papers presenting results using other sources, such as arc lamps, are still evident, but their number is decreasing.

These other sources present different challenges, while providing a wealth of insight on how to proceed with solid-state sources.

We thank those who helped put together this conference, especially the authors, audience, SPIE staff, and program committee. The authors are the ones who provided the material to make the conference a success on its own. As alluded to above, the audience built on this success by asking many 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 a number of the sessions. It was composed of Pablo Benítez, William Cassarly, Philip Gleckman, Jeffrey Gordon, Anurag Gupta, Kenneth Li, Juan Carlos Miñano, Holger Moench, Narkis Shatz, and John Van Derlofske.

Next year, we will return for the sixth iteration of this conference. John Koshel is stepping aside as a chair so that Prof. Jeffrey Gordon can take the reins with Roland Winston on the planning of this event. This chair turnover format will ensure continuity from year to year while also bringing new insight into the conference. The planning for Nonimaging Optics and Efficient Illumination Systems VI in 2009 is already under way, so please start planning submissions and attendance. The tentative focus areas will be determined by Roland and Jeffrey. If you would like to assist with next year's conference or later conferences, please contact one of the chairs. We look forward to seeing you in 2009.

Roland Winston
R. John Koshel