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Daniel G. Smith
Frank Wyrowski
Andreas Erdmann
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Introduction

We humbly invite you to make use of the materials presented in these proceedings of the Physical Optics Conference at the Optical Systems Design Symposium held in Marseille 2011. We hope that these materials will prove interesting and useful to you and your organizations.

The field of physical optics can encompass a huge array of subjects, from free-space scalar wave theory to electromagnetic field propagation through complex media. Today, a combination of highly developed and continually evolving theory, increasingly sophisticated algorithms, and powerful computational hardware is providing a deeper understanding of light and its interaction with matter in natural and engineered systems.

Like the subject itself, the papers within these proceedings cover a wide range of topics, methods, and theories loosely gathered together under the heading of Physical Optics. You'll find papers on various aspects of imaging in microlithography, scattered light and polarization, optical techniques for characterizing rough surfaces, new and clever methods for testing computational beam propagation, new perspectives on polarization and speckle, and much more.

As chair of this conference I owe its success to the invaluable input and assistance of my co-chairs Andreas Erdmann and Frank Wyrowski. Furthermore, we owe our thanks to our esteemed program committee who helped in soliciting these interesting papers, to the session chairs and authors who generously gave their time and energy to participate in our conference to the benefit of all, and to the many talented people at SPIE who worked so hard to make this symposium the success that it is. In general, we were pleased with the level of participation that we saw for our new conference, and we are encouraged enough to believe that the trend will continue at the next one.

Daniel G. Smith
Frank Wyrowski
Andreas Erdmann