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Special Section Guest Editorial: Advances in Nanostructured Thin Films

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With ingenuity and fortitude, the structures of thin films can be engineered at the nanometer length scale. The control over the optical and photonic properties of thin films that is thereby afforded may be usefully exploited for a host of practical applications, including optical sensing, photovoltaic electricity generation, the creation of biomimetic components, optical coatings, and so forth, as well as harnessed for fundamental investigations into the nature of light-matter interactions. Societal benefits may follow in the shape of devices with enhanced performances, lower costs, and lesser environmental impacts, not to mention the general cultural benefits that flow from the advancement of science and engineering.

It is within this context that the eighth annual Conference on Nanostructured Thin Films took place in San Diego on the 12th and 13th of August 2015 as part of the annual SPIE Optics + Photonics symposium. For the past eight years, this conference has provided a forum for the nanostructured-thin-films community to present and discuss its latest research findings. As in previous conferences, the 2015 conference featured a diverse mix of presentations pertaining to the design, fabrication, and characterization of nanostructured thin films, delivered by both well-established and up-and-coming researchers, representing all parts of the world. In total, 39 presentations were delivered, spread over 10 oral sessions and one poster session, on topics such as control and modification, applications and devices, theoretical studies, and fabrication. The conference began with a keynote lecture on optical coatings and metamaterials.

The following special section of the *Journal of Nanophotonics* comprises papers either based on presentations at Nanostructured Thin Films VIII or closely related to presentations at the conference. These papers provide a bird's-eye view of current advances relating to the optics and photonics of nanostructured thin films, and illustrate the vitality of this rapidly developing field of research.

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Akhlesh Lakhtakia is the Charles Godfrey Binder (Endowed) Professor of Engineering Science and Mechanics at The Pennsylvania State University. His current research interests include electromagnetic surface waves, circular polarization and Beltrami fields, thin-film solar cells, sculptured thin films, mimunes, bone refacing, bioreplication, and forensic science. He became a Fellow of SPIE in 1996.

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