

# Optical Engineering

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## **Kingslake Medal**

Michael T. Eismann



## Kingslake Medal

Rudolf Kingslake is recognized as one of the preeminent optical engineers in the history of the United States. While born and educated in England, he developed and taught the first lens design and geometrical optics courses formally offered in the United States at the University of Rochester in the 1930s, served as the head of the Lens Design Department of Kodak Research Laboratories, and wrote three books on optical design. In recognition of his outstanding contributions to the field of optical engineering, SPIE annually awards the Rudolf Kingslake Medal and Prize to the most noteworthy original paper to appear in *Optical Engineering* on theoretical or experimental aspects of optical engineering.

Given the prestigious nature of this award, I wanted to devote this editorial to recognize this year's award winners. They are Christof Pruss, Goran Bastian Baer, Johannes Schindler, and Wolfgang Osten, who were selected by the Kingslake Award Committee for their July 2017 paper, "Measuring aspheres quickly: tilted wave interferometry." Goran Baer is from Baer-OE in Germany while the other three authors are affiliated with the Institut für Technische Optik, also in Germany. This paper describes a new approach tackling the problem of precisely measuring the profile of aspheric and freeform optics, important new elements in modern optical systems, in a practical and time-efficient

manner. The authors address this problem using an interferometric illumination system composed of a microlens and pinhole array to ensure that some reflected laser light reaches the camera and produces interference fringes despite the unknown and arbitrary surface shape. This approach is expected to have broad applicability to optical testing and quality control, providing a metrology advance to complement recent advances in aspheric and freeform optics manufacturing.

As I am now completing my third year as editor of *Optical Engineering*, I am remiss in recognizing the Kingslake award winners from the first two years of my tenure. So let me attempt to make up for that oversight. The 2016 award went to Peter de Groot and James Biegen for their July 2016 paper, "Interference microscope objectives for wide field areal surface topography measurements," and the 2015 award went to Xinmin Shen, Qunzhang Tu, Hui Deng, Guoliang Jiang, and Kazuya Yamamura for their May 2015 paper, "Mechanism analysis on finishing of reaction-sintered silicon carbide by combination of water vapor plasma oxidation and ceria slurry polishing."

Selection of the annual Rudolf Kingslake Medal recipients is a very difficult and time-consuming process beginning with the initial identification of candidate papers by *Optical Engineering* editorial board members and reviewers, and ending with a careful review of the highest quality and most impactful papers by the awards committee members. I would like to thank the committee members for their efforts, and congratulate this year's recipients, as well as those from the prior two years, for publishing papers in our journal that serve as a model for the quality and significance that we seek. While these have been recognized as the best, I know that the committee is always challenged with separating them from a number of other top-quality *Optical Engineering* papers. Please continue to make their job difficult.

**Michael T. Eismann**  
Editor-in-Chief