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**Tina E. Kidger
Stuart David**
Editors

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Introduction

This is the fifth in a series of SPIE Illumination Optics conferences, forming part of the Optical Systems Design symposia series, now presenting the tenth SPIE Symposium of its kind in Europe. Needless to say, these conferences and symposia are certainly mature in their level of European presence. What you will find that is not so mature is the level of technology contained in the illumination conferences. This is certainly a desirable factor of the conferences in that the technology is always changing from one conference to another and demands continuing advancement and pursuit by the designers.

When the illumination conferences began, the concept of freeform design was barely mentioned. Now, freeform discussion is a significant part of each conference including multi-surface freeform lens and freeform road surface lighting mentioned in this conference. In this conference, you will also note the presentation of a paper addressing the emerging application of artificial intelligence to self-generated freeform optical design; a primary illustration of the fact that the technology continues to evolve.

The spectrum of LED applications is also ever expanding and the technology necessary to mold the peculiar features of LEDs to desirable optical characteristics continues to expand. Light guides are now being implemented to provide internal lighting in automobiles. Further, multi-colored LED engines can create white light sources when reversed. These newer design areas will continue to evolve as well as still unforeseen technological challenges, so that the need and usefulness of illumination conferences is easily forecast to continue.

The response to the call-for-papers for this fifth European illumination optics conference has been the best ever; this response is most likely not only a result of the convenient Frankfurt conference location but the expanding requirement for optical illumination design solutions. Your conference chairs hope that you will find the contents of these proceedings useful and rewarding, and that all will look forward to participating in future SPIE European optical illumination conferences.

**Tina E. Kidger
Stuart David**