Nonimaging Optics: Efficient Design for Illumination and Solar Concentration XVI

This conference has an open **call for papers:**

SUBMIT AN ABSTRACT
(SIGN IN REQUIRED)

Submission guidelines for Authors and Presenters

Important Dates

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Abstract Due:
30 January 2019

Author Notification:
8 April 2019

Manuscript Due Date:
17 July 2019

Conference Committee

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Call for Papers

Many important optical subsystems are concerned with power transfer and brightness rather than with image fidelity. Nonimaging optics is a design approach that departs from the methods of traditional optical design to develop techniques for maximizing the collecting power of concentrator and illuminator systems.

Nonimaging devices substantially outperform conventional imaging lenses and mirrors in these applications, approaching the theoretical (thermodynamic) limit. Nonimaging design methods usually involve solving ordinary or partial differential equations, calculating the flow lines of the ray bundles, coupling the edge rays of extended sources and targets or optimizing a multi-parameter merit function computed by ray-tracing techniques. While geometrically based, the design fundamentals have been extended to the diffraction limited and even sub-wavelength domain. Therefore applicability exists in near-field optical microscopy and nanometer scale optics.

This conference will address the theory of nonimaging optics and its application to the design and experimental realization of illumination and concentration systems, tailored freeform optics, display backlighting, condenser optics, high-flux solar and infrared concentration, daylighting, LED optical systems, laser pumping, and luminaires.

The revival of considerable work in solar energy concentration for both photovoltaic and thermal applications, much of which includes nonimaging optics, prompts reincorporating these fields into this conference.

The use of nonimaging optics promises higher efficiency, relaxed physical tolerances, improved optical uniformity, and reduced manufacturing costs. We encourage submissions ranging from fundamentals to critical design issues and practical applications.

Paper submissions are also solicited in the following and related areas:

- radiative transfer near the étendue limit
- concentrator optics
- illumination and irradiation optics
- solar photovoltaic and solar thermal concentration
- the optical science of light trapping
- the science of extracting the luminescence

- electro-luminescent refrigeration
- thermo-photovoltaic electricity generation
- fiber-optic and light-pipe optical systems
- radiometry
- daylighting
- characterization of light-transfer devices
- freeform optics
- optical furnaces and radiative heating
- infrared detection
- LED applications
- laser pumping
- condenser optics
- ultra-compact concentrator systems
- luminaires
- Cerenkov detectors for astronomy.

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