

Illuminating Engineering Society Annual Conference (IES24)

The Lighting Conference

New York, New York, USA
15-17 August 2024

ISBN: 979-8-3313-0980-0

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2024) by Illuminating Engineering Society (IES)
All rights reserved.

Printed by Curran Associates, Inc. (2025)

For permission requests, please contact Illuminating Engineering Society of North America (IES)
at the address below.

Illuminating Engineering Society (IES)
85 Broad Street, 17th Floor
New York, NY 10004
USA

Phone: (212) 248-5000

www.ies.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Contents

Peer-Reviewed Papers

Automated shade control based on Daylight Glare Probability 1

Abdulrahman Aljuhani, Ph.D., Richard Mistrick, Ph.D., PE, FIES

A Dynamic Visual Field Model for Capturing Light Entering Human Eyes 31

Siqi He, Ph.D., Hongyi Cai, Ph.D.

Could Neuroscience and Smart Technologies Be the Answer to Inclusive Street Lighting? 75

Navaaz Davoodian, Ph.D.

Biodynamic lighting: establishing foundational considerations for ‘life-centric’ lighting 124

Amardeep M. Dugar, Ph.D.

Background Lighting in Art Galleries: Using Colored Lighting to Increase Perceived Vibrance of Artworks 185

Anushka Jain

Perception of Indoor Lighting: A Comparative Study in Physical and Virtual Environments 226

Niloofer Nikookar, Azadeh O. Sawyer, Ankita Sinha, Riya Malhotra, Siobhan

Rockcastle, Mayank Goel

Technical Presentations

Exploring the Use of Eye Tracking Devices in Lighting Research: A Comparative Analysis of Tobii Pro and Pupil Labs Glasses 262

Rugved Kore

The Effect of Window Glazing on Circadian Light Distribution 291

Habib Arjmand Mazidi

An alternative assessment method of window view quality based on image quality metrics 314

Won Hee Ko, Alp Durmus, & Yuwei Wang

Investigating the Visibility Threshold of the Phantom Array Effect in Real Life Context 335

Maria Nilsson Tengelin

Phantom Array Practicians Approach	356
<i>Ernesto Mendoza, Andrew Jackson & Michael O'Boyle</i>	
How Do Ambient Lighting and Thermal Conditions Interact to Affect Cognitive and Physiological Responses in Older Adults?	402
<i>Nina Sharp, Ph.D., Seonghyuk Son & Dongwoo (Jason) Yeom</i>	
The Cognitive Impacts of Light: Investigating the Differential Effects of Momentary and Daily Exposure	421
<i>Mahya Fani, Nina Sharp, Mohammed Alrahyani, Sophia Lamp & Ndeye Yauge</i>	
Assessing Spill Light in a Sensitive Coastal Area: An In-Depth Case Study of Two Different Lighting Installations	445
<i>Stefan Källberg</i>	
Impact of Melanopsin and Color Gamut on Spatial Brightness	465
<i>Wangyang Song, Alp Durmus</i>	
The effect of luminance, visual angle, and contrast on peripheral brightness perception	482
<i>Parisa Mahmoudzadeh, Wenye Hu, Wendy Davis, Alp Durmus</i>	
User preference of sunset dimming	505
<i>Crispin Rock</i>	
Enlightening Final Moments: Lighting for the End-of-Life Journey	529
<i>Yun-Hsuan Tsai</i>	
How Extended PoE is solving the Carbon puzzle for intelligent lighting	579
<i>Karl Jonsson</i>	
CALiPER Radiometric Testing of Germicidal UV Products, Round 3: Far UV-C Luminaires	618
<i>Jason Tuenge</i>	
The Impact of Nighttime Lighting Environments on Perceived Safety in California's Underserved Community Parks	634
<i>Jae Yong Suk</i>	
Predictive Modeling of Cognitive Performance and Sleep Quality in Older Adults: Evaluating the Impact of Thermal and Lighting Conditions	668
<i>Seonghyuk Son, Nina Sharp, Dongwoo (Jason) Yeom</i>	

Diagnosing Human-light Interactions with the Aid of 360° HDR Imaging for Lighting Design 701
Hongyi Cai, Siqu He

Teaching Daylighting Design Through Experiential Learning 754
Clotilde Pierson

Poster Presentations - N/A

From Watts to Wisdom: Integrating Data for Greener Buildings N/A
Kate Sweater Hickcox, Scott Unger, Rebe Feraldi, Kasey Johnston, Taler Bixler, Tyler Harris

Equity by Design: Navigating Justice in Energy Technology Deployment N/A
Kate Sweater Hickcox, Elsie Puig-Santana, Kasey Johnston

Light on Crime N/A
Hyun Woo Hwangbo

Transforming Museum Spaces into a Sensory Experience N/A
Marco Miglioli

DGP: The Impact on Driver's Visual Acuity N/A
Bradley Mucha

Accuracy of spectral light simulation tools in field conditions N/A
Alfiya Orman