



**2023 Eighth Junior Conference on Lighting**

## **LIGHTING 2023**

23 – 25 September 2023 // Hybrid Conference

Technically Co-sponsored by IEEE | conference record [#59819](#)

Financially Co-sponsored by the Technical University of Sofia

### **PROGRAM**



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*Member of the International Commission on Illumination (CIE)*



**Technical University of Sofia**



**IEEE – Bulgarian Section**

*Lighting 2023 is financially co-sponsored under an Agreement 231ДН0021-01 as part of the "Days of Science" initiative of the Technical University of Sofia*

## FULL PROGRAM

\* Times are listed in Eastern European Summer Time (EEST)

### [TIME CONVERTER](#)

## Saturday | September 23, 2023

13:00 – 13:30 EEST [Sozopol, BG // Virtual]

### Opening ceremony

13:30 – 15:00 EEST [Sozopol, BG // Virtual]

### LED Lighting

#### Photobiology and non-Visual Effects of Light

#### Ergonomics and Physiology of Vision. Human Aspects of Lighting

Chair: Plamen Tsankov, *Technical University of Gabrovo, Bulgaria*

#### Measurement and Analysis of Photometric Characteristics and Efficacy of LED Luminaires for Indoor, Industrial and Street Lighting with and without an Optical System

Milko Yovchev, Plamen Tsankov, Ivaylo Stoyanov, *Bulgaria*

#### Measurement and Analysis of The Blue Light Hazard Efficacy of Luminous Radiation of Indoor LED lamps

Plamen Tsankov, Veselina Stefanova, Milko Yovchev, Ivaylo Stoyanov, *Bulgaria*

#### Biodynamic Lighting Systems and Influence of the Correlated Color Temperature over the Educational Working Process

Kamelia Nikolova, Dimitar Pavlov, *Bulgaria*

#### Investigation of the Non-Image Forming Effects of Existing Human Centric Lighting Systems

Iva Petrinska, Kamelia Nikolova, *Bulgaria*

#### Methods for Determining the Spectral Composition of Light Emission of LEDs with the use of Discrete Data from Spectroradiometers

Valentin Gyurov, Tsvetomir Dimitrov, Zhulieta Vasileva, *Bulgaria*

#### [Virtual] Understanding Lighting Users' Preferences through a Real Experience Approach using Mixed Methods

Remedios M López Lovillo, Samuel Dominguez Amarillo, Juan Jose Sendra, Ignacio Acosta, *Spain*

15:00 – 15:30 EEST

Break

15:30 – 17:00 EEST [Sozopol, BG // Virtual]

### Lighting Calculations. Photometry and Colorimetry

### Common Lighting Aspects. Standards and Legislation in Lighting

Chair: Gergana Vacheva, *Technical University of Sofia, Bulgaria*

#### Indoor LED Luminaire Reflector Profile Optimization to Minimize the RUG Glare Index

Milko Yovchev, *Bulgaria*

#### Investigation of the Color Shift of White Road Markings

Iva Petrinska, Dilyan Ivanov, *Bulgaria*

**[Virtual] A Virtual Light Laboratory Application for Students Training**

Metin Ibryamov, Orlin Petrov, *Bulgaria*

**[Virtual] Cellular and Humoral Defense Mechanisms of the Mammary Gland in Sheep with Subclinical Mastitis**

Aleksandar Stoimenov, Kalin Hristov, Krasimira Genova, Tandzhu Mehmedov, *Bulgaria*

**[Virtual] Sensitivity of mononuclear cells of different origin to fumonisin B<sub>1</sub>**

Ognian Moskov, Krasimira Genova, Tandzhu Mehmedov, Kalin Hristov, *Bulgaria*

**Sunday | September 24, 2023**

9:00 – 10:30 EEST [Sozopol, BG // Virtual]

**Renewable Energy Sources and Lighting**

**Energy Efficiency and Economic Aspects of Lighting**

**Management of Lighting and Renewable Energy Sources**

Chair: Kamelia Nikolova, *Technical University of Sofia, Bulgaria*

**[Virtual] Increasing the Efficiency of Lighting Objects in the Urban Environment**

Pylyp Hovorov, Anastasiia Kindinova, Mykola Khvorost, *Ukraine*

**[Virtual] Optimum Power from Decentralized Sources in the Connecting Branches of Medium Voltage Distribution Networks**

Petya Tsvetkova, *Bulgaria*

**[Virtual] Efficiency of the Neutral Grounding Mode in Medium Voltage Distribution Networks**

Hristo Ilchev, *Bulgaria*

**[Virtual] Thermal Effect of Solar Irradiance on Decorative Tube-Shaped LED Lamps**

Marko M. Šučurović, Dardan O. Klimenta, Nebojša B. Raičević, *Serbia*

**Design Concept for Sports Lighting Reconstruction of Football Field in Lighting Class III**

Valentin Gyurov, Tsvetomir Dimitrov, *Bulgaria*

**Energy Management**

Mohammad Hamid Sarwary, *Afghanistan*

10:30 – 11:00 EEST

Break

11:00 – 12:00 EEST [Sozopol, BG // Virtual]

**Management of Lighting and Renewable Energy Sources**

**Daylight Design and Architectural Lighting**

Chair: Kamen Georgiev, *Technical University of Sofia, Bulgaria*

**Light Security**

Teodor Kyuchukov, *Bulgaria*

**Master Plan of Dupnitsa City**

Dimitar Pavlov, Kiril Kassev, Kamen Georgiev, Dilyan Ivanov, *Bulgaria*

**Architectural and Artistic Lighting of the Historical Museum in Kardzhali**

Dimitar Pavlov, Kalinka Todorova, *Bulgaria*

12:00 – 13:30 EEST

Break

13:30 – 15:00 EEST [Sozopol, BG // Virtual]

## POSTER SESSION I

### Renewable Energy Sources and Lighting

### Communication, Networking and Broadcast Technologies

Chair: Dimitar Pavlov, *Technical University of Sofia, Bulgaria*

#### **Evaluation and Measures for Improving the Energy Efficiency of Medium-Sized Enterprises**

Plamen Stanchev Gergana Vacheva, Nikolay Hinov, *Bulgaria*

#### **Review of Energy Management Systems for Small and Medium Enterprises**

Gergana Vacheva, Plamen Stanchev, Nikolay Hinov, *Bulgaria*

#### **A Study on the Operation of Own Needs' Equipment under Fault Conditions**

Valentin Totev, Dzhengiz Ibram, Plamen Rizov, Vultchan Gueorgiev, *Bulgaria*

#### **Cloud Service Module for Lighting Equipment Monitoring**

Atanas Kolev, Kiril Kassev, Angel Pachamanov, *Bulgaria*

#### **Internet Monitoring of Lighting Systems using the Power Grid as a Communication Medium**

Angel Pachamanov, Iva Petrinska, Kamen Georgiev, Marin Dimitrov, Atanas Kolev, *Bulgaria*

#### **Performance Comparison and Analysis of AODV, DSDV and DSR Routing Protocols in VANET for Urban Scenario**

Tsvetan Marinov, Zlatka Valkova-Jarvis, Georgi Iliev, *Bulgaria*

#### **Daily Adaptive Lighting for Swimming Pools**

Kamelia Nikolova, Dimitar Pavlov, Alexander Alexandrov, *Bulgaria*

15:00 – 15:30 EEST

Break

15:30 – 17:00 EEST [Sozopol, BG // Virtual]

## POSTER SESSION II

### Renewable Energy Sources and Lighting

### Lighting Technology (lamps, luminaires, lighting controls)

### Common Lighting Aspects. Standards and Legislation in Lighting

Chair: Orlin Petrov, *Angel Kanchev University of Ruse, Bulgaria*

#### **A Case-study on Compensating Reactive Power of Medium Voltage Cables**

Dzhengiz Ibram, *Bulgaria*

#### **Modelling of Own Needs' Equipment during Faults**

Valentin Totev, Dzhengiz Ibram, Plamen Rizov, Vultchan Gueorgiev, *Bulgaria*

#### **CLO for Stepwise Adaptive Lighting of Road Tunnels**

Angel Pachamanov, Kamen Georgiev, Marin Dimitrov, *Bulgaria*

#### **Opportunities for Energy Storage from Rooftop PV Plants for the Needs of Public Lighting in Municipalities**

Angel Pachamanov, Kamen Georgiev, Miroslav Konstantinov, *Bulgaria*

#### **Hybrid Rooftop PV Plants and Determining the Size of Energy Storage Devices by Lighting Load**

Angel Pachamanov, Borislav Boychev, Marin Dimitrov, *Bulgaria*

**[Virtual] Back-up LED Lighting System with a Bidirectional SEPIC-ZETA Converter based – A Computer Study**

Hristo Antchev, *Bulgaria*

**[Virtual] Measurement of the variables determining the amount of stray currents in electrified urban surface transport in Sofia**

Iva Petrinska, Polina Petkova, *Bulgaria*

19:00 – 22:00 EEST [Sozopol, BG]

**Gala-Dinner**

**Monday | September 25, 2023**

9:00 – 10:00 EEST [Virtual]

**Communication, Networking and Broadcast Technologies**

Chair: Maria Nenova, *Technical University of Sofia, Bulgaria*

**[Virtual] Quantum Technology: Unleashing the Power and Shaping the Future of Cybersecurity**

Karuna Bhosale<sup>1</sup>, Anamika Singh<sup>1</sup>, Siddhi Ambre<sup>1</sup>, Maria Nenova<sup>2</sup>, Zlatka Valkova-Jarvis<sup>2</sup>, *India<sup>1</sup>, Bulgaria<sup>2</sup>*

**[Virtual] Security Threats and Models in the Field of Renewable Energy Systems**

Boryana Stoycheva, Maria Nenova, Zlatka Valkova-Jarvis, Kiril Kassev, *Bulgaria*

**[Virtual] Unveiling IBM's Strategy for Advanced Copy Services Replications**

Mario Ivanov, Rene Ravanliyski, *Bulgaria*

**[Virtual] Copy Services: A Client's Shield Against Data Loss**

Mario Ivanov, Rene Ravanliyski, *Bulgaria*

10:00 – 10:15 EEST

Break

10:15 – 11:00 EEST [Virtual]

**Communication, Networking and Broadcast Technologies**

**Common Lighting Aspects. Standards and Legislation in Lighting**

Chair: Dilyan Ivanov, *Technical University of Sofia, Bulgaria*

**[Virtual] Comparative Analysis of Life Expectancy Prediction for IGBT with Neural Network and Noise Data**

Vasil Shterev, Kalin Dimitrov, Maria Nenova, *Bulgaria*

**[Virtual] Lymphocyte Phenotypes in Pheasants under Different Factors**

Tandzhu Mehmedov, Krasimira Genova, Kalin Hristov, *Bulgaria*

**[Virtual] Detailed Check-up of Trees using Modern Technologies**

Maxim Yanev, *Bulgaria*

11:00 – 11:15 EEST [Sozopol, BG // Virtual]

**Closing ceremony**

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## GENERAL



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### Conference Topics

1. LED Lighting
2. Photobiology and non-Visual Effects of Light
3. Lighting Technology (lamps, luminaires, lighting controls)
4. Lighting Calculations. Photometry and Colorimetry
5. Energy Efficiency and Economic Aspects of Lighting
6. Ergonomics and Physiology of Vision. Human Aspects of Lighting
7. Interior, Exterior and Road Lighting. Lighting Quality. Light Pollution
8. Renewable Energy Sources and Lighting
9. Management of Lighting and Renewable Energy Sources
10. Daylight Design and Architectural Lighting
11. Common Lighting Aspects. Standards and Legislation in Lighting