



## 2024 Ninth Junior Conference on Lighting

### **LIGHTING 2024**

04 – 06 June 2024 // Hybrid Conference

Technically Co-sponsored by IEEE Bulgarian Section | conference record #62260

Financially Co-sponsored by the Technical University of Sofia

### **PROGRAM**



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**National Committee for Lighting in Bulgaria (NKO)**

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



**Technical University of Sofia**



**IEEE – Bulgarian Section**

*Lighting 2024 is financially co-sponsored under an Agreement 241ДH0006-01 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](#)

## Tuesday | June 04, 2024

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

### Opening Ceremony

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

### Session 1

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

**[Virtual] Increasing the efficiency of lighting systems as an element of city power supply systems**  
Pylyp Hovorov, Mykola Khvorost, Anastasiia Kindinova, Vladlen Hovorov, *Ukraine*

**[Virtual] Red Bricks and White Collars: Exploring the Visual Comfort Dynamics of Exposed Brick Interiors in Office Environments**  
Basma Vivek Rahim, Aysha Saifudeen, *India*

**Study of the Spectral Characteristics of LED Domestic Lamps During the Warm-up Process**  
Plamen Tsankov, Milko Yovchev, Ivaylo Stoyanov, *Bulgaria*

**LED Retrofitting for Fluorescent Troffers with Minimum Environmental Impact – Case Study**  
Iva Petrinska, Dilyan Ivanov, *Bulgaria*

**Public-private partnership between a municipality and a water supply company in the field of street lighting**  
Angel Pachamanov, Angel Kolov, Dimitar Pavlov, Doncho Yanev, Dessislava Pachamanov, *Bulgaria*

**The Impact of Adaptive Lighting on Psychophysical State in Educational Environments – An Experimental Study**  
Kamelia Nikolova, Dimitar Pavlov, Rad Stanev, *Bulgaria*

15:00 – 15:30 EEST

Break

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

## Session 2

Chair: Iva Petrinska, *Technical University of Sofia, Bulgaria*

### **Management of a mini hydroelectric plant according to an annual load schedule of public lighting**

Angel Pachamanov, Atanas Kolev, Angel Kolov, Yavor Yanev, Dessislava Pachamanov, *Bulgaria*

### **Optimizing the operation of a mini hydroelectric plant for the needs of street lighting**

Angel Pachamanov, Angel Kolov, Dimitar Pavlov, Doncho Yanev, Dessislava Pachamanov, *Bulgaria*

### **Sustainable Energy Management and its Correlation with Renewable Resources**

Mohammad Hamid Sarwary, *Afghanistan*

### **[Virtual] Approaches for Implementing Artificial Intelligence in Cyber Security to Improve, Speed Up and Optimize Processes**

Elina Tlachenska, Kiril Ivanov, Maria Nenova, Zlatka Valkova-Jarvis, *Bulgaria*

## Wednesday| June 05, 2024

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

## Session 3

Chair: Milko Yovchev, *Technical University of Gabrovo, Bulgaria*

### **Assessment of the Impact of Snow Cover on Photovoltaic System**

Mincho Velkov, Ana Dimitrova, Stanimir Stefanov, *Bulgaria*

### **Intelligent management of harmonic distortions in the electrical network caused by modern LED lighting systems**

Sadetin Basri, Orlin Petrov, *Bulgaria*

### **Research and analysis of the hourly variation of solar radiation at the photovoltaic power plants in Gabrovo Tech Park**

Plamen Tsankov, Ivaylo Lazarov, *Bulgaria*

### **[Virtual] Area and Power Efficient Approximate Radix-4 Adders For Image Application**

Nakul Gowda, *Bulgaria*

10:30 – 11:00 EEST

Break

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

## Session 4

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

### **Reconstruction of the lighting system of a football stadium**

Kamen Georgiev, Dimitar Pavlov, Borislav Boychev, *Bulgaria*

### **Lighting Measurements of Reconstructed Multifunctional Sports Hall**

Kamen Georgiev, Dilyan Ivanov, Iva Petrinska, *Bulgaria*

### **Comparative Analysis of the Lighting Engineering Characteristics of an Indoor LED Luminaire with Different Microprism Lenses**

Plamen Tsankov, Dimitar Pavlov, Kiril Kassev, Milko Yovchev, Ivaylo Stoyanov, *Bulgaria*

### **Spectral Power Distribution of Artificial Light Sources Leading to Alpha Opic Influence on Humans**

Iva Petrinska, Dilyan Ivanov, *Bulgaria*

12:00 – 13:30 EEST

Break

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

## Poster Session I

Chair: Vladislav Petrov, *Technical University of Sofia, Bulgaria*

### **Possibilities of obtaining electricity from biomass**

Nikolay Savov, Ivaylo Ganev, *Bulgaria*

### **Options for power supplying an object by medium or high voltage**

Nikolay Savov, *Bulgaria*

### **Effects of sliding-mode observer parameters and current controllers' setup in a sensorless PMSM drive**

Emil Rachev, Vladislav Petrov, Dimitar Kyuchukov, *Bulgaria*

### **Implementation and study of a PMSM drive with sensorless field-oriented control for a fan application**

Vladislav Petrov, Emil Rachev, Dimitar Kyuchukov, *Bulgaria*

### **Simulation-based acquisition of induction motor characteristics with computed parameters**

Emil Rachev, Vladislav Petrov, *Bulgaria*

### **Elastic Analysis for Homogeneously Graded Rotating Disks with Linearly-Varying Thicknesses**

Biliana Dimova, Boris-Mihail Ivanov, *Bulgaria*

### **Power supply for fast charging stations for electric vehicles positioned on the Trakia motorway in Bulgaria through an off-grid photovoltaic plant with storage system**

Nikolay Savov, Polina Petkova, *Bulgaria*

### **Development trends in hydrogen power engineering**

Mehmed Kadir Hassan, *Bulgaria*

15:00 – 15:30 EEST

Break

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

## Poster Session II

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

### **Complex assessment of the efficiency of the neutral grounding modes in the distribution networks**

Hristo Ilchev, *Bulgaria*

### **Information system for planning the development of electric power distribution networks**

Petya Tsvetkova, Hristo Ilchev, *Bulgaria*

### **Choosing a strategy for short-term planning in the electric distribution networks with consideration of mode constraints**

Petya Tsvetkova, *Bulgaria*

### **Harmonic Analysis of SEPIC DC-DC Converter**

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

**LTSpice Based Stability Analysis of DC-DC Converter for LED Drivers**

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

**Autonomous DC power supply for low-power consumers**

Hristo Antchev, *Bulgaria*

**Renovation of adaptive tunnel lighting with lighting cost optimization**

Angel Pachamanov, Dimitar Pavlov, Borislav Pregyov, Dessislava Pachamanova, *Bulgaria*

19:00 – 22:00 EEST [Sozopol, BG]

**Gala-Dinner**

**Thursday| June 06, 2024**

10:00 – 11:00 EEST [Sozopol, BG]

**Round Table**

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

**Closing Ceremony**

[HTTPS://CONFERENCE.NKO.BG](https://conference.nko.bg)



## PATRONS

## GENERAL



Lighting 2024 is partially funded under an Agreement "241ДН0006-01" as part of the "Days of Science" initiative of the Technical University of Sofia

### 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