



**CALL FOR PAPERS  
SPECIAL SESSION ON**

**Artificial Intelligence-Enhanced Photovoltaic Systems: Advancements and Applications  
for ICCAD'24  
May 15-17, 2024, Paris-France**

**Session Co-Chairs:**

- Abdelhakim DORBANE, Smart Structures Laboratory (SSL), Department of Mechanical Engineering, University of Ain Temouchent, PO BOX 284 46000, Ain Temouchent, Algeria, [abdelhakim.dorbane@univ-temouchent.edu.dz](mailto:abdelhakim.dorbane@univ-temouchent.edu.dz)
- Bourassia BENZAAD, Smart Structures Laboratory (SSL), Department of Mechanical Engineering, University of Ain Temouchent, PO BOX 284 46000, Ain Temouchent, Algeria, [bourassia.bensaad@univ-temouchent.edu.dz](mailto:bourassia.bensaad@univ-temouchent.edu.dz)

**Session description:**

Photovoltaic Systems (PV) are a widely embraced and environmentally friendly source of renewable energy. However, they face challenges like weather variations, shading, and system faults. Artificial Intelligence (AI) and machine learning (ML) have emerged as crucial tools to tackle these issues, enabling optimization of energy production, enhanced maintenance, and seamless integration into smart grids. Key areas of focus include AI-driven energy forecasting, system optimization for maximum efficiency, fault detection, and grid integration. The integration of AI with PV systems brings substantial benefits, such as improved efficiency and sustainability, but it also presents challenges like data quality and implementation complexity. Addressing these challenges while ensuring the interpretability of AI decisions is crucial for unlocking the full potential of this synergy.

The goal of this special session on "Photovoltaic Systems and Artificial Intelligence" at ICCAD'24 is to provide a platform for researchers, engineers, and experts to exchange knowledge and insights at the intersection of photovoltaic systems and AI. The session aims to foster collaboration and discussion on cutting-edge research, advancements, and practical applications in this interdisciplinary field. It seeks to promote innovative solutions for optimizing solar energy generation, improving system performance, and enhancing the sustainability of photovoltaic systems through the use of artificial intelligence and machine learning techniques. Ultimately, the session aims to contribute to the broader goal of accelerating the adoption of renewable energy sources like solar power while addressing the challenges associated with their integration and maintenance.

The topics of interest include, but are not limited to:

- Energy Forecasting and Prediction
- Optimization Techniques
- Fault Detection and Diagnosis
- Grid Integration and Management
- Performance Monitoring and Analytics
- Energy Storage and Management
- Robotic and Drone Applications
- Deep Learning for Solar Data Analysis
- Smart Grid Solutions
- PV systems monitoring

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### **SUBMISSION**

Papers must be submitted electronically for peer review by: **December 15, 2023**

<https://www.iccad-conf.com/submission/>

All papers must be written in English and should describe original work. The length of the paper is limited to a maximum of 6 pages (in the standard IEEE conference double column format).