9TH International Conference on Control, Automation, and Diagnosis

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July 1-3, 2025
Barcelone, Spain

Submission deadline: **January 31, 2025**

CALL FOR PAPERS
SPECIAL SESSION ON

Artificial Intelligence in Photovoltaic Systems: Advancements and Applications in Healthcare and Beyond

for ICCAD 2025
July 1-3, 2025, Barcelona, Spain

Session Co-Chairs:

- Dr. Ali Hmidet, ISTMT Tunis El Manar University, Tunisia, ali.hmidet@istmt.utm.tn
- Prof. Imed Ben Dhaou, Dar Al-Hekma University, Saudi Arabia, ibendhaou@dah.edu.sa

Session description:

This special session deals with the problem of maximizing the efficiency, reliability, and adaptability of photovoltaic (PV) systems using Artificial Intelligence (AI) to meet the growing energy needs in various critical sectors, with a particular focus on healthcare. PV systems must deliver stable and optimized power under diverse and sometimes challenging environmental conditions. Integrating AI offers novel solutions to enhance PV system performance, predict maintenance needs, manage energy storage, and ensure system reliability which particularly essential for applications in healthcare, where continuous and strong power supply is crucial.

The goal is to explore and present innovative AI applications that optimize, control and manage PV systems, focusing on the needs of critical sectors like healthcare and presenting AI-based solutions that ensure reliable, continuous power supply and efficient energy management.

The topics of interest include, but are not limited to:
1. AI-Enhanced PV System Optimization
2. Smart IoT-Enabled PV microgrid
3. AI-Driven Battery Health Monitoring and Optimization for PV Systems
4. AI-Enhanced Cybersecurity and Secure Communication Protocols for IoT-Enabled PV Systems
5. Maximum Power Point Tracking (MPPT) based AI
6. Healthcare Applications of PV Systems with AI
7. AI for Energy Storage and Load Management
8. AI for Sensorless Control Techniques in PV Systems
9. AI based Fault Detection and Security

SUBMISSION

Papers must be submitted electronically for peer review by: **January 31, 2025**
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).