# Smart Embedded Systems for Photovoltaic Applications

**Abstract:**

Smart embedded systems have showed their capability to address various engineering problems, such as electric vehicle, charging stations, health sector, factory robot, medical devices, etc. These kind of embedded systems were developed and designed to carry out specific tasks. Recently few attempts have been carried out in the area of solar energy, particularly photovoltaic applications. Most available works, of embedded systems in this solar energy field, tried to use and integrate recent techniques (e.g. Machine learning, deep learning and Internet of Things) and technologies (e.g. smart sensors, SoC, and reconfigurable devices) to solve certain difficulties such as monitoring, fault diagnosis, optimization and control. The embedded systems plying a mission-critical role in solar energy applications and certainly will contribute to advance this sector. This special session will focus mainly on the application of embedded systems in photovoltaic installations, including stand-alone, grid-connected and hybrid systems. Real time integration of such methods into reconfigurable circuits (e.g. CPLD, FPGA, etc.), Microcontrollers (STM32, Arduino, etc.), Microprocessors (e.g. Raspberry Pi) and Android App are welcome. PhD students and researchers are encouraged to submit good quality papers to the following topics:

**Topics:**

- Artificial intelligence and Internet of Things for photovoltaics
- Android and IOS App for photovoltaics
- Smart monitoring systems
- Fault detection and isolation techniques
- Fault diagnosis methods (areal inspection, electrical, images, etc)
- Smart energy management methods
- Optimization and control methods

**Biography:**

Adel Mellit is Professor of Electronics at the Faculty of Sciences and Technology, Jijel University, Algeria. He received his M.S. Degree and PhD in Electronics from the University of Sciences Technologies (USTHB) Algiers in 2002 and 2006 respectively. Research interests of Dr. Adel Mellit focus on the application of the artificial intelligence techniques in photovoltaic systems and micro-grids. He has authored and co-authored more than 170 papers in international peer reviewed journals (mostly in Elsevier), and papers in conference proceedings (Mostly in IEEE) mainly on photovoltaic systems, six book chapters, one proceedings book and one book. He is the Director of the Renewable Energy Laboratory at the Jijel University (Algeria) and is an Associate Member at the ICTP Trieste (Italy). Subject editor of Energy journal (Elsevier, Ltd), Editor of IEEE journal of Photovoltaic (IEEE) and Editorial board member of the Renewable Energy journal (Elsevier, Ltd).

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