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Call For Papers

SPECIAL SESSION

## O&M AND LONG-TERM PERFORMANCE CONTROL OF PV SYSTEMS

**Organized and chaired by:** Prof. S. Leva and Prof. F. Grimaccia, Dipartimento di Energia – Poltecnico di Milano (Italy)

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**Objective and topics:** Renewable energy sources contribution to power generation almost represents a valid alternative to limit fossil fuel usage and pollution for future decades. In the last two decades European countries have widely invested in alternative energy sources, especially the solar one, to reduce emissions and politically promote the so called *clean energy*. In some countries during this period the PV sector has witnessed a very rapid increase in its production rate with the complicity of low consumer prices and a general market euphoria, also due to generous public policies.

The quality of the installed modules was not always guaranteed especially because produced in a rapid time frame, and often with characteristics below the common standards. The race to install and meet public incentives has left many solar installations across a general lacking in maintenance. After a relative short period, evident modifications in the performance of some modules and plants appeared, and a quite large spectrum of defects started to be observed by O&M operators.

Recently some smart methods aiming at detecting degradation mechanisms and performance control by means of multiple indicators have been proposed. In this context both remote and in-field technologies have been developed for photovoltaics plant monitoring operations. PV systems should be designed and properly controlled to ensure their performance and reliability over the entire lifetime, thus requiring appropriate methods and techniques in this light.

The results of these methods and proposed technologies will be investigated in this Special Session in order to provide a clear idea of potential impact of academic and industrial research in PV O&M sector for future decades.

SS Topics and scopes:

- Real-time monitoring in PV systems
- Diagnosis, prognosis and forecasting methods for lifetime plant control
- Predictive and reactive maintenance in PV power plants
- Remote and in-field diagnostic tools and algorithms
- Degradation models for cells and components
- Fault tolerant control strategies in PV power generation
- PV module aging mechanisms
- Reliability and effectiveness of novel MPPT algorithms
- Automatic inspection and control systems
- Typical defects and failures detection in maintenance activity

All the instructions for paper submission are included in the conference website:

<https://www.eeeic.net/eeeic/>