Special Issue

Advanced Fault Detection and Diagnosis for Photovoltaic Systems

Message from the Guest Editors

The current expansion, growth, and popularity of PV systems is driven not only by the urging need related to clean energy sources transition, but also by the attractive economic aspects of the solar power as prices are continuously decreasing. Thus, it is very important to maintain the optimal operational conditions of the PV systems. Even small faults which are not detected in time can lead to a decrease in power production efficiency and economic losses, respectively. Because of the impact of faults on PV system performance, the development of new techniques for fault detection and diagnosis suitable for specific fault conditions and unknown or new faults are of the utmost importance. Fault detection offers the possibility to significantly reduce operational downtime, a timely diagnosis that is essential for restoring the optimal functionality and energy production of the entire PV system. The potential of ongoing research not only enhances the reliability and efficiency of photovoltaic systems, but also facilitates the development of innovative approaches and technologies that can further optimize energy production and fault detection mechanisms.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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