

Special Issue

Integrating Artificial Intelligence in Renewable Energy Systems

Message from the Guest Editors

Renewable energy has emerged as a key player in the ongoing global energy revolution, while artificial intelligence (AI) applications have become a crucial sector that promises to bring about a brighter future for humanity. These two fields have intersected in recent years, resulting in a rapidly expanding area of study. In particular, AI techniques have enhanced the design of renewable energy systems, leading to more sustainable products. These techniques can be applied to various aspects of renewable energy, including improved system design, fault diagnosis, optimal operational conditions, sensitivity analysis, data analysis, decision making, and resource assessment. Additionally, AI can be used to exploit all forms of renewable energy resources such as solar thermal, solar photovoltaic, wind energy, geothermal, and biomass. The applications of AI and machine learning are not limited to direct power generation but can also be utilized in areas such as air conditioning, building heating and cooling, desalination, and energy storage, making it a powerful tool for any physical, chemical, or biological engineering application.

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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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