Special Issue

Efficient Energy Conversion Systems and Renewable Energy Generating Units: Techno-Economic Empowered Sustainability

Message from the Guest Editor

Energy conversion systems are favored in modern installations by energy industries for their efficiency as energy-saving motors in industrial applications due to their capacity to recover unused or dissipated electrical power and in renewable energy systems for their functionality as generators across a broad spectrum of wind speeds and solar luminosity, in both autonomous and interconnected power systems. Many specialized topics have appeared, such as control techniques, software and hardware, and a wide range of applications with increased technical and economic benefits. The Internet of Things-based control recently created new applications, such as remote monitoring and control in isolated areas and diagnosis and recovery in inaccessible or dangerous environments. Other challenges include nuclear energy, balancing the system's power generation during variabilities of wind or solar energy, and replacing fossil fuels in thermal power generating units, which impacts energy economics, the costs of energy generated, and the reduction of CO2 emissions.

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