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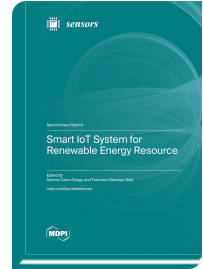
Smart IoT System for Renewable Energy Resource

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Renewable energy resources are used as distributed generation (DG) units and installed near to where the energy is converted and consumed. Further, the integration of renewable energy sources at home is very important. IoT helps smart grids to support various network functions throughout the generation, distribution, and consumption of energy by incorporating IoT devices (such as sensors, actuators, and smart meters), as well as by providing connectivity, automation, and tracking for such devices. For these applications, the use of low-power long-range wireless networks (LPWAN) is fundamental to facilitate all the necessary tasks in the smart grids in City 4.0 and Industry 4.0. The integration of renewable energies (photovoltaic solar, wind energy, biomass energy, hydroelectric energy, and other sources) in smart grids implies the monitoring of households, cities, industries, and electric vehicles at all times. In this sense, the development of monitoring and control applications using mobile devices is a fundamental tool in this type of system, which complements all the possibilities offered by the IoT. Smart energy meters are used to allow for communication between consumers and utility command centers to exchange messages about electrical consumption. Thus, it is essential to have access from any location and instant access to information using mobile devices or computers.



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