



mathematics

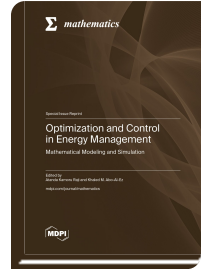


Special Issue Reprint

Optimization and Control in Energy Management: Mathematical Modeling and Simulation

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The present reprint contains 15 articles published in the Special Issue “Optimization and Control in Energy Management: Mathematical Modeling and Simulation” of the journal *Mathematics*, which covers a wide range of topics connected to the energy management systems, i.e., EMS optimization and control techniques for managing the power flow in response to supply, demand, power quality, and storage conditions. These topics include demand side management and demand response, artificial intelligence optimization methods for renewable energy systems and energy management, frequency regulation using virtual power plants, modeling and simulation for energy management, EMS in smart electrical grids, energy-efficient systems, energy conservation techniques, EMS in mini- and microgrids, algorithms, numerical simulations, mathematical modeling, analytical understanding, control theory, load and renewable energy generation prediction techniques, energy management for smart cities and homes, energy management for improving power quality, various optimization techniques and methods in EMS, and various control methods and strategies in EMS. It is hoped that this reprint will be interesting and useful for those working in the area of EMS, power systems’ optimal operation, and renewable energy systems, as well as for those having the proper mathematical background and the willingness to be familiar with the recent advances in the mathematical modeling and simulation of energy systems, which are essential tools for the strategic planning and optimal operation of hybrid energy systems in the form of islanded or grid-connected mini or



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