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Energy Storage and Electric Power Systems: Theory, Methods, and Applications

Guest Editors:

Dr. George Caralis
School of Mechanical Engineering, Fluids Section, National Technical University of Athens (NTUA), Zografou, 15771 Athens, Greece

Dr. Konstantinos Braimakis
School of Mechanical Engineering, Fluids Section, National Technical University of Athens (NTUA), Zografou, 15771 Athens, Greece

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Message from the Guest Editors

The fast growth of renewables brings new design and operational challenges to the energy transition working towards a 100% renewable energy goal, and Europe has an ambitious target to decarbonize. Therefore, the role of electricity storage systems in the rapid rise of renewable energy resources and the steady fall of fossil fuels in power systems with large-scale wind and PV integration is investigated in this Special Issue.

Different energy storage technologies such as compressed air energy storage, hydro-pumped storage, sodium–sulfur batteries, electrical cars or ships, hydrogen, fuel cells, and desalination are some of the storage cases that could be included in this Special Issue. This Special Issue focuses on the theory, methods, and applications of storage systems combined with renewable energy sources. Integration and economic issues could be also addressed. Specific case studies, best practices, technical solutions and techno-economic assessments could be analyzed or presented.

Keywords:

- electrical storage
- large scale wind and PV integration
- hydrogen
- electrical cars
- fuel cells
- hydro pumped storage
- integration issues

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Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo
Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32, 20133 Milano, Italy

Message from the Editor-in-Chief

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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Applied Sciences Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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