



## Applications, Integration and Trends of Renewable Energy Technologies

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### **Message from the Guest Editor**

In many cases, the output of renewable energy technologies is intermittent and non-dispatchable. Remarkable renewable applications also include systems that are not widely used today, such as renewable hydrogen production and desalination. The significant penetration of non-dispatchable renewable technologies makes their integration to the power grid a very challenging task in terms of planning, operation, and control, as they have to be combined with conventional power generation, battery storage, and demand response in isolated and/or interconnected systems. Renewable technologies also hold a key role in the evolving concepts of smart grid and electric vehicle integration.

A holistic approach to the renewable technologies should also consider the impact during their whole lifetime, in the context of life cycle assessment, from the production stage until the recycling/disposal. It should also account for the new trends in materials science, as they can lead to significant steps forward in terms of cost reduction and performance improvement. This Special Issue aims to present the state-of-the-art of renewable energy applications, grid integration issues, and future trends.





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