Special Issue

Hydrogen Production via Ion Exchange Membrane Water Electrolysis: Progress and Challenges

Message from the Guest Editor

Ion exchange membrane water electrolysis proposes many advantages, including compact size, high H2 production rate, and flexibility to the alternating electrical inputs, thus making it a very suitable H2 production technology for renewable energy sources.

Types of ion exchange membrane water electrolysis are proton exchange membrane (PEM) electrolysis and anion exchange membrane (AEM) electrolysis. PEM water electrolysis works in acidic environments and is a relatively mature technology. However, the cost of PEM electrolysis is still very high due to the use of expensive and rare materials. AEM water electrolysis works in alkaline environments, making it accessible for use with inexpensive materials. However, AEM electrolysis technology has not been fully developed yet for practical applications.

This Special Issue is intended to cover both PEM and AEM water electrolysis technologies in order to help grasp the progress and challenges of both technologies and eventually contribute to the advancement of ion exchange membrane water electrolysis technologies.

Keywords AEM water electrolysis; PEM water electrolysis; electrolysis system; membrane; ionomer; catalysts

Guest Editor

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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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