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# Advanced Membrane Technologies for Hydrogen Production and Recovery

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Deadline for manuscript submissions: **31 May 2024** 

#### Message from the Guest Editor

Dear Colleagues,

The current energy system is mainly based on fossil fuels, which implies a constant contribution of CO<sub>2</sub> emissions and other pollutants to the atmosphere, deepening the already worrying global warming scenario. From this perspective, it is necessary to look for alternative ways to produce energy by introducing an energy carrier that could be obtained from renewable sources to reduce the environmental impact and global warming. Hydrogen is positioned as a relevant alternative in global industrial decarbonization if it is produced from clean processes. However, for the hydrogen economy to realize its potential, it must overcome the technological challenges in hydrogen production, utilization, storage and transportation. In this context, membrane technologies have received growing attention as an efficient alternative for high-purity hydrogen production on membrane reactors or hydrogen separation from several streams. Different membranes have been applied for hydrogen purification and/or recovery depending on hydrogen purity requirements and operation conditions.



mdpi.com/si/192681







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#### Message from the Editor-in-Chief

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