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## Proton Exchange Membrane Water Electrolysis

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### Message from the Guest Editors

Dear Colleagues,

The greenhouse effect of this century is increasing, and hence, a reduction of carbon dioxide emissions through various methods is the global consensus. Developing green and renewable energy has been the main target until now. However, the major issue of renewable energy is the unstable output of power that is affected by seasonal and environmental factors, which results in electric grid management difficulties. The advantages of proton exchange membrane water electrolysis (PEMWE) for energy storage during off-peak periods are its high current density, high purity gas production ( $H_2$  and  $O_2$ ), and compact system. The supply of stored hydrogen and oxygen gas for the fuel cell is used to generate power during the peak-hour period. Additionally, accompanied with a higher operating voltage and proper anode materials, ozone ( $O_3$ ) gas will be generated in addition to oxygen. Ozone is a natural and effective disinfection gas. The PEMWE technique, which produces three kinds of gases ( $H_2$ ,  $O_2$ , and  $O_3$ ), will expand the application area from green energy to green technology.





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## Message from the Editor-in-Chief

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