

## **Recent Advances in Hydrogen Generation Using PEM Water Electrolysis**

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The electrolysis of water using electrochemical cells based on proton exchange membranes (PEMs) has long been shown to be a viable method to produce high purity oxygen for military and aerospace applications. Today, PEM water electrolysis for hydrogen production is commercially established and has applications in industrial gas markets. There are also a number of near-term potential uses for this technology that will facilitate the hydrogen economy. Because water electrolyzers can operate using any suitable source of electricity, they are also ideally suited for systems that utilize renewable energy sources such as wind, solar, and hydro.

Recent advances at Proton Energy Systems in the commercial application of hydrogen generators will be discussed including technical advances in the generation of hydrogen at high current densities and elevated pressures. These advances will be presented in the context of the market applications that Proton is pursuing with this technology.