

## Hydrogen production in photoelectrochemical cell using modified seawater electrolytes by membrane process

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In the near future, potential water shortages are expected to occur all over the world and this problem will have a significant influence on the availability of water for water-splitting processes as well as for drinking water. Seawater contains a large amount of dissolved ion components, thus allowing it to be used as an electrolyte in photoelectrochemical (PEC) systems for producing hydrogen. In this study, we investigated the hydrogen evolution rate in PEC system, including the preparation and characterization of an anodized tubular TiO<sub>2</sub> electrode (ATTE) as electrodes with the assistance of an external bias (solar cell), and the use of various qualities of seawater produced by membrane processes as the electrolyte.