



Preparation of TiO₂ Nanotube Arrays Electrode for Photoelectrochemical Water Splitting: Effect of Anodization Potential on Morphology and Photocurrent Response

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Abstract : In this work, highly ordered TiO₂ nanotubes arrays electrode were prepared by anodic oxidation of titanium foil under different anodization potentials in ethylene glycol electrolytes containing NH₄F and water. The morphology and photocurrent response of TiO₂ nanotubes arrays (TNTAs) were characterized by FESEM and electrochemical working station. The result indicated that anodization voltage significantly affects morphology structures and photoelectrochemical properties of TNTAs. The pore diameter, photocurrent response and water splitting photoconversion efficiency of TNTAs increased with anodization voltage.

Keywords: Anodization, Photocurrent, Photoelectrochemical, TiO₂ Nanotubes.

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