

Photoelectrochemical properties of sol-gel processed p-type LaFeO₃ photocathodes for the efficient water splitting

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Photoelectrochemical water splitting has received significant attention as a rising method for producing eco-friendly and sustainable hydrogen. In this system, p-type semiconductors have been widely used to perform photocathodes for generating hydrogen. Lanthanum iron oxide (LaFeO₃) is one of the promising photocathode materials because of its visible light responsive band gap, favorable energy band position for PEC water splitting. Moreover, it is stable in the aqueous solution in contrast with the other photocathode materials, such as CuO and Cu₂O, hence it is profitable for the sustainable hydrogen production.

In this work, the LaFeO₃ photocathode is fabricated by simple solution based process, and its characterization and optimization are investigated.