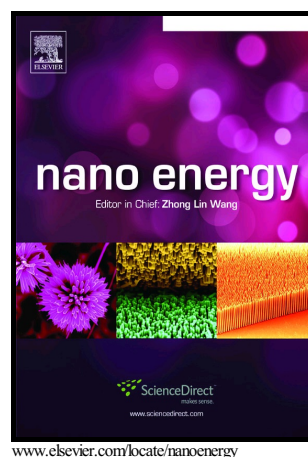


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Drastic enhancement of photoelectrochemical water splitting performance over plasmonic Al@TiO₂ heterostructured nanocavity arrays

Zhao Li^{a1}, Li Shi^{b1}, Daniel Franklin^b, Supriya Koul^a, Akihiro Kushima^a, Yang Yang^{a,b*}

^aDepartment of Materials Science and Engineering, University of Central Florida, Orlando, FL 32826, United States

^bNanoScience Technology Center, University of Central Florida, Orlando, FL 32826, United States

*Corresponding author. Yang.Yang@ucf.edu

ABSTRACT

Herein, we presented nonprecious plasmonic Al@TiO₂ heterostructures for efficient photoelectrochemical (PEC) water splitting by controllably isolating Aluminum (Al) nanoparticles (NPs) individually into TiO₂ nanocavity arrays (NCAs). Compared with bare TiO₂, the Al@TiO₂ shows the most prominently enhanced PEC performance under solar light illumination. The significantly enhanced PEC activity of Al@TiO₂ photoanode is attributed to the localized surface plasmonic resonance (LSPR) induced electromagnetic field enhancement in

¹ These authors contributed equally to this work.

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