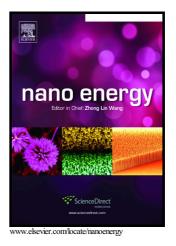
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Facile Synthesis of Bimodal Porous Graphitic Carbon Nitride Nanosheets as Efficient Photocatalysts for Hydrogen Evolution

Pei Hu^{a, b}, Chaoji Chen^{a, *}, Rui Zeng^a, Jingwei Xiang^a, Ying Huang^a, Dongfang Hou^c, Qing Li,^{a,*}, Yunhui Huang^{a*}

^aState Key Laboratory of Materials Processing and Die & Mould Technology, School of Materials Science and Engineering, Huazhong University of Science and Technology, Wuhan 430074, P. R. China

^bSchool of Materials Science and Engineering, Tongji University, Shanghai 201804, China ^cCollege of Materials and Chemical Engineering, China Three Gorges University,

manus

Yichang 443002, China

chenchaojili@gmail.com (C. Chen)

qing_li@hust.edu.cn (Q. Li)

huangyh@mail.hust.edu.cn (Y. Huang)

*Correspondence to.

Abstract

A novel, facile, and cost-effective approach has been developed for the preparation of hierarchically bimodal porous graphitic carbon nitride nanosheets (BP-g-C₃N₄) by KOH activation and thermal oxidation simultaneously. The BP-g-C₃N₄ demonstrates a high surface area of 219 m² g⁻¹, high porosity and hierarchically bimodal porous structure, which enhances the electron transport ability and photoreaction activity, enlarges the band gap, and prolongs the lifetime of the photoexcited charge carriers. Consequently, the BP-g-C₃N₄ exhibits a highly improved photocatalytic activity of 1900 μ mol h⁻¹ g⁻¹ (8.6 times higher than that of bulk g-C₃N₄) towards hydrogen evolution and excellent cycling stability.

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