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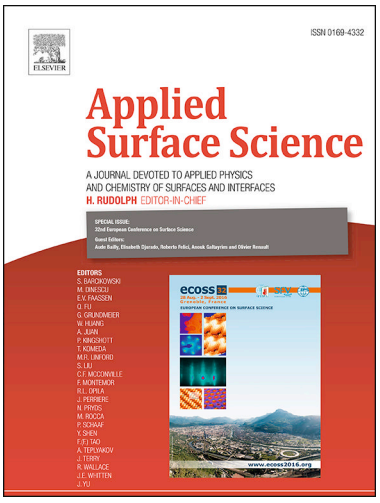

Full Length Article

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Enhanced photocatalytic hydrogen production over Au/SiC for water reduction by localized surface plasmon resonance effect

Da Wang[a,b], Lin Huang[a], Zhongnan Guo[a], Xue Han[a], Chunjun Liu[c], Wenjun Wang[b]*, Wenxia Yuan[a]*

[a] *Department of Chemistry, School of Chemistry and Biological Engineering, University of Science and Technology Beijing, Beijing, 100083, China.*

[b] *Research & Development Center for Functional Crystals, Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, China*

[c] *TankeBlue CO., LTD., Shinong Building, No.9 Tianrong Street, Daxing District, Beijing 102600, China*

Abstract

High separation of photo-excited electrons and holes, leading to fast reaction rate on semiconductor surface, are determined for the hydrogen evolution by water reduction. We here provide the efficient photocatalyst of Au/SiC composite for hydrogen production, where the effect of localized surface plasmon resonance effect (LSPR) is firstly induced in the SiC-based materials for water splitting. The hydrogen production for Au/SiC is robustly increased by 30 times compared to that of pristine SiC. This high performance is attributed to the LSPR by Au nanoparticles,