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

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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,

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