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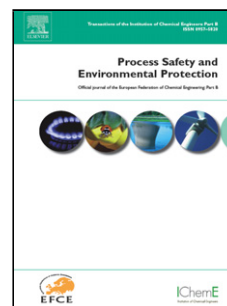
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Mechanochemical synthesis of Ag/TiO₂ for photocatalytic Methyl Orange degradation and hydrogen production

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Highlights:

- Synthesis of a highly activity Ag/TiO₂ photocatalyst through a two-step method
- Synergy between silver and titania enhanced the photophysical properties
- Ag/TiO₂ exhibited excellent stability over 3 cycles for photocatalytic degradation of Methyl orange

Abstract

Photocatalysis offers a promising route to address the challenges of future energy production and anthropogenic environmental pollution. Here we demonstrated the synthesis of a high activity Ag/TiO₂ photocatalyst through a two-step, sol-gel and mechanochemical decomposition method employing a silver acetate precursor. Bulk and surface characterization revealed the formation of dispersed metallic silver nanoparticles (~9 nm diameter) decorating anatase crystallites (~14 nm) which stabilized a significant

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