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Characterization and catalytic properties of nano-sized Ag metal catalyst on TiO₂–SiO₂ synthesized by photo-assisted deposition and impregnation methods

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ABSTRACT

The photo-assisted deposition (PAD) and impregnation (img) synthesis of nano-sized Ag metal on TiO₂–SiO₂ are reported. The prepared catalysts were characterized by different techniques such as XRD, XAFS, TEM and nitrogen adsorption analysis. Photocatalytic reactivity using Ag–TiO₂–SiO₂ catalysts under visible-light condition on the oxidation of EDTA with O₂ reaction was evaluated. The results have shown notable photocatalytic activity of PAD-Ag–TiO₂–SiO₂ which was 2 and 5 times higher than that of imp-Ag–TiO₂–SiO₂ and TiO₂–SiO₂, respectively.

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