

عنوان مقاله:

Greenhouse Gases Degradation by Dye Sensitized Nano ZnO under Visible Light irradiation

محل انتشار:

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خلاصه مقاله:

In this study, dye sensitized commercial and prepared nano ZnO were used in photocatalytic degradation of two main greenhouse gases, methane and carbon dioxide in a batch reactor under visible light. ZnO nanoparticles were produced by sonochemical method in high frequency. In order to activate nanoparticles in visible region, copper phthalocyanine was used. Calcinated commercial and prepared nano ZnO, after immobilizing the dye were analyzed by FTIR, SEM and UV-vis. SEM images showed that the dye sensitized nanoparticles were more smooth and uniform than the dye sensitized commercial ZnO particles. UV-vis spectra indicated the expansion of absorption band of photocatalysts to visible area after sensitization by CuPc. Conversions of CO₂ and CH₄, using dye sensitized nano ZnO, were 11.3 and 12.2%. These percentages in comparison with dye sensitized commercial ZnO were more about .double

کلمات کلیدی:

Photocatalyst, Nano ZnO, Dye, Greenhouse gases, Visible light

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