

Photocatalytic Removal of Methylene Blue Dye: Fabrication and Optimization of Adsorbant Material and a Photocatalyst in Unilayer and Bilayer System

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Abstract : A reusable immobilized unilayer thin coating of adsorbent material bentonite and photocatalyst (TiO_2) was fabricated on the glass beaker to remove aqueous methylene blue solution. The dye removal efficiency of photocatalyst was much lower with pure titanium dioxide. In the preliminary experiments, different compositions of TiO_2 - bentonite were tested on unilayer and bilayer system, and it was observed that 0.50:0.50 ratios are best for maximum photocatalytic degradation of methylene blue in aqueous medium when applied on unilayer coating system.

Keywords : adsorption, photocatalyst, bentonite, TiO_2

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