

**PHOTOCATALYTIC OXIDATION OF METHYLENE BLUE BY TITANIUM
DIOXIDE IN A PHOTOREACTOR**

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ABSTRACT

Photocatalytic oxidation of methylene blue (MB) took place in an annular flow-through photoreactor whereas the titanium dioxide (TiO₂) particles used as catalysts were suspended in the solute. It has been found that the dark adsorption of MB on surface of TiO₂ can be explained by the Langmuir adsorption isotherm. In addition, the Langmuir-Hinshelwood (L-H) kinetic model can express the degradation rate of MB in illuminated cases. At low MB concentration, the apparent degradation rate can be expressed as a pseudo first order reaction.