

## Synthesis, Characterization, and Activity of The Photocatalyst Polyaniline (PANI)/TiO<sub>2</sub> in Degrading Rhodamine B Dye

<b>Title</b>	Synthesis, Characterization, and Activity of The Photocatalyst Polyaniline (PANI)/TiO <sub>2</sub> in Degrading Rhodamine B Dye
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<b>Abstract</b>	The photocatalysts of Polyaniline (PANI) and composite Polyaniline /TiO <sub>2</sub> were syntheses by the interfacial polymerization (twophase organic/water) method. The characteristics of the photocatalyst were identified by FTIR (Fourier Transform Infra-Red), SEM (Scanning Electron Microscopy), and EDX (Energy Dispersive X-ray Spectroscopy). The characteristic FT-IR peaks of Polyaniline and composite Polyaniline/TiO <sub>2</sub> are formed due to the formation H-Bonding. The XRD pattern shows that Polyaniline has a typical peak starting from 25.080 (2????) planes (110) and amorphous polymer. The addition of TiO <sub>2</sub> (1%, 5% and 10% (w/w)) were found increased the activities. Photocatalyst Polyaniline/TiO <sub>2</sub> 1% was proven to provide the highest reduction in Rhodamine B degradation, 53%.Rhodamine B degradation increased by 80% at pH 9 with an optimum time of 300 minutes under visible light from a tungsten lamp. The rate of kinetics was obtained following first order with a constant rate of photodegradation of 0.005445 minutes <sup>-1</sup> .
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