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(57) Abstract :

The interface between the photocatalyst and dissolved pollutants is substantially improved in suspended catalyst photocatalytic reactors as compared to those using immobilized catalyst. The current study's objectives were to design and examine the new reactor. The effectiveness of photocatalyst in removing dye degradation from water. The degradation of Methylene Blue of different pH over time was used as a foundation for evaluating the reactor's performance. The performance of the reactor was investigated by the degradation of Methylene Blue dye at a concentration of 10-5 Molar by the photocatalyst BiFeO<sub>3</sub> nanoparticles. It was found that the degradation of Methylene Blue dye was improved to 94% to 98% by the recommended photocatalyst BiFeO<sub>3</sub> nanoparticles in one to two hours in the fabricated photoreactor a visible light led bulb based photoreactor.

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