



Photocatalytic Degradation of Ciprofloxacin Hydrochloride using Carbon-doped Titanium dioxide

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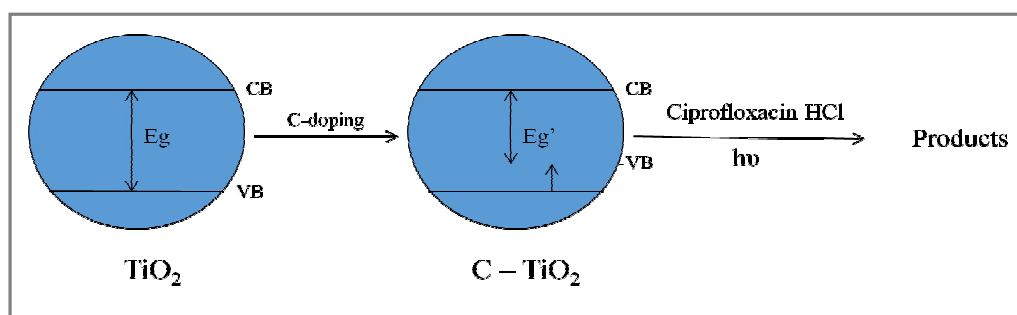
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ABSTRACT

Ciprofloxacin hydrochloride was degraded photocatalytically by using carbon doped titanium dioxide in the presence of light. Doping of titanium dioxide with carbon was done using glucose as a dopant. Photocatalytic activity of this catalyst was evaluated by degradation of Ciprofloxacin hydrochloride. A 200W tungsten lamp was used for irradiation. Progress of the reaction was followed spectrophotometrically by measuring the absorbance of the reaction mixture at regular time intervals. The effect of variations of different parameters like pH, drug concentration, amount of semiconductor and effect of light intensity on the rate of degradation was also observed to achieve the optimum rate of photodegradation. These are: pH = 3.4; [Ciprofloxacin hydrochloride] = 2.00×10^{-5} M; C-TiO₂ = 0.12 g and light intensity = 60.0 mW cm⁻².

Graphical Abstract



Keywords: Ciprofloxacin HCl, Titanium dioxide, Semiconductor, Photocatalytic degradation.