Dye degradation of commercial dye with titanium dioxide doped iron through Photo-catalysts

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Abstract - The widespread use of synthesis dyes and their discharge into water bodies. Every year, over 700,000 tons of dyes are produced worldwide. Large amount of these dyes is end up in rivers through textile industries. These dyes do not break down easily, which cause water pollution and gives harmful effect in environment. The growing environmental concerns and increasing awareness about water pollution have in deeded the urgent need for effective and cost-efficient technologies to remove dyes from both local and industries waste water. This study aims on Titanium dioxide doped iron and using commercial dye. Titanium dioxide is widely recognized for its photocatalytic properties.

Incorporating iron into Tio_2 to form Tio_2 composites can enhance photocatalytic performance by promoting charge separation and extending hight absorption into visible region. The study shows that adding iron to titanium dioxide makes it better at breaking down commercial dye in waste water. The study confirms that Tio_2/Fe composite are highly efficient and ecofriendly solution for degrading. Future work should focus on long term stability.

Keywords: Commercial dye, Photodegradation, TiO_2 Fe

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