

**Mini Review**

An Overview on the Photocatalytic Degradation of Organic Pollutants using TiO₂ and Metal doped TiO₂ from Industrial Wastewater

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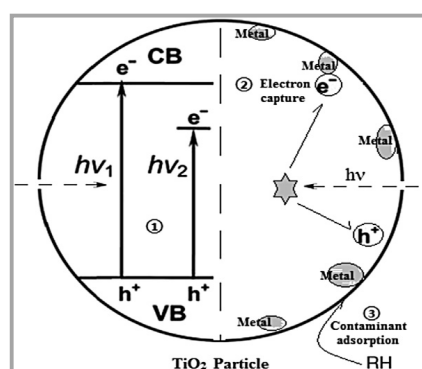
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ABSTRACT

Organic compounds, which are produced by various industries, result in a variety of contaminant problems. TiO₂ based photocatalysts can be used to improve the quality and quantity of organic molecules in wastewater. TiO₂ is better because of its nontoxicity, strong degradation ability, and great thermal and chemical stability. The annihilation or transformation of dangerous chemical wastes to harmless end-products, such as CO₂ and H₂O, is the purpose of titanium dioxide nanoparticles, which are meant to be both supplemental and complimentary to current water-treatment technologies. The use of doped TiO₂ nanoparticles in photocatalytic waste water degradation has shown enormous potential in eliminating these complex organic pollutants. Visible light and solar light may now be used effectively as a light source because to advancements in the properties of doped TiO₂ nanoparticles. Doped TiO₂ nanoparticles have a lot of potential in terms of water and energy issues because they have two main characteristics: they are effective at eliminating pollutants that are persistent in nature and they use energy efficiently. The relevance of doped TiO₂ nanoparticles in the water-energy nexus is briefly discussed in this context. As a result, this paper examines and summarises recent efforts in the field of titania nanoparticle synthesis, modifications, and water treatment applications.



Mechanisms of metal-doped TiO₂ photocatalysis.

Keywords: TiO₂ photocatalyst, Metal doped TiO₂, Photocatalytic degradation, Organic pollutants, Wastewater.