

Synthesis of TiO₂/WO₃/functional graphen oxide nanophotocatalysts and photodegradation of air pollutants

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It is well-known that the poor air quality of indoor environments, such as buildings, houses, cars, and aircraft cabins, can promote transmissible respiratory illnesses, allergies and sick building syndrome. Indoor air pollution is a serious problem especially in urban cities. Pollutants such as NO_x, SO₂ and CO cause adverse health impacts on occupants. Advanced oxidation process (AOP) such as photocatalysis is a promising technology for air purification. Photodegradation occurs at room temperature and pressure and actually oxidizes pollutants to H₂O and CO₂ [1-3].

The synthesis of inorganic materials in Room temperature ionic liquids (RTILs), is a rather new development and has attracted increasing interest in recent years. In this work, we present the control synthesis of TiO₂/WO₃ architectures in the presence of the imidazolium based ionic liquid, and used for the photocatalytic degradation of NO_x,SO₂ and CO. The prepared photocatalysts were systematically characterized by X-ray diffraction (XRD), Scanning Electron Microscopy (SEM) Photoluminescence spectroscopy (PL) and X-ray photoelectron spectroscopy (XPS).

References:

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