

## Clean and Facile Synthesis of Reduced Graphene Oxide-SnO<sub>2</sub> Nanocomposites and Its Enhanced Photocatalytic Activities

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A facile way has been developed for synthesis reduced graphene oxide-SnO<sub>2</sub> nanocomposites in ionic liquid with the assistance of microwave irradiation without any additional reducing agent. The formation of SnO<sub>2</sub> nanoparticles with tetragonal structure has been proved by X-ray diffraction patterns. From field emission scanning electron microscope and transmission electron microscopy results, graphene sheets were uniformly decorated with SnO<sub>2</sub> nanoparticles with an average size of around 4-5 nm in diameter. The photocatalytic activities of as-prepared nanocomposites for degradation of methylene blue under UV irradiation have been investigated. As a result, reduced graphene oxide-SnO<sub>2</sub> nanocomposites tend to have much higher photocatalytic activity than pure SnO<sub>2</sub> nanoparticles.

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