

Synthesis and Characterization of Graphene-ZrO₂ Composites in Ionic Liquid

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This work reports a novel and facile way to synthesize graphene-ZrO₂ composites in ionic liquid under microwave irradiation. Graphene oxide could be easily reduced under microwave irradiation without any additional reducing reagent. Zirconium (IV) isopropoxide was used as starting materials for the growth of ZrO₂ nanoparticles on the graphene sheets with accompanying the reduction of graphene oxide. The as-prepared composites were characterized by Fourier-transformed infrared spectroscopy, X-ray diffraction, scanning electron microscope and thermo gravimetric analysis. It's proved that ZrO₂ are well dispersed on the surface of graphene. Different microwave irradiation time leads to different morphology of the composites.

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