

Synthesis of polypyrrole@ZrO₂/Ag nanocomposite and its photocatalytic activity in environmental remediation

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ZrO₂/Ag modified by polypyrrole was synthesized by chemical oxidative polymerization method. ZrO₂ was prepared by hydrolysis of zirconyl chloride by maintaining pH 10. ZrO₂/Ag was prepared by impregnation method. The sample were confirmed using various characterization techniques such as X-ray diffraction analysis (XRD), Fourier transform infrared spectroscopy (FT-IR), Diffuse Reflectance Ultraviolet-Visible Spectroscopy (DRS-UV-Vis), HR-SEM and UV-Visible spectroscopy. It is found that composite shows enhanced photocatalytic activity towards photodegradation of methylene blue (MB) dye under visible light.

Keywords: Photocatalyst, polypyrrole, zirconia, silver, nanocomposite.