

Detection of Hg ions in contaminated water by optical sensor based on polymeric nanocomposite

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A novel colorimetric sensor based on TiO₂/poly(acrylamide-co-methylene bis acrylamide-co-dithizone) (TiO₂/poly (Am-co-MBA-co-DTz)) nanocomposite was synthesized by surface modification of a synthesized TiO₂ NPs using vinylic linker, which created a reactive vinyl groups for the polymerization of the Am, MBA and modified dithizone on the surface of modified TiO₂ NPs. The prepared polymeric nanocomposites were characterized by Fourier transform infrared spectroscopy (FT-IR), scanning electron microscopy (SEM), thermal gravimetric analysis (TGA) and X-ray powder diffraction (XRD). A fast, selective and inexpensive screening-test for recognizing Hg ions contamination in aqueous solution is described to avoid time-consuming and costly determination using atomic absorption spectrometry. This nanostructured composite

with polymeric shell contains dithizone was developed as a sensitive and selective sensor for adsorption and detection of mercury ions from aqueous solution at optimized condition.

Biography

Pourya Zarshenas has completed his BSc and MSc at Shahid Beheshti University. He wants to continue his academic education in Inorganic Chemistry, Crystal Engineering & Polymer Chemistry. He is a Young Chemist with more than five years of experience in the laboratory and a strong working knowledge of the research. His research interests include Polymer Chemistry, Inorganic Chemistry and Nano composite.

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