Using Nano Technology to Purify Polluted Water in a Local Lake

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This study investigates the combined effects of cobalt ferrite ($CoFe_2O_4$) and silver orthophosphate (Ag_3PO_4) as potential materials for water purification. Innovative magnetically seperable Ag_3PO_4/ $CoFe_2O_4$ composite was prepared using co precipitation method. Cobalt ferrite, a magnetic nanomaterial, offers high stability and reusability, while silver orthophosphate is known for its strong photocatalytic properties. The research focuses on their synergistic performance in degrading pollutants under visible light irradiation. Experimental results are expected to indicate that the $CoFe_2O_4/Ag_3PO_4$ composite exhibits enhanced photocatalytic efficiency, with improved pollutant degradation rates compared to individual components. Additionally, the magnetic nature of cobalt ferrite facilitates easy recovery and reuse of the composite, making it a promising candidate for sustainable water treatment applications. This study provides valuable insights into the design of multifunctional nanomaterials for environmental remediation.

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