

Title (18)	:	Excellent performance of superbead photocatalyst technology for wastewater treatment
Journal	:	AIP Conference Proceedings
Document Type	:	Conference Paper
Publisher	:	AIP Publishing
UniKL Author	:	Norzahir Sapawe
Link to Full Text	:	https://pubs.aip.org/aip/acp/article-abstract/2923/1/040026/3279799/Excellent-performance-of-superbead-photocatalyst?redirectedFrom=fulltext
Link to Scopus Preview	:	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85190690437&doi=10.1063%2f5.0195475&partnerID=40&md5=99ba9d4fc63bcb8fe6d66872240829d6
Abstract	:	A novel and excellent superbeads photocatalyst were synthesized and applied to wastewater treatment. Photocatalytic technology has the characteristics of high efficiency, simple process, good reproducibility and easy treatment thus, been chosen to treat the pollutant in wastewater. The synthesized of superbeads photocatalyst of Co₃O₄ beads, Fe₃O₄ beads, and TiO₂ beads undergo characterization by Fourier Transform Infrared (FTIR) and their performance study by the influence of important parameters such as pH, dosage, and initial concentration were carried out. The highest photodegradation of 88.84% and 87.2% were attained by Co₃O₄ beads and Fe₃O₄ beads in the pH 5 with photocatalyst dosage 4.0 g in 2,4,6-trichlorophenol (TCP). Meanwhile, 85.65% of degradation of methylene blue dye was achieved by TiO₂ beads at pH 11. These results indicate that these superbeads photocatalysts may provide new tools for solving wastewater treatment challenges with excellent performance. The transformation of these beads photocatalyst enormously improves their permeability, durability, chemical resistance, hydrophilicity, and biological suitability.