

# Catalytic Ability of Ag-coated Ferromagnetic Microspheres Functionalized by TiO<sub>2</sub>

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## *Abstract*

TiO<sub>2</sub> has been used to clean wastewater as a photocatalyst that catalyzes the decomposition of organic pollutants through the production of reactive oxygen species. TiO<sub>2</sub> has previously been functionalized on Fe<sub>3</sub>O<sub>4</sub> for improved recyclability of the nanoparticles, and Ag-coating is applied to enhance nanoparticle's catalytic ability by reducing the bandgap of the catalyst in other researches. In my research, I performed an experiment and will present a way of synthesizing Fe<sub>3</sub>O<sub>4</sub>@AgNPs@TiO<sub>2</sub> microspheres by functionalizing the ferromagnetic microspheres with silver nanoparticles before TiO<sub>2</sub>. A photocatalytic test on the decomposition of methyl blue will also be performed to determine the catalytic ability of the obtained microspheres.