

Photocatalytic degradation of Rhodamine B dye using MMCT catalyst for water purification

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The dyes are extensively used in the textile and chemical industries. It is necessary to degrade the organic dyes dissolved in water. The conventional biological treatment methods are ineffective for discoloration and degradation of dye due to the large degree of aromatics present in the dye molecule and the stability of modern dyes. Rhodamine B dye is one of the extensively used dye in textiles. Developing charge transfer units that absorb visible-light and promote multielectron transfer reactions, such as water oxidation, hydrogen evolution, dye degradation and carbon dioxide reduction, is necessary for constructing efficient solar-to-chemical energy conversion systems. In the present study, we successfully synthesized the oxo-bridged (heterobimetallic) MMCT unit. And the catalyst was further characterized by FT-IR spectra and FT-Raman spectra to confirm oxo bridging.