

Dyes degradation by using M⁰ nano particles incorporated in SiO₂ matrix

Liraz Kutashi and Yael Albo
Ariel University, Israel

In recent years, with the growth of population and the development of social economy, the discharged amounts of various pollutants are also growing rapidly. Especially, the pollutants caused by textile dyes and other industrial dyestuffs on water pollution have severe implications on aquatic environment and human health. Therefore, it has begun to pay more attention to the problem of water pollution, and prevention of water deterioration and the protection of water resources have become a common human goal. In this work, the sol gel synthesis route has been utilized for the preparation of SiO₂ matrices embedded with Ag⁰ and Au⁰ nanoparticles for their application as heterogeneous catalysts in the reduction of Methyl Orange (MO) as a model pollutant compound. The M⁰-NPs were prepared by reduction of silver nitrate

or gold (III) chloride trihydrate with NaBH₄ during the sol-gel process. Different preparation procedures were examined in order to determine the preferred method for obtaining a suitable matrix for the catalysis. Our purposely synthesized supported noble metal nanoparticles degrade methyl orange by sodium borohydride satisfactorily and the efficiency of our catalysts is not differed through first to fifth use.

Biography

Liraz Kutzashi completed her BSc in Chemical Engineering department at Ariel University (2015). Her research is focused on nanoparticles and development of new processes for wastewater treatment.

lirazkuz@gmail.com

 Notes: