

Abstract

The bimetallic Ag/La doped ZnO nanoparticles were synthesized through a simple and economical co-precipitation method. The average particle size of nanomaterial was 58.53nm determined by particle analyzer (PA-BT-90). The activity of synthesized material was determined by the degradation of Congo red (GR), Methyl green (M.G), 2-nitrophenol (2-NP) and Methylene blue (MB) dyes. The photocatalytic degradation of all dyes was performed using Ag/La doped ZnO photocatalyst in aqueous media under the UV- light. The photocatalytic degradation of organic dyes under UV-light recorded with different time intervals at ordinary pH. The UV-spectra revealed that the catalyst was more efficient for the methylene blue dye. The maximum degradation rate of catalyst for the methylene blue was 88% in 90 min. The catalytic efficiency for the rest of dyes Congo red (CR), 2-nitrophenol (2-NP) and methyl green was 78%, 73% and 30% respectively.

Keywords: photocatalyst, Bimetallic doped ZnO (Ag,La), photo degradation, co-precipitation