

Abstract

Nanostructures of Copper (Cu)-doped into Carbon nitride (C_3N_4)-doped magnesium oxide (MgO) has been synthesized via chemical precipitation route where various concentrations of Cu (2.5, 5, 7.5 and 10%) were incorporated into fixed amount of C_3N_4 /MgO nanomaterials. Phase constitution, functional groups identification, optical features and morphological properties of Cu- C_3N_4 /MgO were investigated through X-ray diffractometer (XRD), Fourier transform infrared spectroscopy (FTIR), UV-Vis spectrophotometer, Photoluminescence (PL) spectroscopy and High-resolution transmission electron microscope (HR-TEM), respectively. Samples have been evaluated for photodegradation of methylene blue ciprofloxacin (MB-CF) dye to treat polluted water. Moreover, anti-bacterial activity has been evaluated against various gram positive and gram negative bacteria.