

# Abstract

In the present study nickel nanoparticles were synthesized. Doxycycline was used as a reducing agent which is a well known antibiotic. As a precursor nickel chloride salt was used. The color of the solution obtained was yellowish green then further characterization was performed by using UV, particle size analysis, CHNS, FTIR, XRD and SEM. The results represented the UV at 387nm, particle size below 50nm. CHNS showed clear differences in the percentages of doxycycline only and our prepared sample. The composition of nanoparticles confirmed by FTIR spectra. SEM represented the size was almost 24 nm. XRD confirmed the particles of nickel by showing peaks at the standard values. Dye degradation application was adopted for the purpose of environmental applications. Methylene blue and methyl orange were used and it was observed that nanoparticles showed good deterioration of the dyes in almost 45 minutes.