ABSTRACT

$Zn_{1-x}Cr_xS$(x=0.00, 0.01, 0.03. 0.05, 0.07) quantum dots were fabricated in the presence of capping agent (monothioethylene glycol) using chemical precipitation technique. Powder X-Ray diffraction revealed cubic phase with average crystallite size 3-9 nm, decreased with increasing Cr concentration. Surface morphology and crystal size were verified by Field Emission Scanning Electron Microscopic (FE-SEM) and High Resolution Transmission Electron Microscopic (HR-TEM) images display the dense aggregation of quantum dots and average size < 10 nm respectively. The optical properties studies were investigated by UV-Vis spectroscopy, detected absorption peaks were shifted towards shorter wavelength. Functional groups and chemical species of Cr doped ZnS were determined using FTIR data. Raman spectra exhibit vibrational modes of controlled and ZnS: Cr(%).