Raman spectroscopy and FTIR spectroscopy studies of Mn-doped CdSe QDs at different particles size

Author
Nor Aliya Hamizi, Mohd Rafie Johan, Zaira Zaman Chowdhury, Yasmin Abdul Wahab, Y.Al-Douri, Asmalina Mohamed Saat, Omid Akbarzadeh Pivezhani

Keywords
Cadmium selenide; Quantum dots; Manganese doped; Semiconductor; Chemical synthesis; Raman spectroscopy; FTIR spectroscopy

Abstract
In this paper, we exclusively report on raman spectroscopy and fourier-transform infrared (FTIR) spectroscopy results and analysis of zinc blende manganese-doped cadmium selenide quantum dots (Mn-doped CdSe QDs) that synthesized using inverse Micelle technique with physical size ranging from 3 to 14 nm. Two significant peaks were observed correspond to the raman scattering by longitudinal optical (LO) of phonon and its first overtone (2LO) which located near ~ 200 and 400 cm–1 under an exposure of 532 nm incident laser The role of oleic acid acid as a surfactant and capping agent shows in FTIR spectra.