ZnO:Ca nanostructures were synthesized by reflux method and their structural, optical, and phonon properties were discussed. The synthesized ZnO:Ca nanostructures showed rod-like morphology with tunable band gap and fluorescence. Band gap shrinkage and impressive near-white light emission were observed in ZnO:Ca nanostructures from the optical studies. The ratio of relative intensity of the defect luminescence (green band) to the near band emission was increased. Raman studies were carried out to get insight into phonon related vibrational properties. The decrease in the relative intensity of $E_{2\text{High}}$ mode indicated the increase of oxygen related defects in the ZnO nanostructure after Ca doping.

Keywords: ZnO:Ca nanorods, Raman spectra, fluorescence

Acknowledgment: The authors gratefully acknowledge the FONDECYT Project No.: 3160142, Government of Chile, Santiago, for the financial assistance.

Keywords: ZnO:Ca nanorods, Raman spectra, fluorescence

Presenting author's email: uday.rednam@gmail.com