Mn^{2+} doped ZnO Nanophosphor synthesized by low pressure solvothermal process

Prashant K Sharma*, Raghvendra S Yadav and Avinash C Pandey
Nanophosphor Application Centre,
University of Allahabad,
Allahabad-211002, India
+91 (532) 2460675
*sharmakprashant@rediffmail.com

Abstract

Green Photoluminescent Mn^{2+} doped ZnO nanophosphors have been synthesized by using two step methods, involving a low pressure solvothermal process followed by heat treatment. Solvothermal process was carried out at different pressures at 20 kPa – 150 kPa for different reaction time, 30 min - 3 h. Wide angle X-ray diffraction, Small Angle X-Ray Scattering, Transmission Electron Microscopy and Photoluminescence Spectroscopy were used to characterize Mn^{2+} doped ZnO nanophosphors. Mn^{2+} doped ZnO nanoparticles are efficient nanophosphors that can be used for applications in the solid state lighting and display devices.

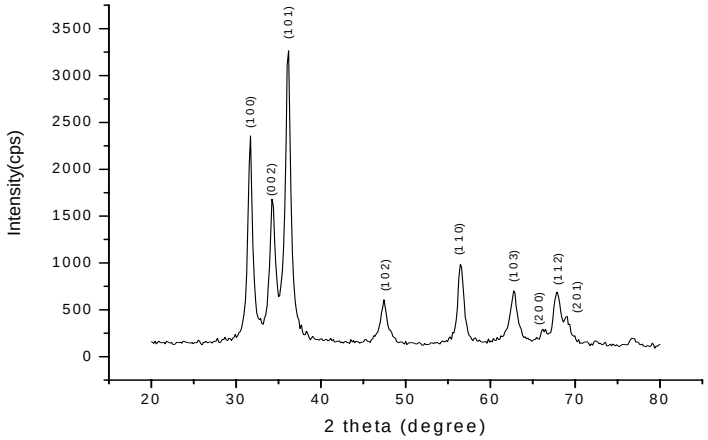

Figure. XRD pattern of Mn^{2+} doped ZnO nanophosphors synthesized by low pressure solvothermal process