

Fabrication and Properties of Aluminum-Doped Zinc Oxide Nanorod



Laksanaphon Sridawong* and Sirikanjana Thongmee

Department of Physics, Faculty of Science, Kasetsart University, Bangkok, Thailand

This project is studied on fabrication zinc oxide nanorod and aluminum doped zinc oxide ($Zn_{1-x}Al_xO$) nanorods in various concentrations (1, 2, 3, 4, 5, 6 in mole percentage) by using the hydrothermal method which was done in an oven heated to 180 °C with a 12 hours synthesis time. The XRD patterns showed that all of the Al- doped ZnO nanorods and all show the reflection peaks of the hexagonal wurtzite ZnO. SEM images determined that the morphologies of pure ZnO and Al doped ZnO were nanorods. They looked like hexagonal shape rods with the long axis with the c axis pointing in a variety of directions. The UV-Vis spectroscopy used to identify the formation of functional group. From UV-Vis, all samples showed an absorption in UV region of the spectra and a band edge near 400 nm. The decreasing in the energy of the band (energy) gap (3.13 to 2.6 eV) as the amount of Al was increased.

Biography:

Miss.Laksanaphon Sridawong. I am 24 years old and currently, I am a student is Master of Science in Physics Department Faculty of Science, Kasetsart University. She got her B.Sc in Physics at Kasetsart University.