International Journal of ChemTech Research
CODEN(USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.9, No.10pp118-130,2016

The effect of liquid environment and magnetic field on optical properties ofPt nanoparticles colloidal prepared by pulsed laser ablation

Ghaleb Al-Dahash, NaghamM.Obaid,Hassan A.Majeed

University of Babylon, College of Science for girls, Department of Laser Physics, IRAQ.

Abstract: In this research, we study the effect of the magnetic field and the liquid environment on the structure and optical properties of the platinum nanoparticles prepared in by laser ablation. Laser ablation pulse Method was used to preparation of platinum nanoparticles around (5-10) nm using a laser (Nd- YAG) pulse and different wavelengths (355, 532, 1064) nm, in different solvents such as Double Distilled and Deionized Water (DDDW), methanol and Sodium Dodecyl Sulphate (SDS) at different concentrations. Measured absorbance spectra and fluorescence, and check the scanner electron microscope (SEM) and Transmission Electron Microscope(TEM) were investigated. The results showed the possibility of preparation of colloidal solutions of platinum and granular sizes less than(10) nm. It's showed the absorption peak at the wavelength of (280) nm. The scanning electron microscope images are shown the formation of spherical shape nanoparticles using the method of laser ablation (PLA). When applied a magnetic field during the ablation laser process of Platinum nanoparticles noted that the absorption peakmay become more apparent from the absorption peak without a magnetic field and this is a positive factor in improving the oscillation resonance surface Plasmon (SPR) for platinum in thewater.

Keywords:liquid environment, magnetic,optical properties, nanoparticles,pulsed laser ablation.

Ghaleb Al-Dahash *et al*/International Journal of ChemTech Research, 2016,9(10),pp 118-130.

*****