



ChemTech

International Journal of ChemTech Research

CODEN(USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.10 No.6, pp 930-936,2017

Gold Nano Particles Produced by Laser Induced plasma Spectroscopy

Ali A-K. Hussain¹, Ahmed Abd Al-Razzaq²

University of Baghdad, College of Science, Department of Physics, Baghdad, Iraq
Department of Physics, College of Science, University of Baghdad, Baghdad, Iraq

Abstract :Gold nanoparticles (Au NPs) have been more attractive in use in many fields because of their simple synthesis, tunable optical properties as well as good biocompatibility practicable for clinic settings. In this work, the glow of plasma produced by pulse laser ($\lambda=1064\text{nm}$) on gold samples in distilled water were analyzed by studying of the atomic lines and making comparison with strong standard lines for gold. The effect of laser energies at the range (400, 500, 600, 700 and 800 mJ) on gold nanoparticle, produced by laser ablation, were investigated by XRD, AFM and UV-visible absorption. AFM and XRD results indicate that the gold particle size decrease with increasing laser energy. Absorbance spectra shows that the plasmon peaks shifted from 537 to 490 nm when laser energy increase from 400mJ to 800 mJ as a result of decreasing particles diameter.

Keywords: LIPS; pulse laser; spectroscopy; Nano particles; Plasmon.

Ali A-K. Hussain *et al*/International Journal of ChemTech Research, 2017,10(6): 930-936.
