J Nanomed Nanotechnol 2013, 4:6
http://dx.doi.org/10.4172/2157-7439.S1.015

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Nanotek & Expo

December 02-04, 2013 Hampton Inn Tropicana, Las Vegas, NV, USA

Fabrication and biological application of ferromagentic Ni nanoparticles

Hussain wali
University of Engineering and Technology, Pakistan

The nickel nanoparticles have been fabricated by laser ablation of pure nickel (99.99%) target in liquid environment. Three different liquids, i.e., de-ionized water, sodium dodecyl sulphate (SDS) and ethanol have been used to control the size of nanoparticles. The size of nanoparticles has been measured by zetasizer nano zs using dynamic light scattering (DLS). The size range is found to be 43 nm to 80 nm in de-ionized water, 24 nm to 32 nm in ethanol and 4.5 nm to 5 nm in SDS. The surface morphology of the nickel nanoparticles have been observed by atomic force microscope (AFM). Structural characteristics of the nanoparticles are confirmed by X-ray diffraction technique; showing (111), (200), (400) peaks of fcc nickel nanoparticles and (200), (222) peaks of hcp nickel nanoparticles. Also (311) peak of NiO nanoparticles was found. The various concentrations of nanoparticles produced are confirmed by UV-Vis spectrometer. The bactericidal effect of the fabricated Ni nanoparticles is checked against well known bacteria *Escherichia coli*. The nickel nanoparticles have been found highly toxic against *Escherichia coli.*

Biography

Hussain wali has completed M.Phil. in Applied Physics at the age of 26 years from University of Engineering and Technology, Lahore (Pakistan). He is young researcher and very motivated to his research work. Currently, he is looking forward for Ph.D. He has sent two researcher papers to SCI indexed journals.

hussainwalli@gmail.com

Development of novel three way automotive catalysts

Isik Onal and Duygu Gerceker
Middle East Technical University, Turkey

Air pollution generated from automotive exhaust gases is an important environmental problem due to emission of pollutants such as HC's, CO and NO_x. Three way catalysts (TWC) are highly important in simultaneously converting those pollutants to harmless CO, N_2 and water vapor. A conventional TWC consists of noble metals Pd, Pt and/or Rh placed on CeO_2-Al_2O_3 support. Zirconia doping is also effective in enhancing catalytic activity. Density functional theory (DFT) is a powerful tool to accurately investigate structure and energetics of TWC systems. The objective of the study is to model novel and efficient TWC catalysts for CO and NO conversion with much lower Pd or Rh content and enhanced oxide support activity. Activity of various metal atom substituted or cluster adsorbed ceria and ceria-zirconia surfaces are compared. Ultimately, metal impregnated oxide catalysts will be synthesized for catalytic activity test under exhaust chamber conditions.

Biography

Isik Onal has B.S. and M.S. degrees from MIT and a Ph.D. from Northwestern University. He has 4 US Patents and 1 European Patent and has published more than 60 papers in reputed journals. He is presently a faculty member at METU.

ional@metu.edu.tr