Synthesis and characterization of alloy nanoparticles

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Abstract Present work involves synthesis of alloy nanoparticles by wet chemical method. Firstly alloy nanoparticles were prepared and later subjected to annealing thereby enhancing diffusion forming modified nanoparticles. CTAB is used as a template, at high concentration they form micelle with an aqueous chamber in a polar solvent here water was used. In the aqueous cavity nanoparticle formation takes place after the addition of sodium borohydrite. Alloy nanoparticle is the formed inside it as conformed by UV-vis spectroscopy and Energy Dispersive spectroscopy. These alloy nanoparticle have been viewed under Transmission Electron Microscopy, conforming that the dimensionality of the particles is in the nano-range. Spherical nanoparticles of size 4-5nm were formed that had given rise to nano network congestion. These nanoparticles were used in mercury sensing and were also used to synthesize spider silk-alloy hybrid nano-composite. In the near future these nanoparticles will open new field of research in Forensic Nanotechnology.

References

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Figures

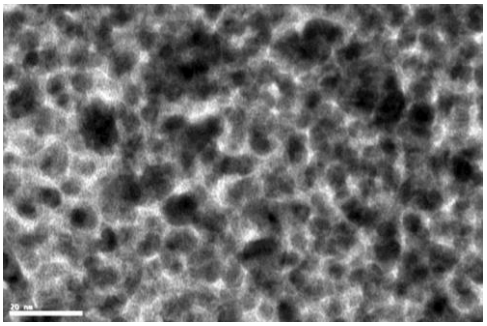

Fig1: TEM image of alloy nanoparticle