Preparation of silver nanoparticles by pulse sonoelectrochemical method and studying their characteristics

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Abstract: Silver nanoparticles with spheres, rods have been prepared by a pulse sonoelectrochemical technique from an aqueous solution of $AgNO_3$ in the presence of sodium dodecyl sulfate $C_{12}H_{25}NaO_4S$ - (SDS). The as-prepared silver nanoparticles are characterized by electron microscopy (TEM, SEM), powder X-ray diffraction (XRD), and UV-vis absorption spectrum. It was found that the concentration of $AgNO_3$ and SDS affects the shape of the nanoparticles. The crystal size could be varied from 5 nm up to 200 nm by controlling the various electrodeposition and sonic parameters. © 2009 IOP Publishing Ltd.
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