Powder Metallurgy of Silver Nanoparticles for Jewelry Making

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ABSTRACT – Silver nanoparticles were successfully synthesized using chemical reduction method in aqueous solution. The particles were precipitated and dried in order to make nanosilver powder. SEM images show their size in the range of 50 – 200 nm. Silver nanoparticles powder was mixed with organic binder and water to be nano-silver clay. The clay can be shaped like any soft clay, by hand or using moulds. Sintering temperature of the synthesized nano-silver clay is 300 ºC which is lower than that of commercial silver clay. The synthesized nano-silver clay becomes silver metal after firing at 600 ºC for 30 min. It can be applied for jewelry and art works.

KEY WORDS – Silver nanoparticles, Silver clay, Sintering temperature, Jewelry making