Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

A New Route for the Synthesis of Silver Nanocubes in PSS under Microwave irradiations SUBRATA KUNDU, RAVI SARAF, Department of Chemical Engineering, University of Nebraska, Lincoln, NE- 685088 — Shape control synthesis of inorganic nanostructures has received considerable attention in recent years because of applications in catalysis, optics, microelectronics and magnetics and medical diagnostics. Faceted nanostructures, such as cubes can provide properties distinct from spherical nanoparticle, for example, pinning of the magnetic domains to attain ferromagnetic properties at nanoscale, catalysis and SERS-based sensing that are lost in spherical shape due to thermal fluctuation. Noble metal nanoparticles (NPs) such as silver with cubic shape used as a template formation of gold nanoboxes and iron nanocubes used as the building block of magnetic superlattices. Here, we demonstrate a new approach for the rapid synthesis of silver nanocubes by a simple microwave irradiation approach. The present approach we described here for connecting nanomaterials into desired shapes and thereby tuning their optoelectronic properties may find wide application in nanotechnology particularly in nanoelectronics and plasmonics.

Subrata Kundu
Department of Chemical Engineering, University of Nebraska

Date submitted: 02 Dec 2006 Electronic form version 1.4