


# SILVER NANOPARTICLES OBTAINED BY SONOCHEMICAL ROUTE

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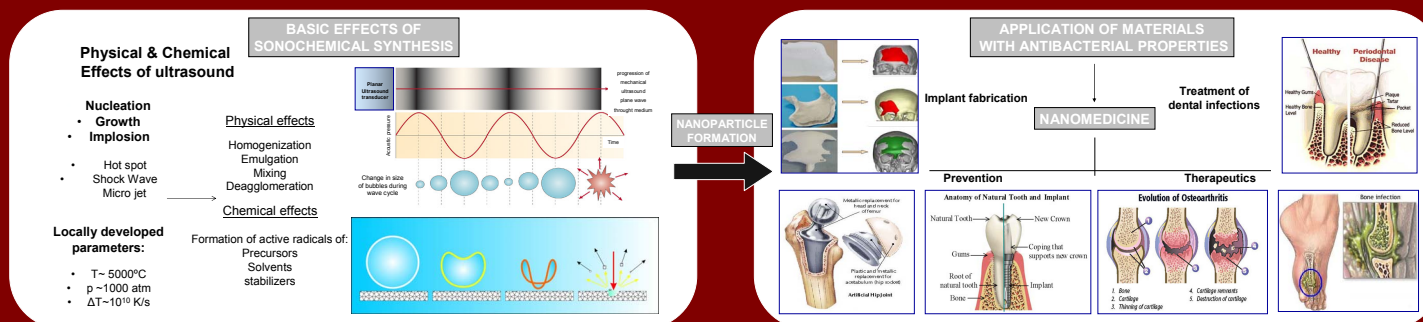
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## INTRODUCTION



## RESULTS

### MORPHOLOGICAL PROPERTIES

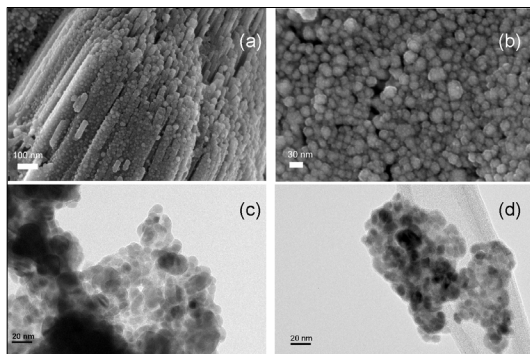


FIGURE 1: Silver nanoparticles

FIGURE 1

Morphology of sonochemically obtained silver shows aggregated sphere-like nanoparticles with axial spatial orientation. Particles are up to 30 nm in size.

FIGURE 2

Morphology of sonochemically obtained silver/hydroxyapatite composite particles shows individual sphere-like silver nanoparticles distributed onto the surface of plate-like hydroxyapatite. Silver particles are up to 10 nm in size, while hydroxyapatite plates have submicrometre dimensions.

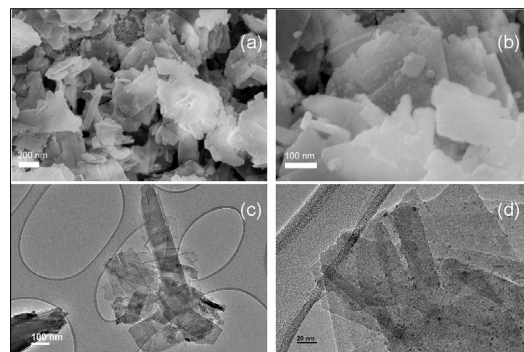
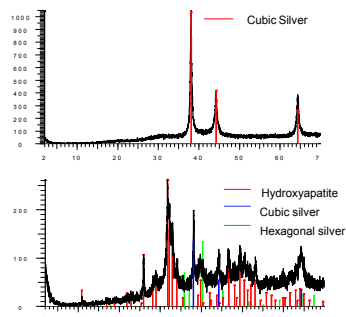


FIGURE 2: Silver /Hydroxyapatite composite particles

### IDENTIFICATION



### DISCUSSION and CONCLUSION

Urea, applied as a capping agent of silver, promote formation of silver complex which decomposes at 300°C.

As a result:

- Monophase Ag with the structure of cubic silver forms sphere-like morphology with particles up to 30 nm in size.

- In the case of HAp/Ag composite, cubic and hexagonal phases of silver were obtained. Silver particles had sphere-like morphology with sizes up to 10 nm. They were attached to the surface of micrometre-sized HAp plates.

- Chemical interactions between HAp and silver-complex are observed indicating templating role of HAp in mechanism of silver nanoparticles formation.

HAp surface contributes to Ag particles growth by influencing morphological and structural parameters of Ag within HAp/Ag composite.

### CHEMICAL INTERACTIONS

