

## Sonochemical synthesis of gold nanoparticles doped on silica nanoparticles

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Recently, gold and silica nanoparticles have brought interests in bioanalysis applications due to high surface area and chemical and mechanical stability with high biocompatibility. Several methods have been employed to synthesize and modify both gold and silica nanoparticles for further applications. However, almost all the previously reported synthesis and deposition methods of gold nanoparticles on silica particles are required extra steps to modify silica particles. In addition, the synthesized gold nanoparticles have a wide size distribution with various shapes. In order to solve these problems, the use of sonochemical method will provide a unique condition to fabricate gold nanoparticles and modification of silica nanoparticles. In this study, we synthesized the gold nanoparticles deposited on silica nanoparticles using sonochemical method. The gold-doped silica nanoparticles have been characterized and analyzed with TEM, SEM, XPS and other tools.