Immobilization of silver nanoparticle on thiol functionalized silica micro beads

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In this study, silica micro beads with sizes ranging from 180 to 500 μm were modified with 3-mercaptopropyltriethoxysilylane to introduce thiol (-SH) functional groups onto their surface. Silver ions were loaded onto surface of modified silica and reduced to silver crystals by adding NaBH4. The presence of silver nanoparticles as well as structure of materials is confirmed by FT-IR, BET, XRD, FE-SEM, and FE-STEM. Results revealed that silver particles were successful synthesized and immobilized on the surface and in the pores of silica substrate with an average size about 5 nm.