

Nanocomposites and nanomaterials

Controlled synthesis of gold nanoparticles and their composites

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Historically, gold was regarded to be catalytically inert, but since the discovery of surprisingly high catalytic activity for low-temperature CO oxidation, it has been shown that gold becomes active for many reactions when stabilized in the form of nanoparticles attached to metal oxide and activated carbon supports [1].

Present work shows a new synthesis of gold nanoparticles and gold-polymer nanocomposites. Gold electrodeposition in dimethylformamide on glassy carbon was tested in details. Copolymer made of aniline and 2-mercaptoaniline with introduced mercapto-groups in the polymeric chain was used to prepare gold-polymer nanocomposite. Based on experimental results a relationship between reaction conditions and properties of the nanomaterials was proposed.

1. *Haruta M. Gold as a Novel Catalyst in the 21st Century: preparation, Working Mechanism and Applications // Gold Bull.-2004.-37,-P. 1–2.*