

## **291ac Preparation of Gold Nanocomposite Via Chemisorption of Gold Nanoparticles with Poly( P-Methylstyrene)**

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Styrenic gold nanocomposite has been synthesized by anchoring styrenic polymer molecules containing multiple functional groups onto the surface of gold nanoparticles (AuNPs). p-Methylstyrene was first anionically polymerized and the resulting polymer was chlorinated with sodium hypochlorite in the presence of a phase transfer catalyst. The chlorinated poly(p-methylstyrene) was next reacted with methylthiomethyl lithium, which had been prepared via a metalation reaction of dimethyl sulfide with n-butyllithium, to form a styrenic polymer containing thioether groups on the sides of the molecule. These thioether groups on the chain sides afforded more chemisorption sites per molecule to AuNPs. The nanocomposite has been analyzed with NMR, TEM, UV-VIS, TGA and XPS.