Laser ablation synthesis of gold nanoparticles in tetrahydrofuran

ABSTRACT

We demonstrate the synthesis of gold nanoparticles in tetrahydrofuran using the pulsed laser ablation technique. Both ablation time and solution stirring effect were investigated. At an ablation time of 30 minutes, the average size of synthesized gold nanoparticles significantly reduced from 11 nm to 6 nm. Additionally, the percentage of gold nanoparticles greater than 15 nm reduced as well, from 20.00% to 0.47%. These observations were caused by forced convection flow and shock waves from the rapid laser pulse that fragmented the ablated gold nanoparticles further into smaller sizes.