URN etd-0407109-183703-158
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Statistics This thesis had been viewed 59 times. Download 25 times.
Department
Year 2005
Semester 1
Degree Master
Type of Document Master's Thesis
Language English
Title Study on Dielectric Properties of Metal/Silicone Oil Suspension Contains Electrochemically Synthesized Silver Nanoparticles
Date of Defense 0000-00-00
Page Count 73
Keyword
Electrochemical
nanoparticle
surfactant
electrorheology
suspension

Abstract Abstract
This article demonstrates that the nanoscale metal particles were synthesized via electrochemical technique with two kind surfactants. Metal atoms are usually wrapped by surfactant micelles in order to form metal nanoparticles. The surfactant concentration, applied current、voltage and growth temperature are playing important roles in formation of metal nanoparticles. Experimental results show that particles size of the produced silver nanoparticles can be controlled by the surfactant concentration, applied current、voltage and growth temperature. The size of silver nanoparticles is controllable in the range from 80 to 10 nm with increasing the surfactant concentration, applied current、voltage and growth temperature. The peak position of surface plasmon resonance (SPR) band decreases as blue-shifted from 430 to 420 nm with decreasing particle size. Furthermore, the dielectric loss and peak frequency of the suspensions increase progressively with the decreasing of the particle size.
Advisory Committee Chih-Chieh Kang - advisor

Chien-Jung Huang - advisor

Files etd-0407109-183703-158-001.pdf

indicate access worldwide
Date of Submission 2006-08-21