LASER APPLICATION TO PRODUCE COPPER NANOPARTICLES IN SOME DIFFERENT LIQUIDS

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TÓM TẮT:

Copper nanoparticles are difficult to produce since they oxidate or aggregate easily. We studied to use Nd:YAG laser to produce copper nanoparticles in clean liquids such as distilled water, deionized water , ethanol and acetone. The role of laser fluence, laser irradiation time were determined for optimal laser ablation process. The TEM and spectral measurements were carried out to determine average size and size distribution of copper nanoparticles. There was no indication of the absorption peak around 800 nm which is typical of copper oxide nanoparticles except the characteristic peak around 600 nm of the copper nanoparticles in absorption spectra. The experimental results showed advantages of the laser ablation method