Abstract Submitted
for the APR13 Meeting of
The American Physical Society

Characterization by spectroscopic Ellipsometry, the physical properties of silver nanoparticles. JEAN-MAURICE COANGA, None — Physicists are able to change their minds through their experiments. I think it is time to go kick the curse and go further in research if we want a human future. I work in the Nano-Optics and Plasmonics research. I defined with ellipsomètrie the structure of new type of Nano particles of silver. It's same be act quickly to replace the old dirty leaded electronic-connexion chip and by the other hand to find a new way for the heath care of cancer disease by nanoparticles the next killers of bad cells. Silver nanoparticle layers are obtained by Spark Plasma Sintering are investigated as an alternative to lead alloy based material for solder joint in power mechatronics modules. These layers are characterized by mean of conventional techniques that is the dilatometry technique, the resistivity measurement through the van der Pauw method, and the flash laser technique. Furthermore, the nanoparticles of silver layer are deeply studied by UV-Visible spectroscopic ellipsometry. Spectroscopic angles parameters are determined in function of temperature and dielectric constants are deduced and analyzed through an optical model which takes into account a Drude and a Lorentz component within the Bruggeman effective medium approximation (EMA). The relaxation times and the electrical conductivity are plot in function of temperature. The obtained electrical conductivity give significant result in good agreement to those reported by four points electrical measurement method.

Jean-Maurice Coanga
None

Date submitted: 11 Jan 2013 Electronic form version 1.4