

Poster Presentations

Optical properties of the ZnPC thin films

Mays A. H. Abdalghafoor, M. M. Abu Samreh, A. F. Qasrawi

Department of Physics, Arab-American University, Jenin, West Bank, Palestine

maysabdalghafoor@gmail.com

Abstract

In this work, the ZnPc thin films which were prepared by the vacuum deposition technique is optically characterized by means of Uv-Vis spectrophotometry. For this purpose two films of different thickness are selected. The optical, transmission, reflection and absorption allowed determining the, the absorption bands, the energy band gap, the real and imaginary dielectric constants, the dielectric media quality factor and the optical conductivity of the films. It was observed that the more thick the film, the higher the absorption and the less the energy band gap. On the other hand, the dielectric dispersion analysis revealed that the dielectric spectra which is investigated in the frequency range of 300-1000 THz, shifted toward higher values when the thickness increased from 0.8 to 2.4 mm. In addition, three additional dielectric resonance peaks are observed at 764, 684 and 470 THz for the to 2.4 mm thick sample. Moreover, the oscillator and dispersion energies for both films are determined in accordance with the single oscillator model approach and observed to be slightly influenced by the increasing thickness.

Keywords: ZnPc; optics; dispersion; thickness effect