

Confocal Raman spectroscopy of chalcopyrite thin films with different areas

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Raman spectroscopy is a spectroscopic technique used to observe vibrational, rotational, and other low-frequency modes in a system. It relies on inelastic scattering, or Raman scattering, of monochromatic light, usually from a laser in the visible, near infrared, or near ultraviolet range. The laser light interacts with molecular vibrations, phonons or other excitations in the system, resulting in the energy of the laser photons being shifted up or down. The shift in energy gives information about the vibrational modes in the system. Infrared spectroscopy yields similar, but complementary, information. In this study, chalcopyrite thin films were synthesized via colloidal route process and spray deposition method. The results of different areas on the Cu-In-(Ga)-Se nano-powder synthesis and subsequent chalcopyrite thin films confocal Raman spectra were examined in detail.

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