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Reducing the bandgap energy via doping process in lead-free thin film nanocomposites

Padmaja Guggilla
Alabama A&M University, USA

There are numerous applications for the pyroelectric composite films in the medical field, military field and environmental applications field. The main focus of this research is to fabricate the higher efficiency thin films that are flexible like the polymers. PVDF is ideal when it comes to making detectors as they are flexible; possess high pyroelectric current and resistance, low dielectric constant and density. Pure PVDF and PVDF films doped with CNT and MWCNT, PVDF: $LiTaO_3$, PVDF:$LiTaO_3$ films doped with MWCNT thin films were fabricated using the solution casting technique. Evaluated the deposited films' electrical, optical and structural properties using SEM, FTIR Spectroscopy, UV-Vis Spectroscopy, and Raman Spectrum. Results show that doping with CNT and MWCNT is enhancing the key characteristics that are beneficial for the optical devices industry.

Biography

Padmaja Guggilla has completed her PhD from Alabama A&M University in 2007. She is presently working as Associate Professor of Physics at Alabama A&M University. She has published more than 45 papers in reputed journals and has been serving as an Editorial Board Member of reputed journals. She has secured over 2 million dollars of extramural funds as Principal Investigator in the last five years.

padmaja.guggilla@aamu.edu

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