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Novel Ferroelectric Hybrid Poly(vinylidene fluoride)/Graphene Oxide Nanocomposite for Photosensor Applications

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Abstract

The graphene oxide (GO) nanosheets doped poly(vinylidene fluoride) (PVDF) nanocomposites were successfully fabricated using the solution blending. The structural properties of the PVDF/GO nanocomposites were investigated using the field emission scanning electron microscopy (FESEM) and transmission electron microscopy (SEM) techniques. The surface morphology properties of the PVDF/GO nanocomposites were changed with GO contents. The dielectric properties such as AC conductivity, real and imaginary permittivity as a function of frequency of PVDF/GO nanocomposites were determined. The prepared PVDF/GO nanocomposites exhibited a ferroelectric behavior. Finally, the applicability of as fabricated PVDF/GO nanocomposites for the rectifying was tested, too. The obtained results indicate that the PVDF/GO nanocomposites can be promising materials for heterojunction diodes.

Keywords

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