

## Radiation Effects in the PVDF/Graphene Oxide Nanocomposites

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**Abstract :** Exposure to ionizing radiation has been found to induce changes in poly(vinylidene fluoride) (PVDF) homopolymers. The high dose gamma irradiation process induces the formation of C=C and C=O bonds in its  $[\text{CH}_2-\text{CF}_2]_n$  main chain. The irradiation also provokes crosslinking and chain scission. All these radio-induced defects lead to changes in the PVDF crystalline structure. As a consequence, it is common to observe a decrease in the melting temperature ( $T_M$ ) and melting latent heat ( $L_M$ ) and some changes in its ferroelectric features. We have investigated the possibility of preparing nanocomposites of PVDF with graphene oxide (GO) through the radio-induction of molecular bonds. In this work, we discuss how the gamma radiation interacts with the nanocomposite crystalline structure.

**Keywords :** gamma irradiation, graphene oxide, nanocomposites, PVDF

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