

# Nanocomposites and nanomaterials

## The electron radiation effect on polyvinylchloride (PVC) nanocomposites with multi-walled carbon nanotubes compounds

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We demonstrated that polyene sequences in the form of faulty spots with conjugated double C=C linkages of various length are formed in polyvinylchloride (PVC) nanocomposites with multi-walled carbon nanotubes (MWCNTs) in the course of thermal/mechanical and chemical dehydrochlorination. Change in MWCNTs content (up to 2.0 wt.%) in such nanocomposites in combination with electron irradiation ( $E_e=1.8$  MeV, dosage of 0.05 MGy) causes intermolecular cross-linking and destruction of the main chain and the aforesaid faulty spots, confirmed by changes in their Raman scattering spectra and photoluminescence as well as by complicated behaviour of Young's modulus.