

APPLICATION
OF THE THERMALLY STIMULATED
DEPOLARIZATION METHOD FOR STUDYING
THE STRUCTURE OF POLYMER COMPOSITES

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S u m m a r y

The Maxwell—Wagner—Sillars (MWS) losses and the α -transition in filled polyvinylchloride (PVC) have been investigated making use of the thermally stimulated depolarization (TSD) method. The maximum of the electric MWS losses in such microheterogeneous systems has been found to depend on the time t_p of the formation of a thermoelectret in the external electrostatic field, the electric field strength E , the time delay of the exposition after the polarization t_e , and the type and the concentration φ of a superfine filler in PVC. The factors that are responsible for the emergence of the dispersion regions for the kinetic units, which belong to the structural formations in a heterogeneous polymer system (HPS), have been analyzed in the framework of the theory of molecular relaxation. The researches carried out in the framework of the theory of normal modes showed that the activities of PVC fillers, when considering their influence on the character of the TSD spectrum, are ranged as follows: W, Zn, graphite, talc, and corundum.