

Abstract: Packet-like space-charge behavior in low density polyethylene (LDPE) under dc field was reported. It was found that when a high electric field above several kV/mm was applied to LDPE, a large amount of positive packet-like charge was appeared near the anode. The packet-like charge moved towards cathode and disappeared near the cathode. In this paper, a numerical simulation is proposed to discuss the packer-like charge behavior The model is based on the following assumptions, (1) the charge injected by electrode formed the space charge packet, specially exceed holes injected by anode in this paper; (2) the carrier migration rate and applied field exists a negative slope range in LDPE and it causes a space-charge packet. Furthermore, the computer simulation results are compared with the measurement results.