

**Abstract:** Piezoelectrets, based on the bipolarity space-charge electret, become a new class of artificial piezoelectric functional materials. Their piezoelectric performances have a directly relationship with the charge storage capability of the material. In this paper, the charge storage stability and motion in the hot-pressed cross-linked polypropylene(XPP) electret films are investigated, by using the measurements of isothermal surface potential decay and open thermally stimulated discharge spectra. The results show that the storage stability of the positive charge in the XPP films excess that of the negative. When the pre-age temperatures are below 90 °C , the surface potential of positive-charged sample, still keeps above 90% of the initial value after 5120 min annealing, while the value for the negative-charged sample is below 86%.The thermally stimulated discharged negative charges drift along the internal electric field. Most of them are retrapped in deeper traps, meaning the motion of the detrapped charge is controlled by the fast retrapping effect.