

Abstract: The cellular irradiation-cross-linked polypropylene films treated by a hot-press process are corona charged to be piezoelectric. For the samples charged at room temperature, quasistatic piezoelectric d_{33} coefficients up to 400 pC/N are obtained. The d_{33} coefficients are slightly dependent on pressure in the range up to 50 kPa. The d_{33} values decrease to 30% when the samples are exposed to 90°C for 1 day; a preaging treatment improves the thermal stability of d_{33} . The dominant drift path of the detrapped charges is from one void surface to the adjacent void surface through the bulk of the solid.