

**Abstract :** The piezoelectrets made of porous polytetrafluoroethylene (PTFE) and nonporous fluoroethylenepropylene (FEP) layers are prepared by using a hot-pressing method. The dependence of the quasi-static piezoelectric  $d_{33}$ -coefficients of such films on the grid voltage during the corona charging is investigated. The thermal stability of  $d_{33}$ -coefficients for the films is characterized by the isothermal method. The Young's Modulus and dynamic  $d_{33}$ -coefficient are obtained by analyzing the dielectric resonance spectra of the films. The results show that the Young's modulus is around 2.4 MPa and the quasi-static piezoelectric  $d_{33}$ -coefficient is about 300 pC/N for the laminated PTFE/FEP films. The  $d_{33}$  value retains 40% of the initial value when the sample was annealed at 90°C for 20 h. For the samples pre-aged at the temperature of 120°C for 5 h, the remained  $d_{33}$  value is improved to 75% of the initial value in the same conditions. The  $d_{33}$  value determined by dielectric resonance spectra is smaller than the quasi-static  $d_{33}$  value, which is properly due to the enhanced Young's modulus with the increase of frequency.