

Abstract: Two methods for preparing piezoelectric fluorocarbon polymers with cellular structure (ferroelectrets) are introduced. Piezoelectric activity of laminated fluorocarbon films made from polytetrafluoroethylene (PTFE) and fluoroethylenepropylene (FEP) is characterized by quasistatic measurement of piezoelectric  $d_{33}$  coefficient, while the thermal stability of  $d_{33}$  is investigated by their isothermal decay. The results show that the quasistatic  $d_{33}$ -coefficients between 500 and 2200 pC/N are obtained for such fluorocarbon films;  $d_{33}$ -coefficients are relatively independent of the static pressure in the range of 20 kPa; comparing to cellular polypropylene (PP) film the new fluorocarbon films show not only higher values of  $d_{33}$ , but also much better thermal stability; moreover, thermal stability of the fluorocarbon film can be further improved by the process of pre-ageing.