

Abstract: Fused layers of polytetrafluoroethylene (PTFE) and fluoroethylenepropylene (FEP) films with small interfacial cellular gas voids show large quasistatic piezoelectric d_{33} -coefficients of more than 1000 pC/N. After annealing at a temperature of 90 °C for 4 days, d_{33} amounts to about 400 pC/N and thereafter changes by less than 10 percent over a period of 5 days at this temperature. The piezoelectric coefficient is independent of applied pressure in the range up to 20 kPa. Its frequency response shows a small decrease up to the vicinity of the thickness resonance frequency at 40 to 150 kHz.