Abstract： The piezoelectricity of a pressure-treated cellular polypropylene (PP) (commercially available,trade name PQ50) film electret was studied by the measurement of direct- and inverse-piezoelectric d_{33} coefficient.The sample expanded with optimal parameters has a quasi-static piezo-electric d_{33} coefficient of more than 600 Pc/N,which is about 40 times as high as that of polyvinylidene fluoride (PVDF). In addition,the hybrid multi-layer system,which properly combines single-layer cellular PP film electrets,shows a quasi-static piezoelectric sensitivity of as high as 2010 Pc/N. This is around three times higher than that of well-known lead zirconate titanate (PZT) ceramics.The results are theoreti-cally and technically helpful to promote the application of cellular PP film electrets.