

Abstract : Low cost, large area, lightweight, stretchable ferroelectrets have been fabricated by using commercially available irradiation cross-linked polypropylene (IXPP) foam sheets. Quasi-static piezoelectric d_{33} coefficients up to 400 pC/N are achieved, which are pressure independent in the range of applied pressure from 1 to 36 kPa. The piezoelectric performance in such IXPP films is well retained for the strain of less than 10%. There is no reduction of the piezoelectric activity in such films can be observed after 13500 cycles of stretch. Such new class materials may be applied in sensor skins, smart clothing, bio-inspired systems, micro energy harvesters, and so on.