Supplementary Information

A highly-deformable piezoresistive film composed of a network of carbon blacks and highly oriented lamellae of high-density polyethylene

Shaodi Zheng,[a] Jie Deng,[a] Luqiong Yang,[a] Danqi Ren,[a] Wei Yang,[a] Zhengying Liu,[a*] Mingbo Yang [a]

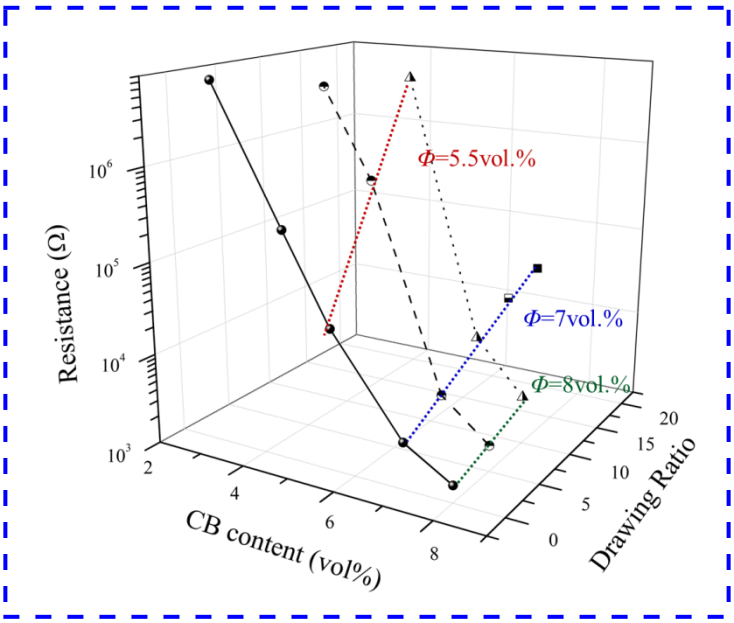

Fig. S1 – The resistance of the cast film as a function of the CB content and the drawing ratio.

As seen from Fig.S1, it can be clearly found that the resistance decreases with the CB content, whereas the resistance increases with drawing ratio. The film shows bad electrical conductivity at 5.5vol% CB content. And the film could be obtained at only three different drawing ratios at 8vol% CB content, due to the high CB content results the poor fluidity of the melt. Thus, the 7 vol% CB content for the composite was selected, which could ensure the good electrical conductivity and good mechanical property for the film.

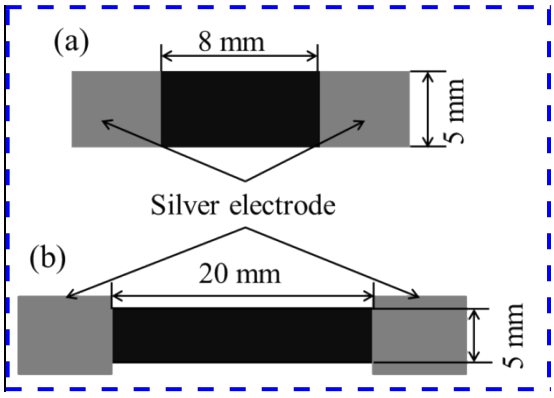

Fig. S2 – Schematic illustrations of the test specimens empolyed: (a) for resistance testing (b) for the tensile testing