

Fig. s1 Schematic illustration of the setup of a supercapacitor device in the *C-V* measurements.

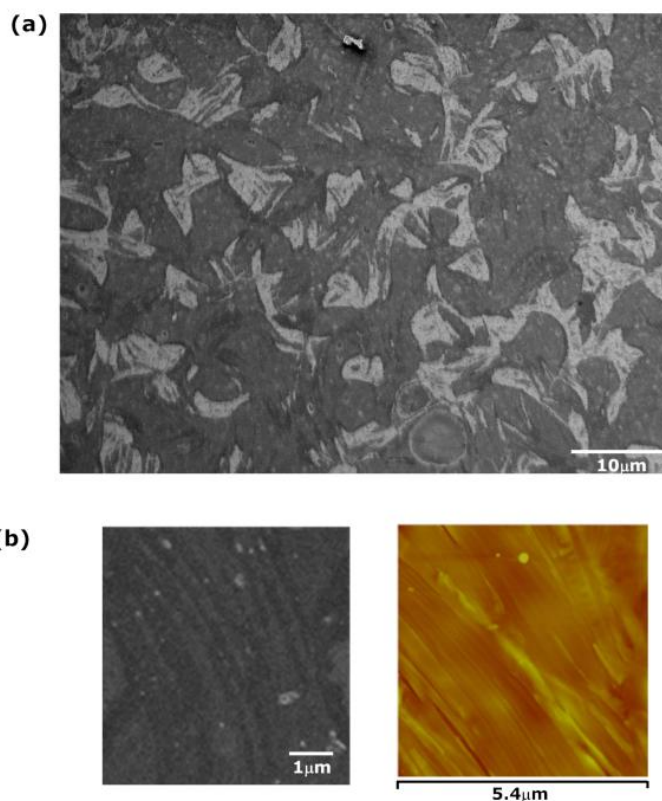


Fig. s2 (a) SEM image for the P3HT:PCBM film on FTO substrate after slow drying, (b) A comparison between domains with similar scale in SEM (left) and AFM (right) images. The AFM image is adopted from Fig. 2(c).

In Fig. s2(a), it is found that the nanowire domains in the scale of several μm are distributed randomly across most of the P3HT:PCBM film surface, and with different orientations. This observation well agrees with the AFM image shown in Fig. 3(a), indicating the formation of nanowire domains is a global phenomenon at the surface of P3HT:PCBM film. As revealed in

Fig. s2(b), the dimensions and morphological properties (e. g. orientation, area) of the domains closely resemble by comparing with the SEM and AFM images with a similar area.

During the SEM experiments, the “soft” P3HT:PCBM film was observed to be severely damaged under a high energy of electron beam (5 KeV). Therefore energy of electron beam was decreased to 1 KeV in acquiring the SEM images, which makes the pictures appear to be blurred to some extent.