Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics

Supporting information

In-situ ZnO nanowire growth to promote PVDF piezo phase and the ZnO/PVDF hybrid self-recified nanogenerator as touching sensor

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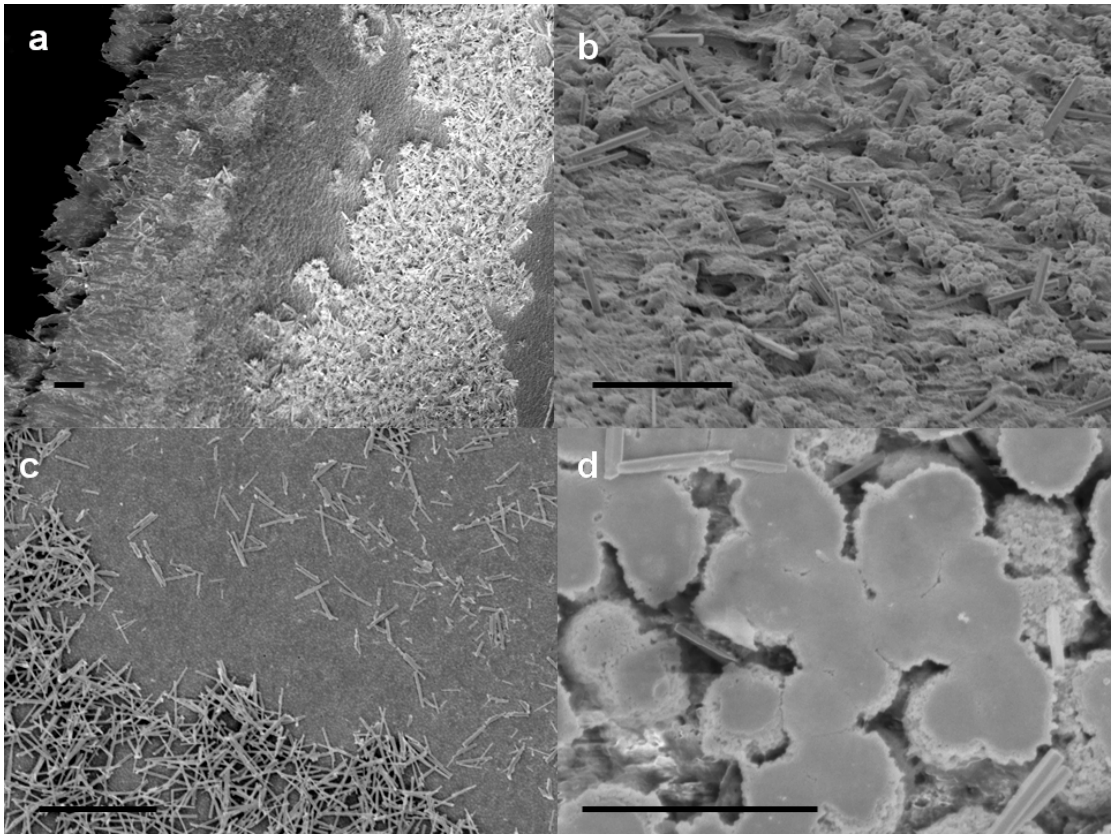

Figure S1. Structure and surface character of the PVDF/ZnO hybrid nanogenerator by SEM. a,the cutaway view of ZnO NWs distribution at and in the PVDF film. **b**,the ZnO NWs grown and draw increase the micro particle of PVDF. The image (c) of the ZnO NWs grown on and in the surface of PVDF film is demonstrated by alkaline etching. the PVDF film was heated to get expansion cracks at figure d which show the ZnO NWs inside the film. All the scale bar is 10 μ m.

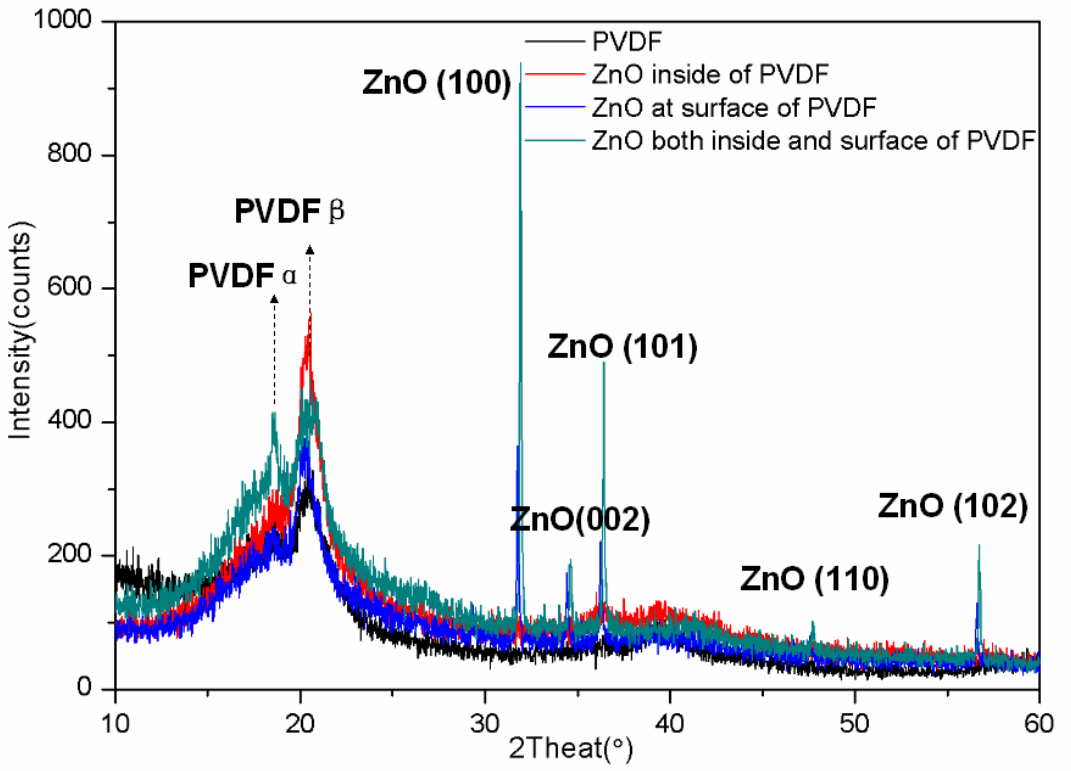

Figure s2. The X-ray diffraction spectra of PVDF/ZnO NWs. The black trace is the curve of pure PVDF film, and the red trace is the PVDF film with the ZnO NWs inside. The peaks in the blue trace belong to ZnO NWs growing on the surface after ZnO nano seeds coating at the surface, The green trace is the ZnO NWS both growing inside and surface of the PVDF film.

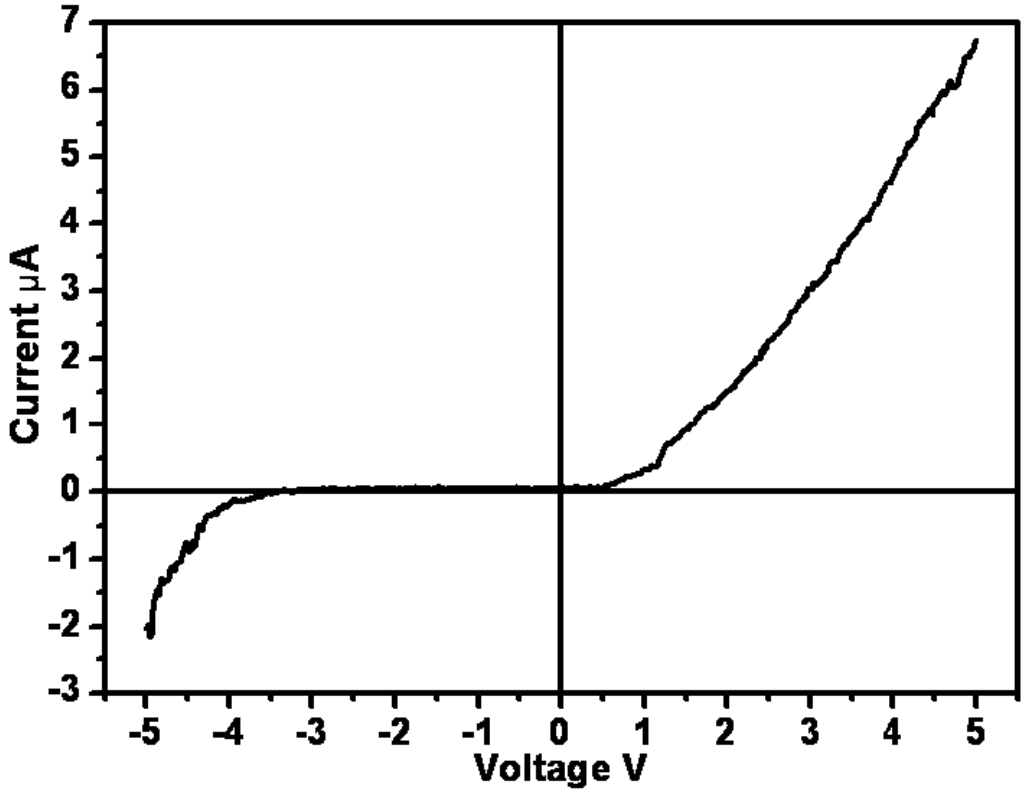

Figure s3. The I-V current of ZnO NWs which act as a schottky diode by piezoelectric in the hybrid generator .

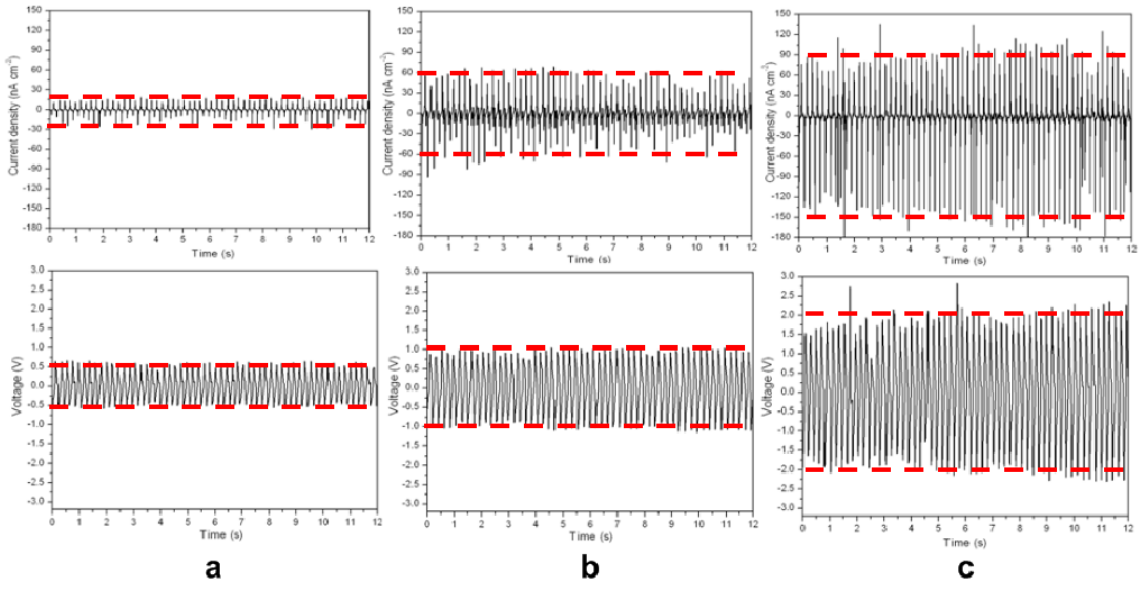

Figure s4. The measured current and voltage performance for PVDF/ZnO hybrid nano generator. From the left to right is the pure PVDF (0.5V and 30μA), PVDF with ZnO NWs inside(1.0V and 60μA) , and PVDF/ZnO NWs hybrid generators(2.0V and 150μA).,