## **Piezoelectric performance enhancement of ZnO flexible nanogenerator by a CuO-ZnO p-n junction formation**

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Fig S1. The output voltage and current of Au/PET/Cu device, measured in forward connection. No obvious out signal can be observed. (applied force 0.6 kgf)



Fig S2. The output voltage and current of Au/ZnO(60nm)/PET/Cu device, measured under forward connection (a, b) and reverse connection (c, d) .



Fig S3. The output voltage and current of Au/ZnO(100nm)/CuO(100nm)/PET/Cu device, measured under forward connection (a, b) and reverse connection (c, d) .



Fig S4. The output voltage and current of Au/ZnO(60nm)/CuO(100nm)/PET/Cu device, measured under forward connection (a, b) and reverse connection (c, d) .



Fig S5. The output voltage and current of Au/ZnO(60nm)/CuO(300nm)/PET/Cu device, measured under forward connection (a, b) and reverse connection (c, d).



Fig S6. Downward bending output characteristics.