Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Insight into piezoelectricity modulation mechanism of ZnO doped with Y ions

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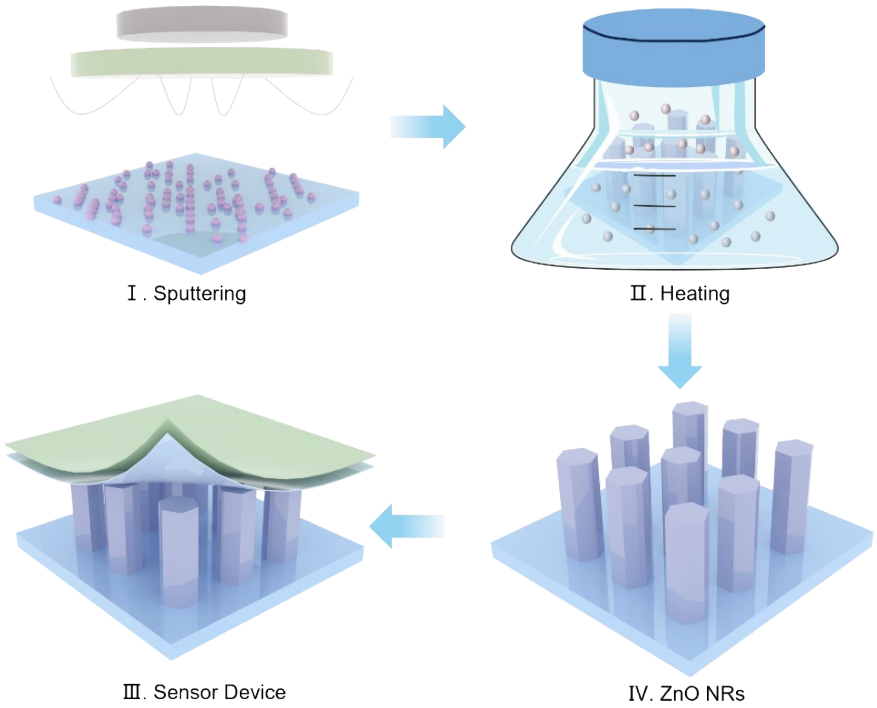

Figure S1. Fabrication schematic diagram of ZnO NRs film devices.

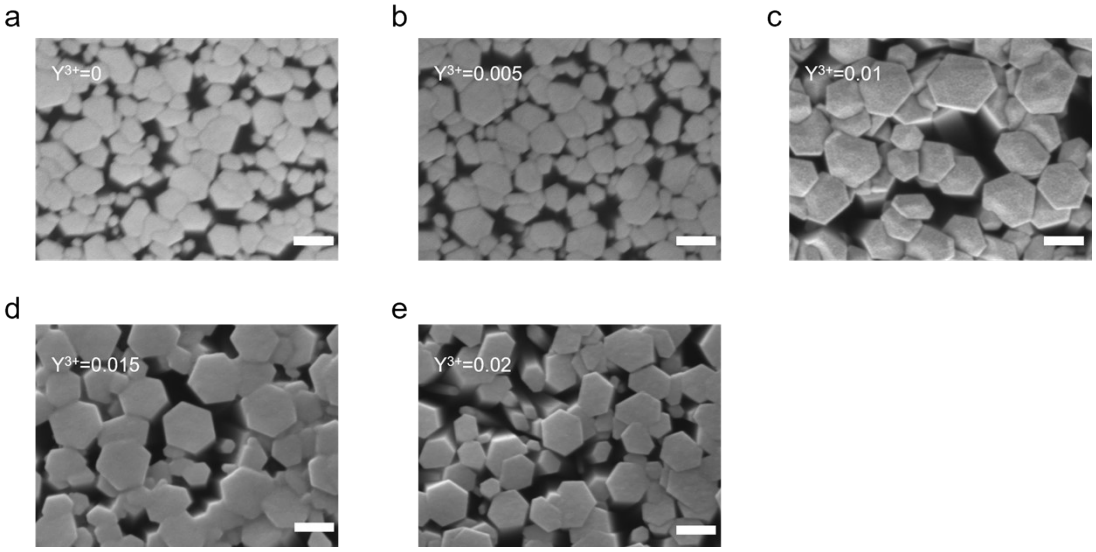

Figure S2. Surface SEM images of ZnO NRs with different doping concentrations. Scale bars, 300 nm.

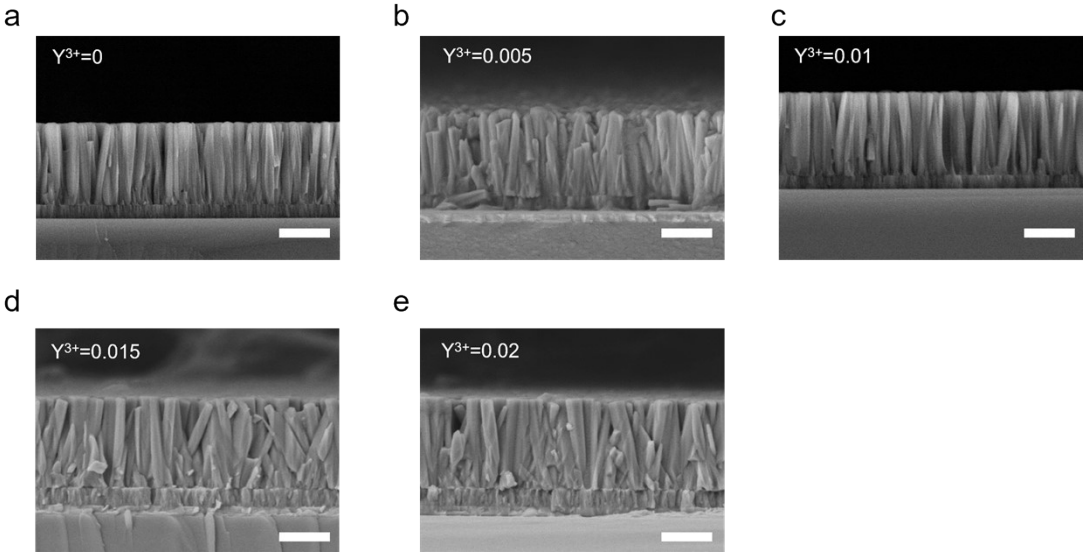

Figure S3. Cross-sectional SEM images of ZnO NRs with different doping concentrations. Scar bars, 1 μm.

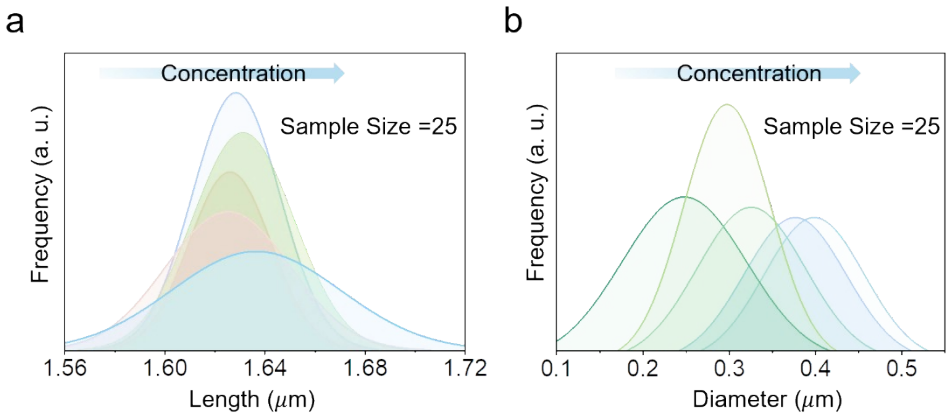

Figure S4. Length and diameter statistics of ZnO NRs with different doping concentrations.

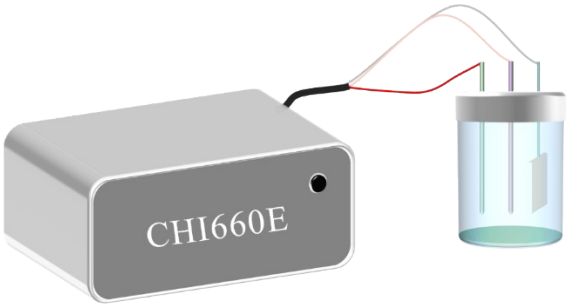

Figure S5. Schematic diagram of the Mott-Schottky test method by three electrodes.

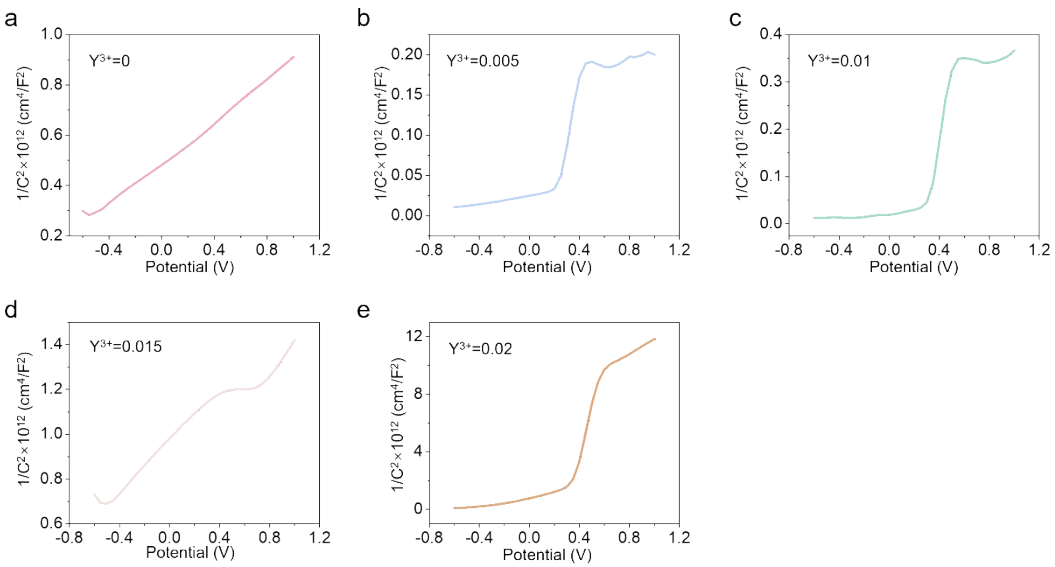

Figure S6. Mott-Schottky plots of ZnO with different doping concentrations.

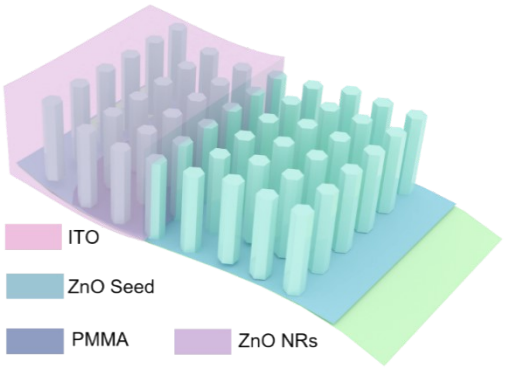

Figure S7. Schematic diagram of a piezoelectric device based on ZnO NRs.

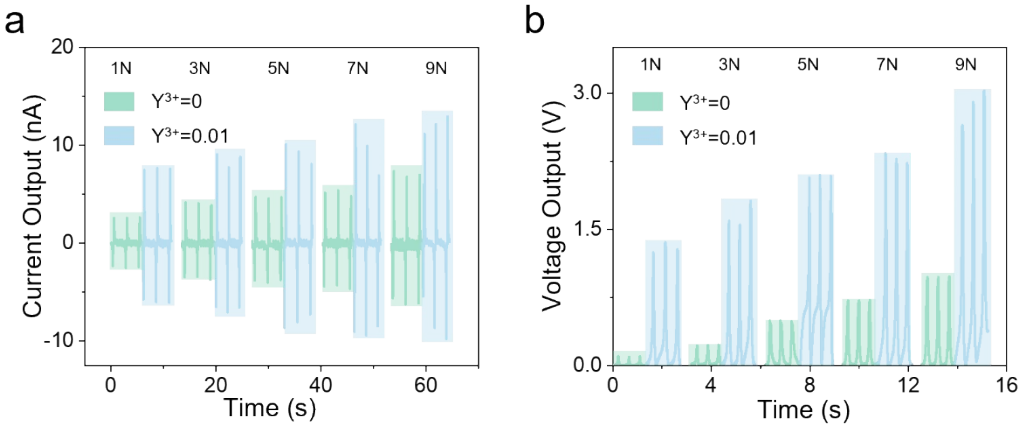

Figure S8. Trend diagram of ZnO (green) and Y- ZnO (blue) under forces ranging from 1to 9 N. Force area, 9 cm^2.

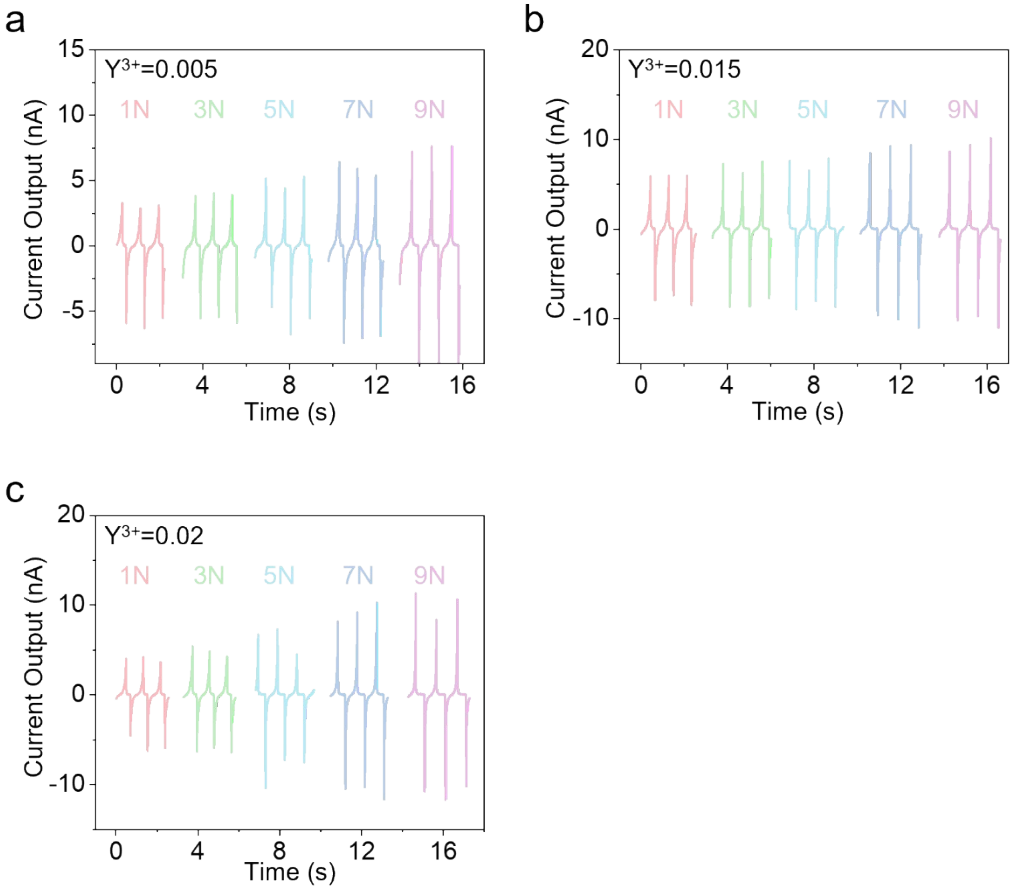

Figure S9. Current output of Y-ZnO with different doping concentrations under the forces ranging from 1 to 9 N. Force area, 9 cm^2.

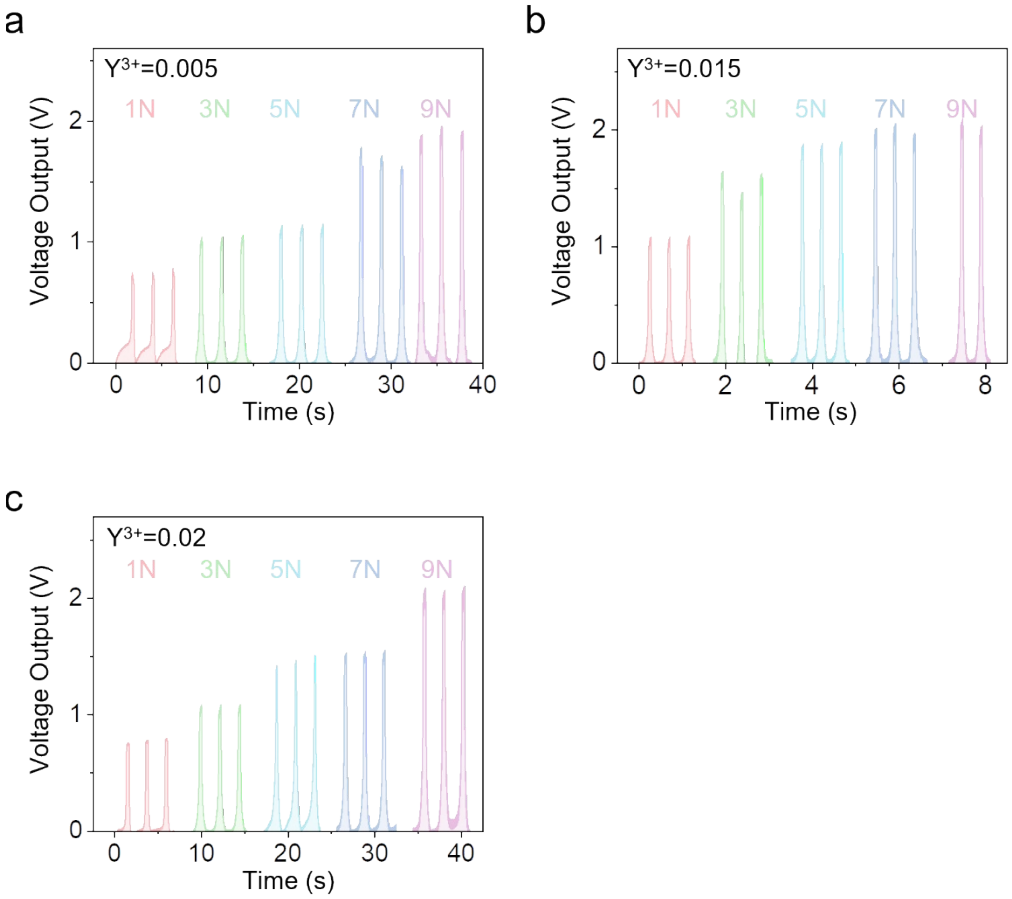

Figure S10. Voltage output of Y-ZnO with different doping concentrations under the forces ranging from 1 to 9 N. Force area, 9 cm^2.

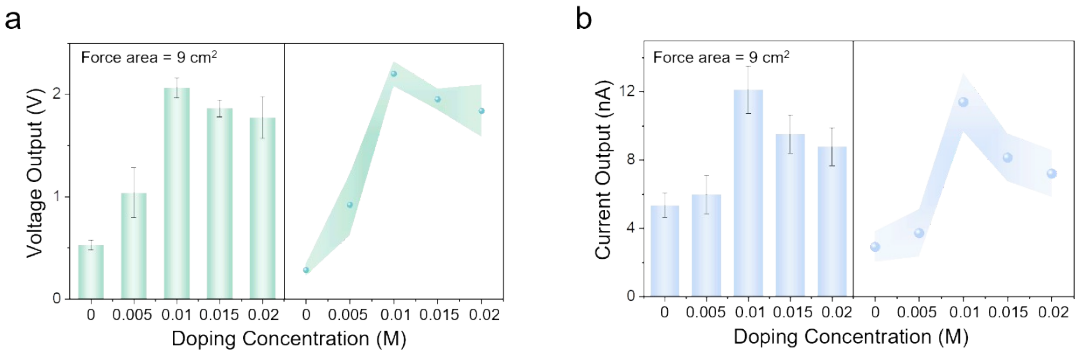

Figure S11. Piezoelectric outputs with error bars and confidence bands of ZnO with different doping concentrations under the force of 5 N. Force area, 9 cm^2.