Supporting Information for

## A Self-Powered Breath Analyzer Based on PANI/PVDF Piezo-Gas-

## **Sensing Arrays for Potential Diagnostics Application**

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## **Supplementary Figures**



Fig. S1 Schematic diagram of electrode configuration for current measurements



Fig. S2 *I-V* curves of the five PANI derivatives



Fig. S3 Long-term stability



Fig. S4 The relationship between current frequency and gasflow rate



**Fig. S5** *I-V* curve of PANI(SDS) sensing unit under 0, 300, and 600 ppm ethanol gasflow



Fig. S6 SEM image of PANI(NA) upon exposure to CH<sub>4</sub>



Fig. S7 Cross-view SEM images of PANI(NA) a before and b after exposed to NH4