

Supporting Information

Theoretical Study and Structural Optimization of a Flexible Piezoelectret-Based Pressure Sensor

Nan Wu ‡^a, Shuwen Chen ‡^a, Shizhe Lin^a, Wenbo Li^a, Zisheng Xu^a, Fang Yuan^a,

Liang Huang^a, Bin Hu^a and Jun Zhou^{a*}

Note S1

Parameters for PFA electret in calculation

Young's modulus 4×10^9 Pa

Poisson's ratio 0

Calculated *a* and *b* for Figure 2b and Figure 2c

	a	a×b
$l^2 = 1.5 \times 1.5 \text{ m}^2$ $d = 200 \mu\text{m}$	182 [Pa ⁻²]	$1.267 \times 10^{22} [\mu\text{m}/\text{Pa}]$
$l^2 = 2.5 \times 2.5 \text{ m}^2$ $d = 200 \mu\text{m}$	150 [Pa ⁻²]	$5.645 \times 10^{22} [\mu\text{m}/\text{Pa}]$
$l^2 = 3.5 \times 3.5 \text{ m}^2$ $d = 200 \mu\text{m}$	102 [Pa ⁻²]	$3.669 \times 10^{22} [\mu\text{m}/\text{Pa}]$
$l^2 = 1.5 \times 1.5 \text{ m}^2$ $d = 300 \mu\text{m}$	273 [Pa ⁻²]	$1.694 \times 10^{22} [\mu\text{m}/\text{Pa}]$
$l^2 = 1.5 \times 1.5 \text{ m}^2$ $d = 400 \mu\text{m}$	364 [Pa ⁻²]	$2.153 \times 10^{22} [\mu\text{m}/\text{Pa}]$

Supplementary Figures

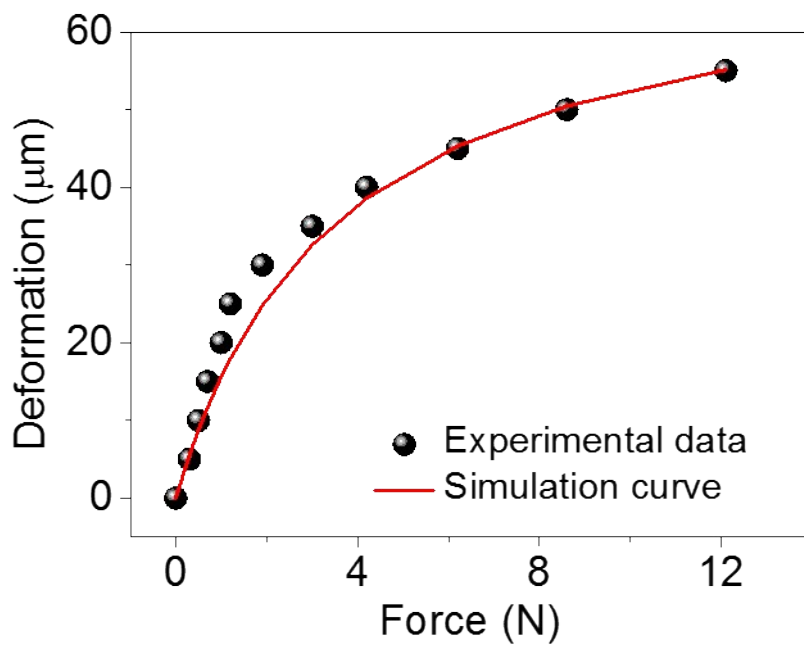


Figure S1 Experimental data and simulation curve for a typical FPPS. Here, a (the maximum deformation) is equal to 70 and b is equal to 0.28.

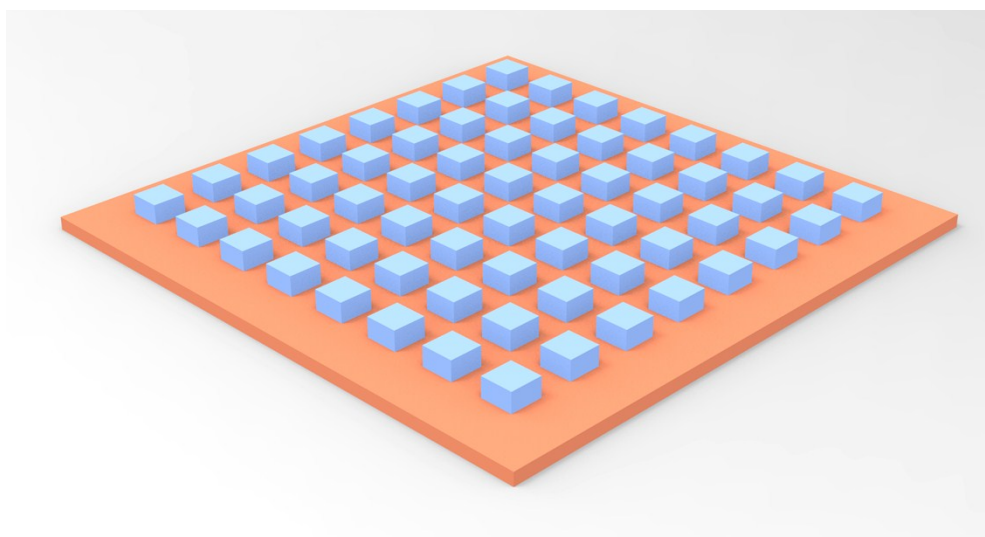


Figure S2 Schematic diagram of a PFA electret film with 8 \times 8 supporting array

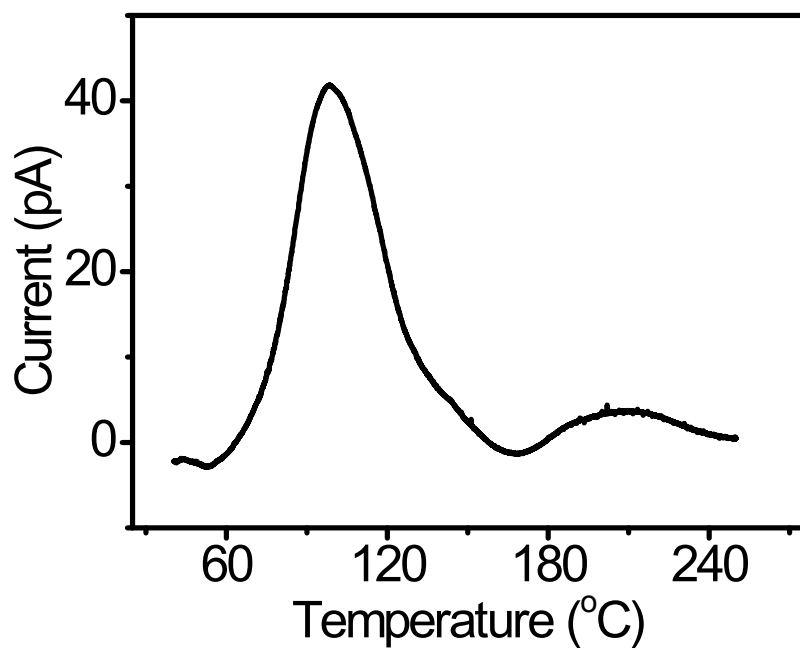


Figure S3 Thermally stimulated discharge spectrum for a corona-charged PFA electret film.