Electronic supplementary materials:

Fig. S1 The diagram of experimental setup.

Fig. S2 SEM images of the BCZT/PDMS composites with different DEP time: (a) 0 h, (b) 6 h, (c) 12 h, (d) 18 h, (e) 24 h and (f) 30 h; SEM images of the BCZT/PDMS composites **with different DEP time** after adjusting brightness and contrast : **(g)** 0 h, (h) 6 h, (i) 12 h, (j) 18 h, (k) 24 h and (l) 30 h; the optimal ellipses (red part) fitting to the regions of BCZT particles of the BCZT/PDMS composites images with different **DEP time: (m)** 0 h, (n) 6 h, (o) 12 h, (p) 18 h, (q) 24 h and (r) 30 h.

Fig. S3 (a) Poling electric field, **(b)** poling temperature, and (d) poling time dependence of the d_{33} value of BCZT/PDMS piezocomposites prepared by 24 h DEP time; (c) **Polarization–electric field (*P*–*E*) hysteresis loops for BCZT/PDMS piezocomposite prepared by 24 h** DEP measured **at different temperatures.**

Table S1. The fundamental electromechanical properties of the modeling the composites.

Table S2. Correspondence between feedback information and pressing position.

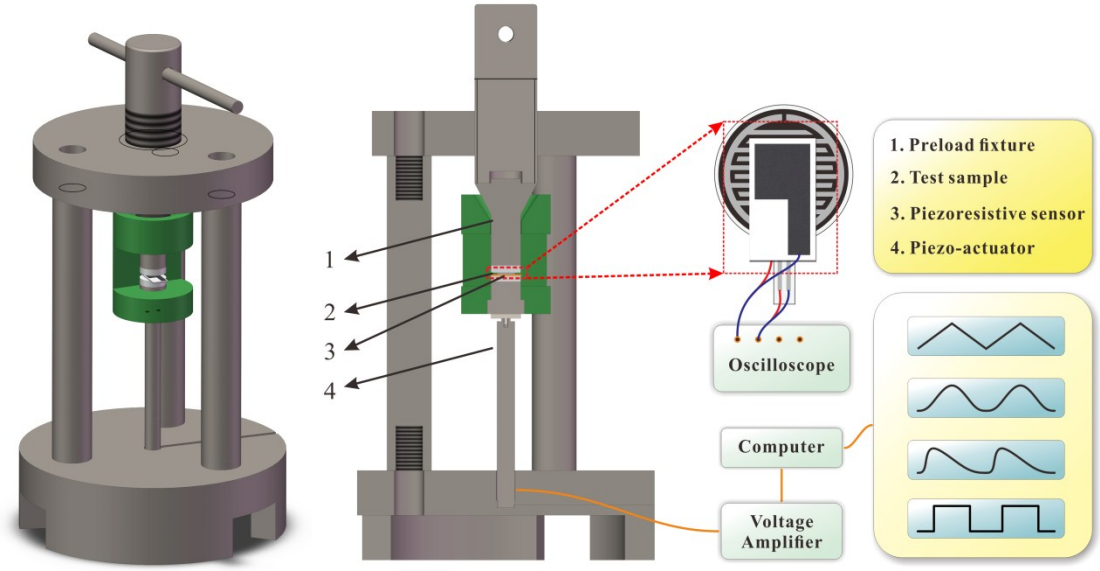
1
2
3
4
1. Preload fixture
2. Test sample
3. Piezoresistive sensor
4. Piezo-actuator
Oscilloscope
Computer
Voltage Amplifier

FIG. S1

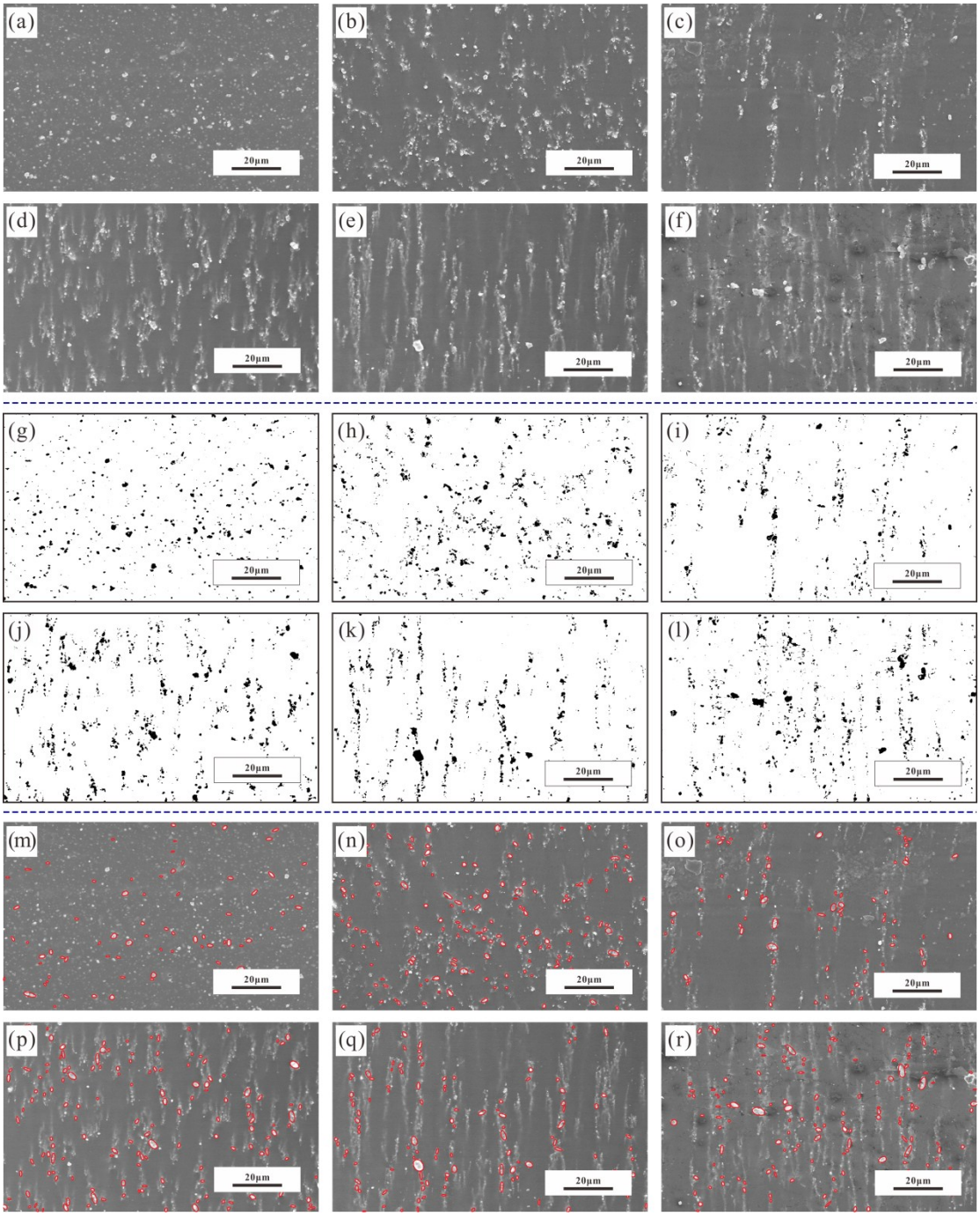

FIG. S2

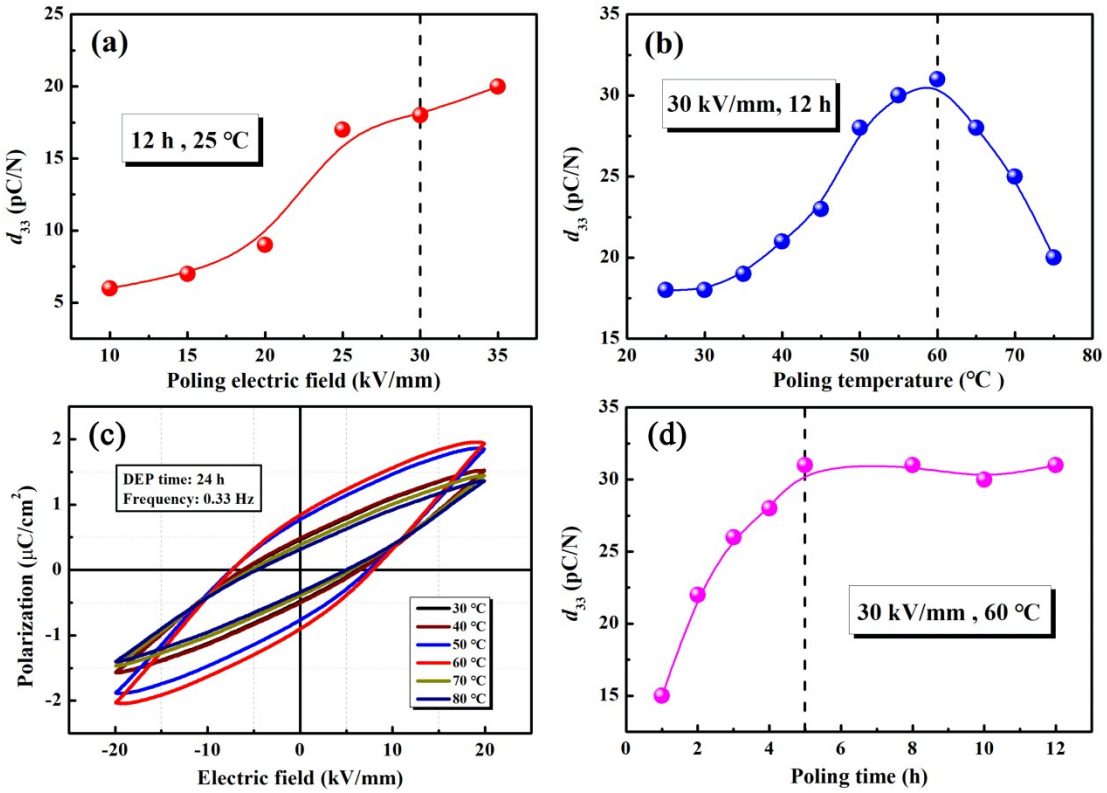

FIG. S3

Table S1. The fundamental electromechanical properties of the modeling the composites.

	Mechanical			**Piezoelectric**				
	Density (kg/m^3)	Young's modulus (MPa)	Poisson ratio	d_{31}	d_{33}	d_{15}	$\varepsilon_{11}/\varepsilon_0$	$\varepsilon_{33}/\varepsilon_0$
				pC/N				
BT	5700	1.93×10^5	0.231	78	190	260	1450	1700
PDMS	970	1.5	0.48	0	0	0	5.84	5.84

Table S2 Correspondence between feedback information and pressing position

Feedback	Pressed position	Feedback	Pressed position
000000	No press	010010	5
100100	1	001010	6
010100	2	100001	7
001100	3	010001	8
100010	4	001001	9