Supplementary information for

Electromechanical Instabilities of Thermoplastics: Theory and *In Situ* Observation

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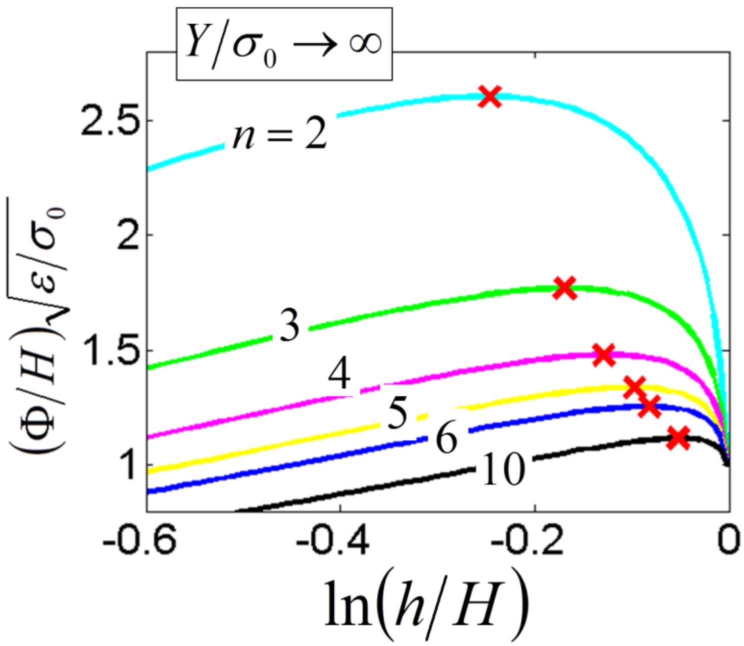

Fig. S1. The voltage vs. natural strain curves for unconstrained thermoplastics predicted by the theoretical model. The *pull-in* instability is indicated by crosses.

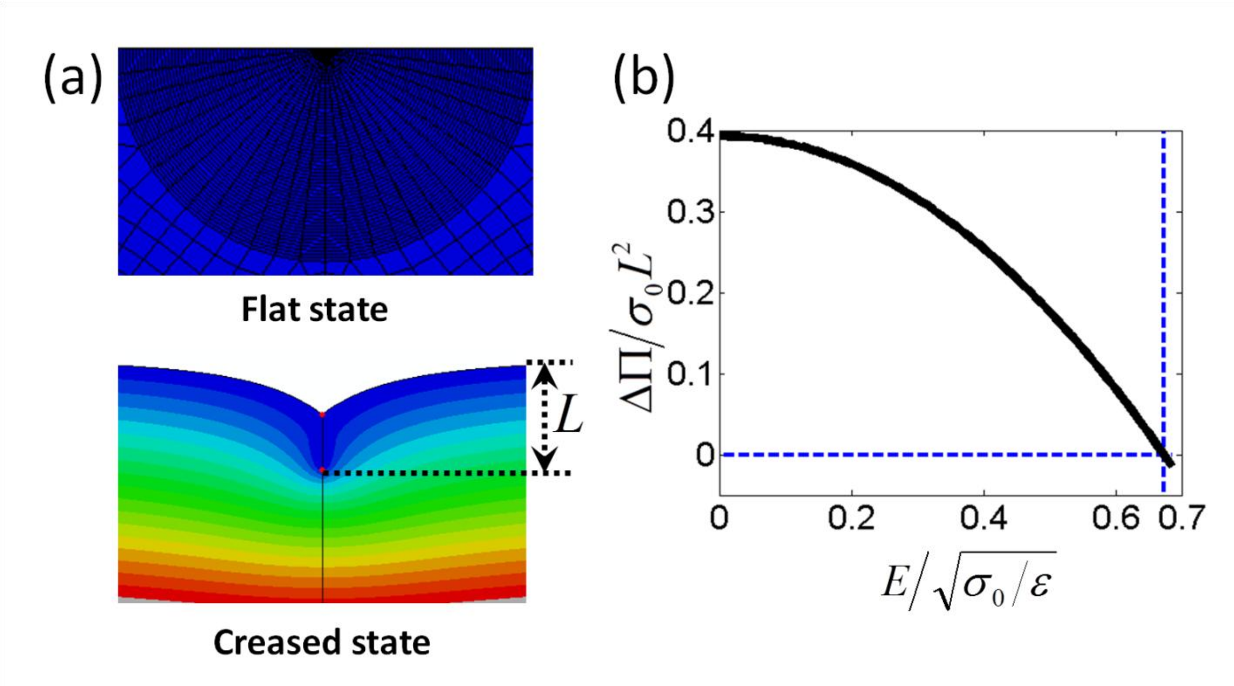

Fig. S2. (a) Equipotential contours in the thermoplastic at the flat and creased states. (b) The potential-energy difference between the flat and creased states as a function of the applied electric field.

Table I. Glass transition temperature (T_g) and melting temperature (T_m) of various thermoplastics.

	PTBA	Polystyrene	Parafilm	Polymethl Methacrylate
T_g (℃)	70	100	~50	105
T_m (℃)	190-200	240	~80	165

Table II. Mechanical parameters of PTBA at various temperatures by fitting experimental data in Fig. 3(a) to the Ramberg-Osgood model.

	Y (kPa)	σ_0 (kPa)	n
70℃	404	14.9	2.04
80℃	324	12.3	2.74
90℃	242	9.80	2.89
100℃	156	7.43	2.96
120℃	59.5	5.23	4.43
150℃	25.1	2.29	5.79

Video S1: *In situ* observation of the *creasing-cratering* instability in PTBA at 100 ^{o}C subject to a DC voltage with a ramping rate of $0.1kVs^{-1}$.