Tuning Dielectric and Energy Storage Properties of Polystyrene Based Polymer Dielectric by Manipulating Dipoles and Their Polarizing Behavior

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**Fig. S1.** D–E loops of PSt at elevated electric fields under varied temperature of 20 °C (A), 50 °C (B), 70 °C (C) and 90 °C (D).
Fig. S2. Dielectric constant (A-F) and dielectric loss (G-L) as a function of temperature at different frequencies for P(St-MMA)s and PMMA with varied ratios of St/MMA: MS-1 (A, G), MS-2 (B, H), MS-3 (C, I), MS-4 (D, J), MS-5 (E, K) and PMMA (F, L).
Fig. S3. D–E loops of MS-1 (A), MS-2 (B), MS-3 (C), MS-4 (D), MS-5 (E) and PMMA (F) at elevated electric fields @20 °C.

Fig. S4. Weibull distribution of the breakdown electric field of PMMA, PSt and P(St-MMA)s with varied ratios of St/MMA at 20 °C (A) 50 °C (B), 70 °C (C) and 90 °C (D).
**Fig. S5.** Shape parameter as functions of Weibull breakdown strength of PMMA, PSt and P(St-MMA)s with varied ratios of St/MMA under different temperature.

**Fig. S6.** Conduction current density@20°C of the PMMA, PSt and P(St-MMA)s with varied ratios of St/MMA films at varied applied electric fields.