

Supporting Information

High comprehensive properties of colorless transparent polyimide films derived from fluorine-containing and ether-containing dianhydride

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Table S1 XRD data and Free Volume Fraction of CPI Films

Number	2 θ (°)	<i>d</i> (Å)	FFV
CPI-1	20.88	4.2494	0.2158
CPI-2	20.79	4.2682	0.2353
CPI-3	21.02	4.2215	0.2339
CPI-4	18.53	4.7829	0.2480
CPI-5	18.74	4.7290	0.2576
CPI-6	16.36	5.4126	0.2552

Table S2 The Molecular Orbital Energies of HOMO, LUMO, and energy band gaps of CPI films.

Number	BPADA	6FDA	6FDA loading (%)	$E_{\text{HUMO}}(\text{eV})$	$E_{\text{LUMO}}(\text{eV})$	$E_{\text{GAP}}(\text{eV})$
PI-1	3	0	0	-5.7786	-2.3155	3.4631
PI-2	2	1	33.33	-6.3762	-2.8565	3.5197
PI-3	1	2	66.67	-6.5209	-2.8549	3.6660
PI-4	0	3	100	-6.8001	-2.9049	3.8952

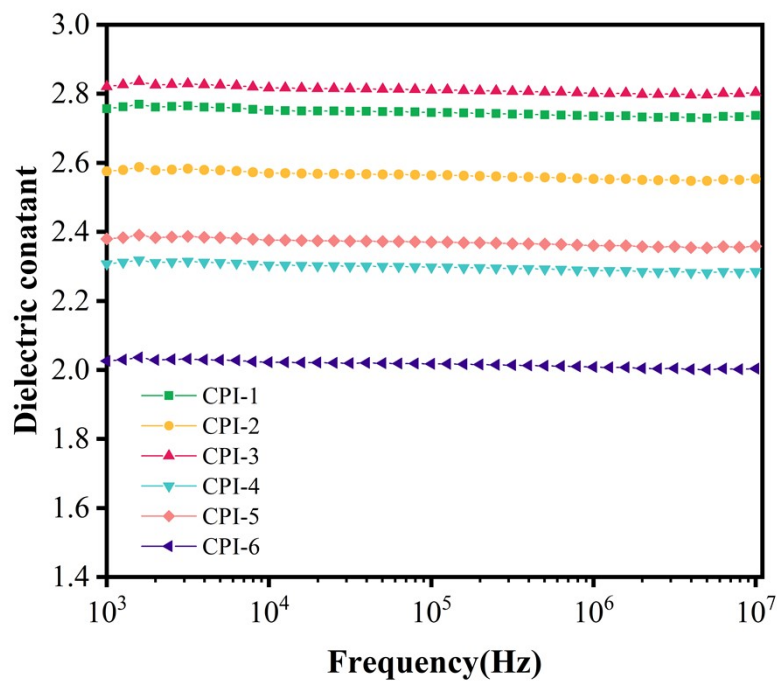


Fig. S1 Dielectric constants of CPI films from 1000 Hz to 10 MHz