

Supporting Information

Dynamic Swelling of Tunable Full-Color Block Copolymer Photonic Gels via Clicking Counterions

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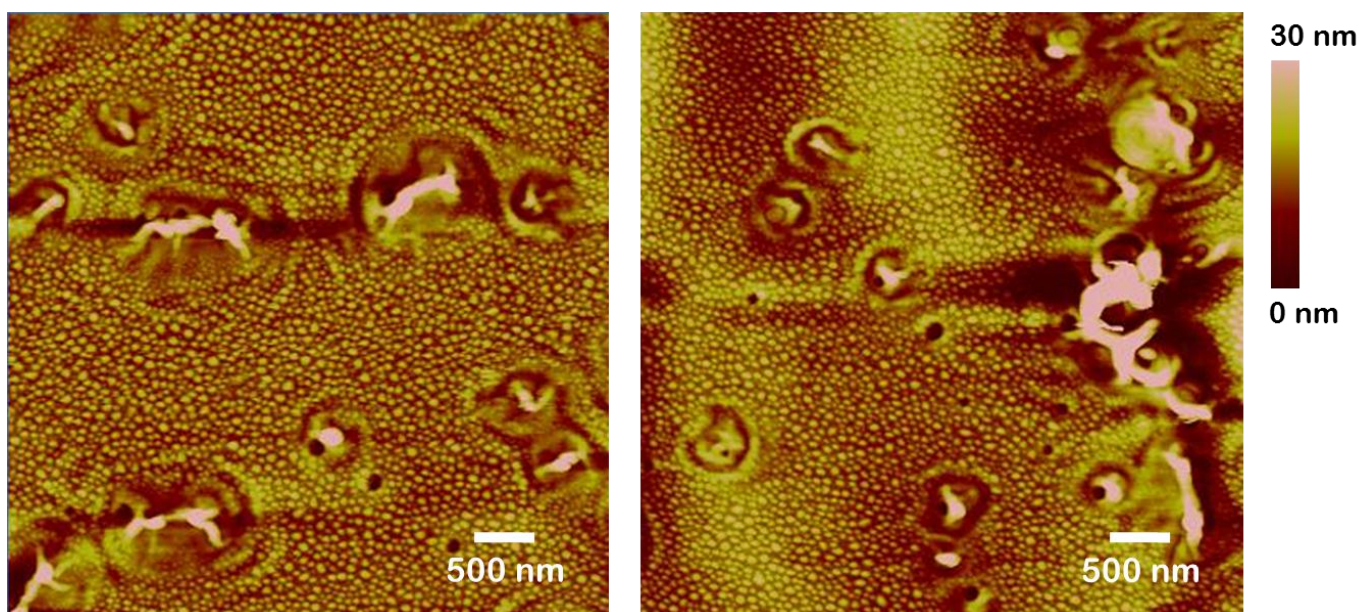


Figure S1. AFM height image of the PS-*b*-QP2VP photonic gels quaternized for 36 h.

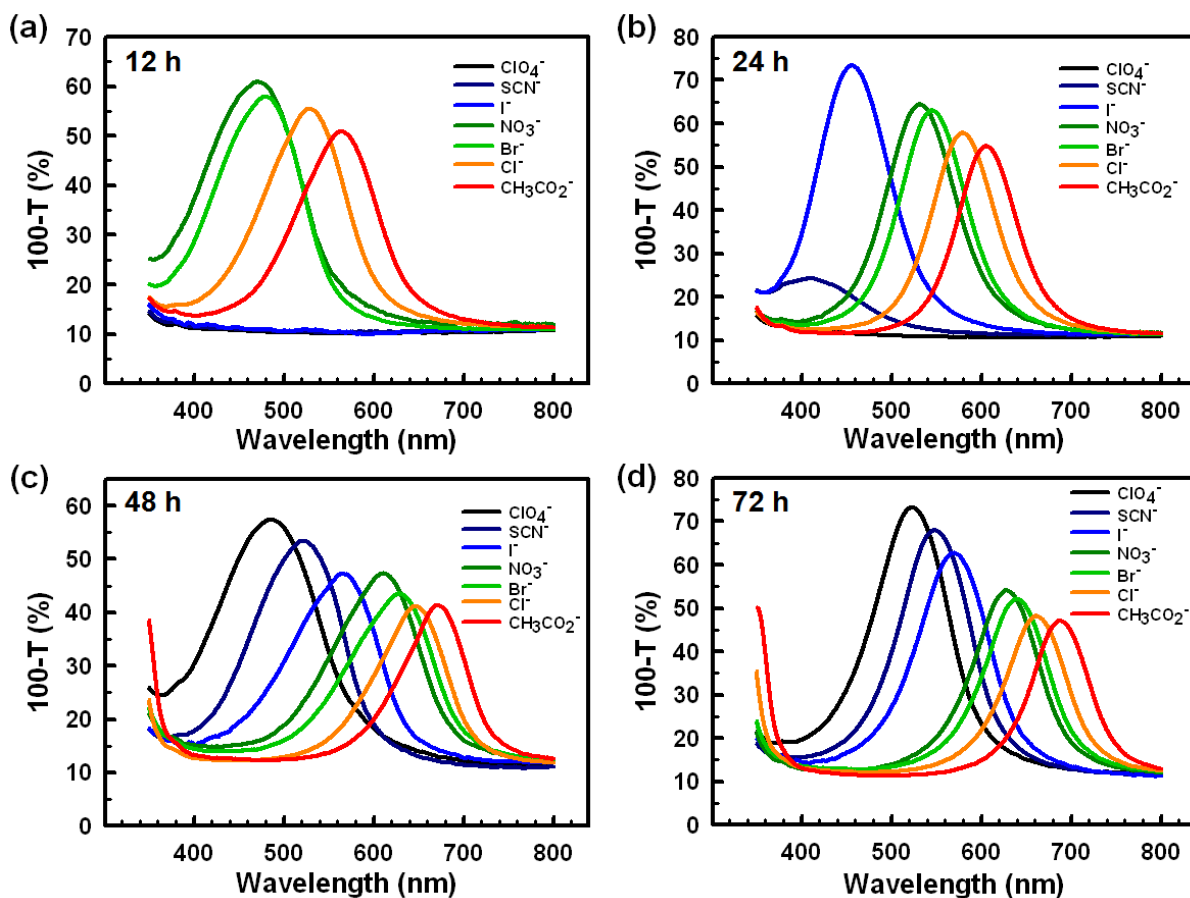


Figure S2. Reflectivity spectra of the PS-*b*-QP2VP photonic gels quaternized for (a) 12 h, (b) 24 h, (c) 48 h, and (d) 72 h as a result of direct ion-exchange.

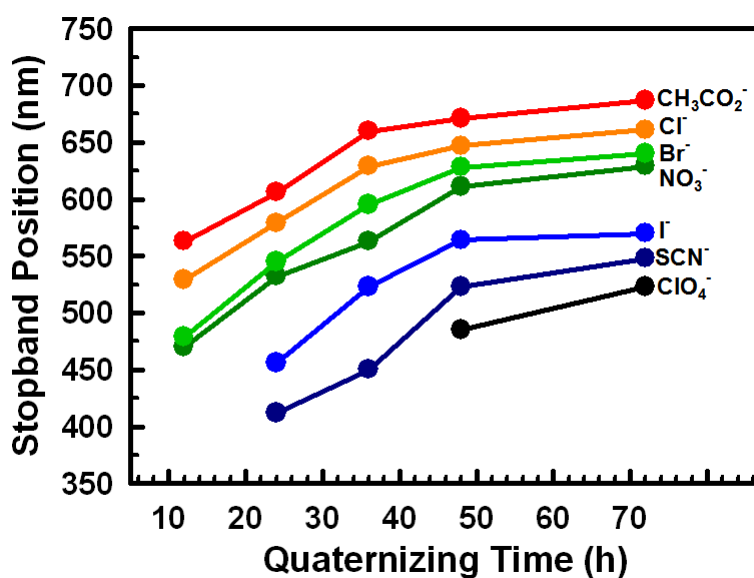


Figure S3. Tunability of photonic stop band position as a function of quaternizing time.

Table S1. Swelling degree of the QP2VP domains by TMM calculation

	12h		24h		36h		48h		72h	
	T_{QP2VP} (nm)	ratio%	T_{QP2VP} (nm)	ratio%	T_{QP2VP} (nm)	ratio%	T_{QP2VP} (nm)	ratio%	T_{QP2VP} (nm)	ratio%
ClO_4^-	-	-	-	-	-	-	148	617.5	163	677.1
SCN^-	-	-	121	505.0	135	563.8	163	677.1	172	715.4
I^-	-	-	136	568.2	163	677.1	178	740.0	180	749.2
NO_3^-	143	594.2	165	687.3	178	739.6	195	812.9	202	842.1
Br^-	146	608.3	170	709.2	190	789.4	201	838.8	206	856.3
Cl^-	165	685.8	182	759.9	202	842.1	209	868.8	214	890.4
CH_3CO_2^-	177	738.8	192	800.0	214	890.4	217	905.6	223	930.2

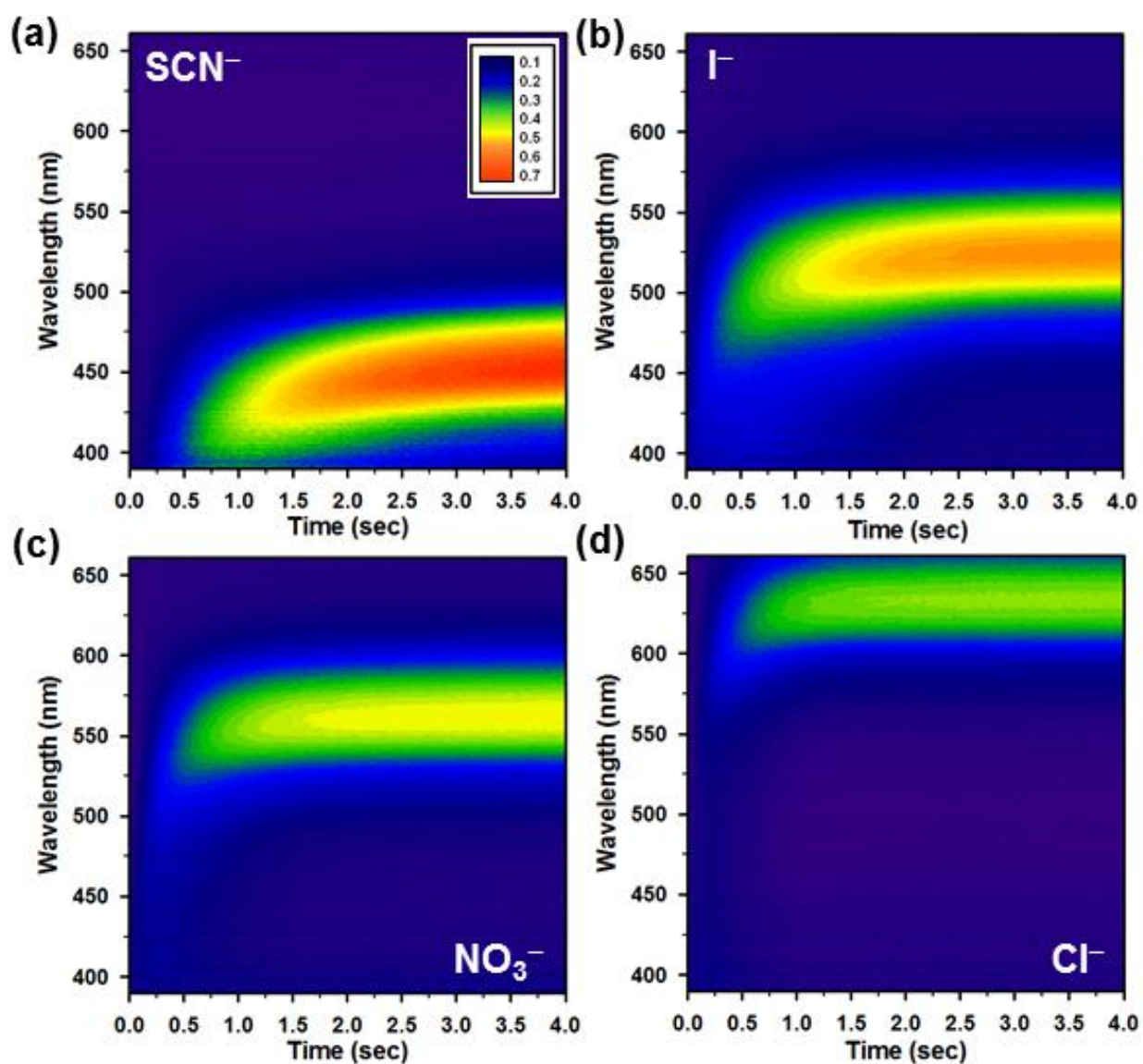


Figure S4. *In-situ* swelling behavior of photonic lamellar gels with various counteranions; (a) SCN^- , (b) I^- , (c) NO_3^- , and (d) Cl^- ions.

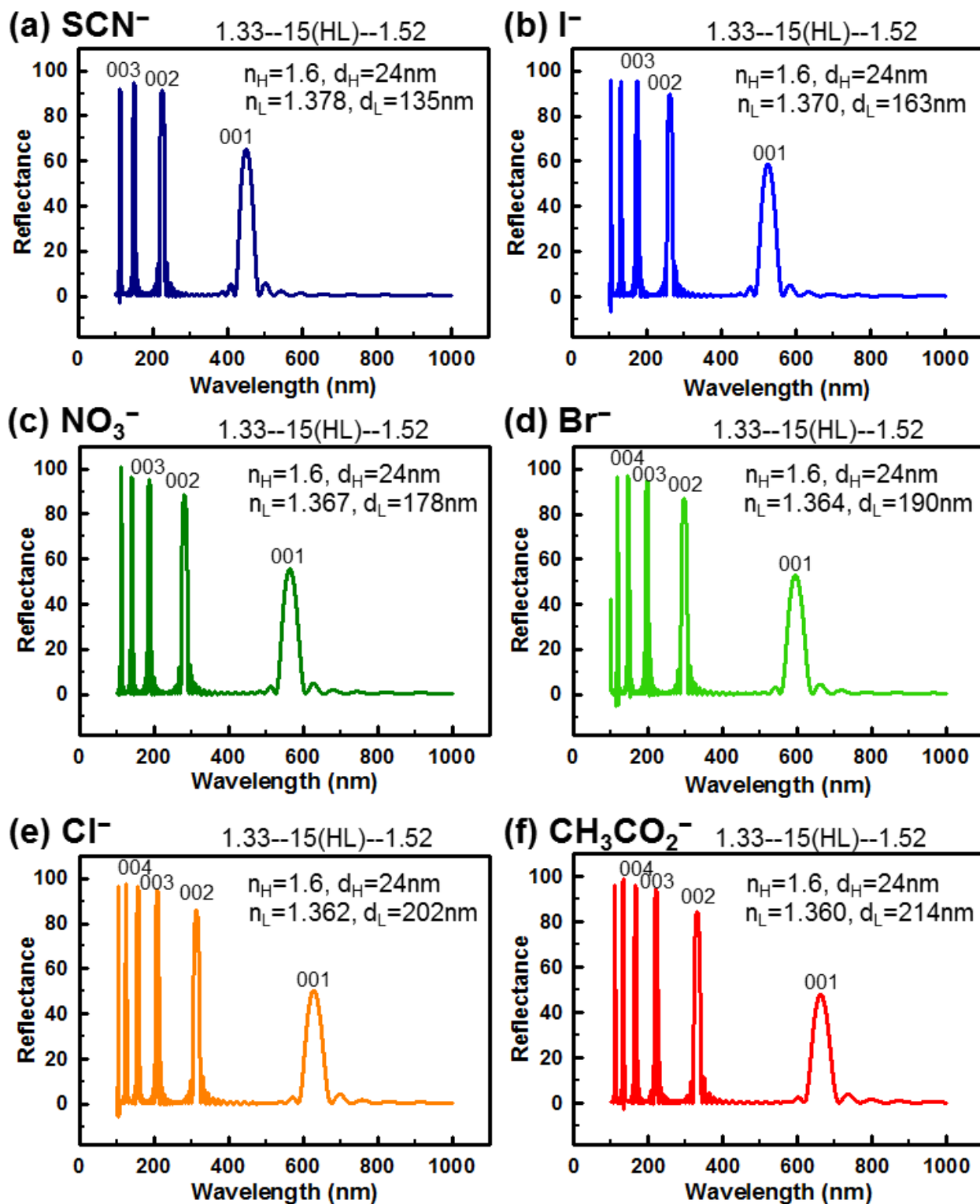


Figure S5. Calculated reflectance spectra using the transfer matrix model. The refractive index of QP2VP was scaled to a simple rule of mixtures based on water content of the QP2VP layers. The thickness of QP2VP was also scaled as a function of a fraction of water based on the assumption of uniaxial expansion of layers by swelling. The PS layers remain fixed during swelling.