

Supplementary Material

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Table S1. Parameters and R² values of two-step linear plots of IPD model.

Adsorbent	C ₀	1st Step			2nd Step		
		k _{d1}	C ₁	R ²	k _{d2}	C ₂	R ²
PVPA-BMEP (5%)	100	6.29	146	0.893	0.017	184	0.994
	500	34.5	683	0.972	0.351	894	0.994
	1500	148	1490	0.983	11.0	2424	0.823
PVPA-BMEP (10%)	100	8.66	144	0.996	0.034	192	0.994
	500	38.5	692	0.981	0.351	929	0.994
	1500	147	1603	0.937	1.05	2659	0.994
PVPA-BMEP (20%)	100	12.7	124	0.999	0.198	194	0.994
	500	128	239	0.973	0.499	951	0.972
	1500	428	-78.5	0.994	5.99	2690	0.872
PVPA-BMEP (40%)	100	20.6	79.8	0.979	0.143	195	0.854
	500	199	-150	0.995	0.204	963	0.924
	1500	639	-1,276	0.995	1.60	2784	0.987

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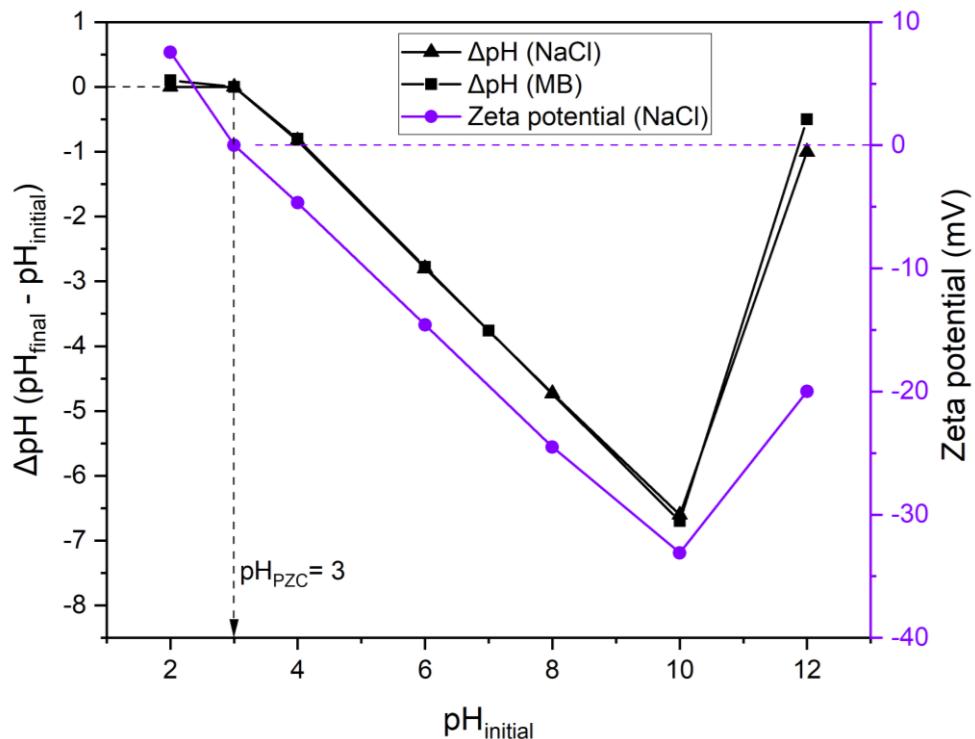


Figure S1. Zeta potential and ΔpH plots of PVPA-BMEP (40%) hydrogel at different $\text{pH}_{\text{initial}}$ values.

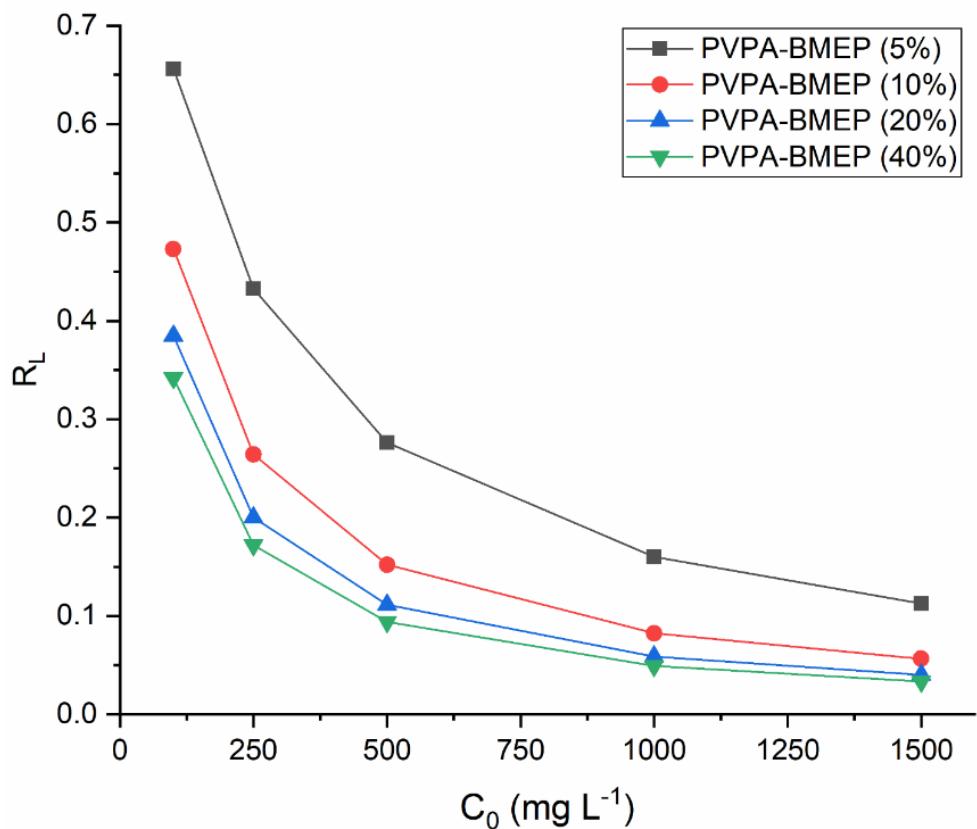


Figure S2. The change in R_L value of each hydrogel within the studied C_0 range.