Electronic Supplementary Information

Comparison of hyper-cross-linked polystyrene/polyacryldiethylenetriamine (HCP/PADETA) interpenetrating polymer networks (IPNs) with hyper-cross-linked polystyrene (HCP): Structure, adsorption and separation properties

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Table S1 Correlated parameters for the equilibrium data of salicylic acid adsorption on HCP/PADETA IPNs.

	Langmuir model			Freundlich model		
	K_L /(L/mg)	q_m /(mg/g)	R^2	K_F /((mg/g)(L/mg)$^{1/n}$)	n	R^2
298 K	0.1471	373.6	0.9861	156.3	6.623	0.9968
308 K	0.0749	425.6	0.9866	139.6	5.315	0.9974
318 K	0.0654	454.8	0.9887	135.2	4.878	0.9985

Table S2 Correlative parameters of kinetic adsorption data of salicylic acid on HCP and HCP/PADETA IPNs from aqueous solution according to the pseudo-first-order and pseudo-second-order rate equations.

Adsorbent	T (K)	C_0 (mg/L)	Pseudo-first-order rate equation			Pseudo-second-order rate equation		
			k_1 (min^{-1})	q_e (mg/g)	R^2	k_2 (g/(mg·min))	q_e (mg/g)	R^2
HCP	293	604.3	0.0299	116.8	0.9678	0.00031	130.8	0.9926
HCP/PADETA IPNs	293	604.3	0.1342	142.3	0.9899	0.00129	155.0	0.9961
	303	604.3	0.1525	149.9	0.9831	0.00137	163.9	0.9975
	313	604.3	0.1970	151.0	0.9928	0.00184	163.6	0.9943
	313	804.3	0.1122	182.7	0.9810	0.00080	201.1	0.9988
	313	1003.8	0.0785	209.7	0.9835	0.00048	232.5	0.9941

Fig. S1 SEM images of (a) CMPS, (b) CMPS/PMA IPNs, (c) HCP/PMA IPNs and (d) HCP/PADETA IPNs, respectively.

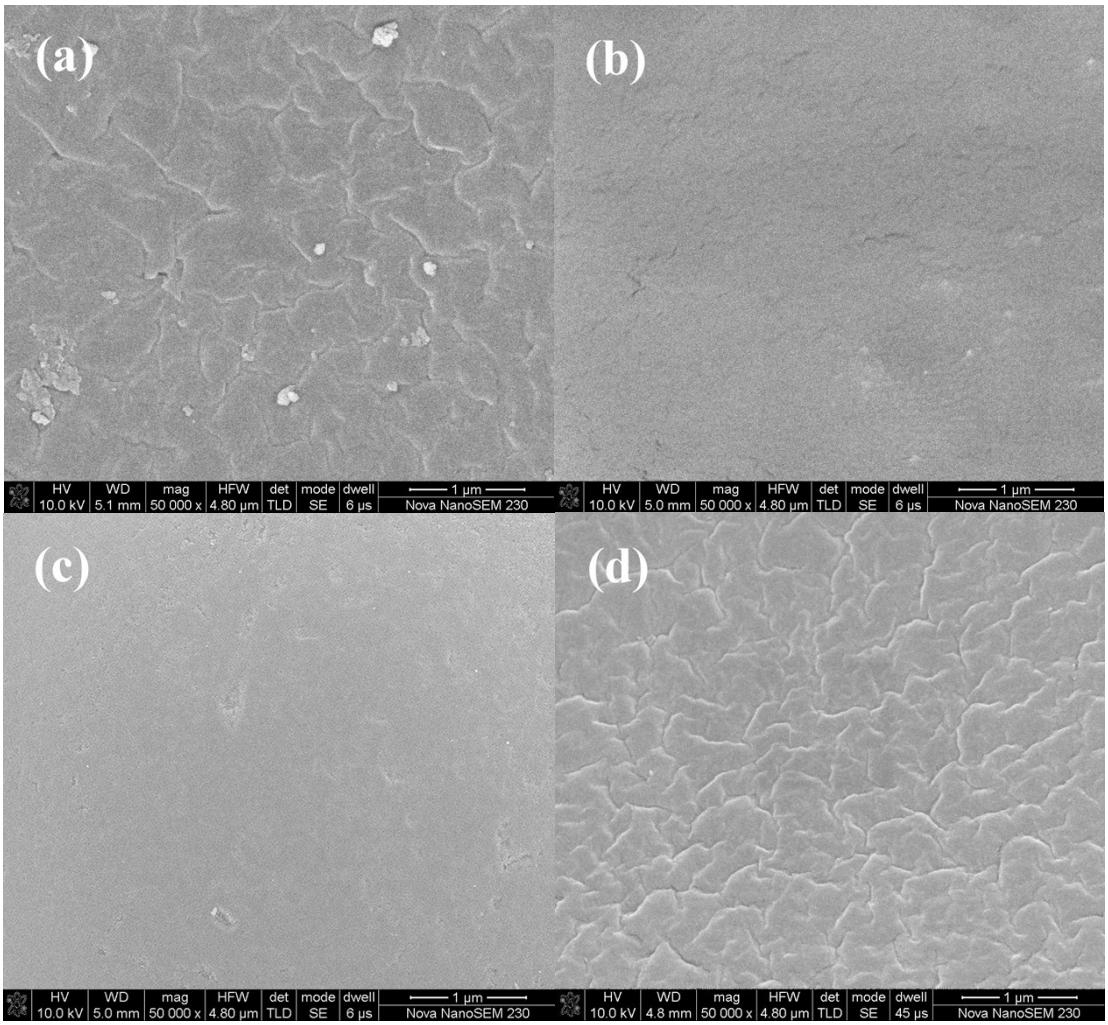

Fig. S2 Equilibrium isotherms of salicylic acid on HCP/PADETA IPNs from aqueous solution with the temperature at 298, 308 and 318 K, respectively.

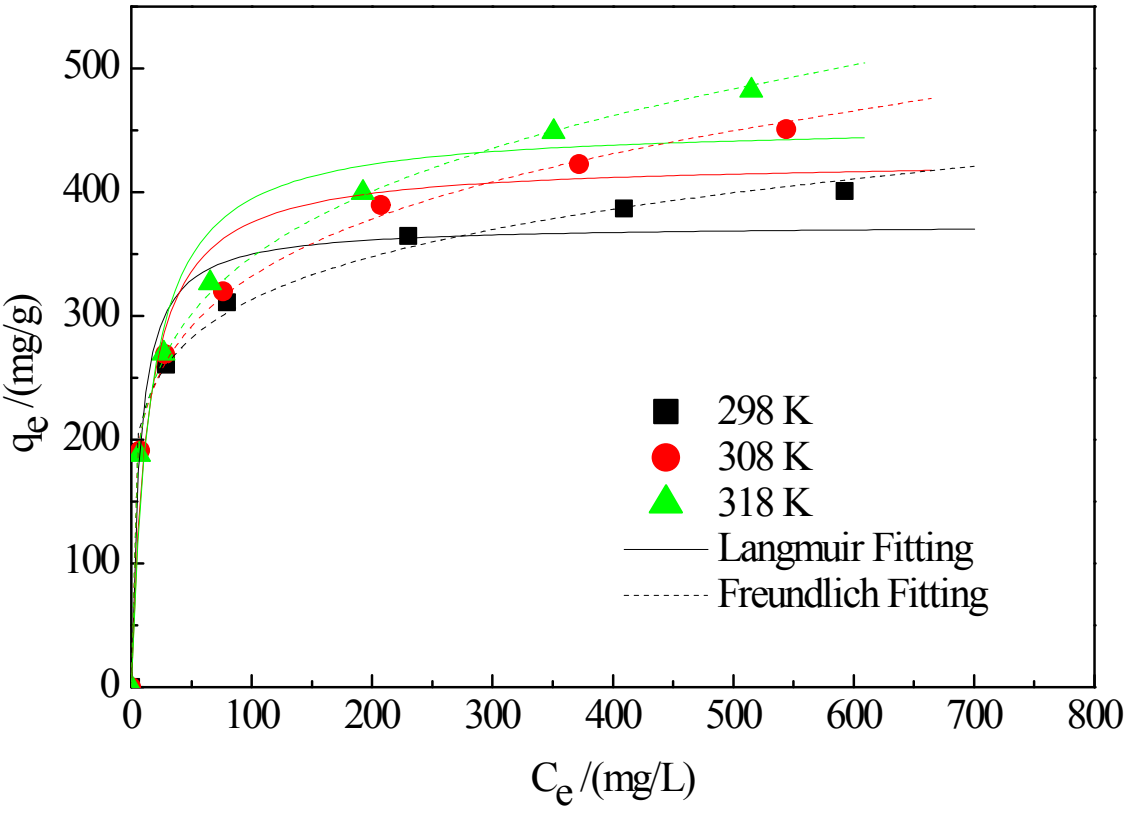

Fig. S3 Correlative parameters of kinetic adsorption data of salicylic acid on HCP and HCP/PADETA IPNs from aqueous solution (The pseudo-first-order and pseudo-second-order rate equations are been applied for the simulation of the experimental kinetic data).

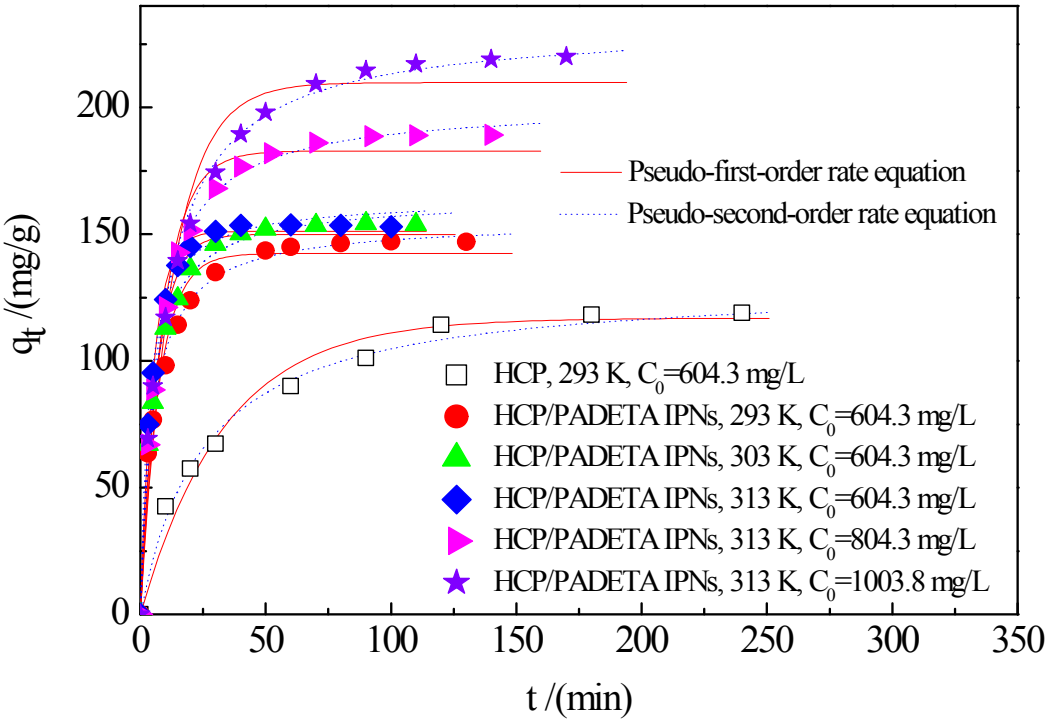

Fig. S4 Desorption efficiency of salicylic acid from the resin colume by different desorption solvents;

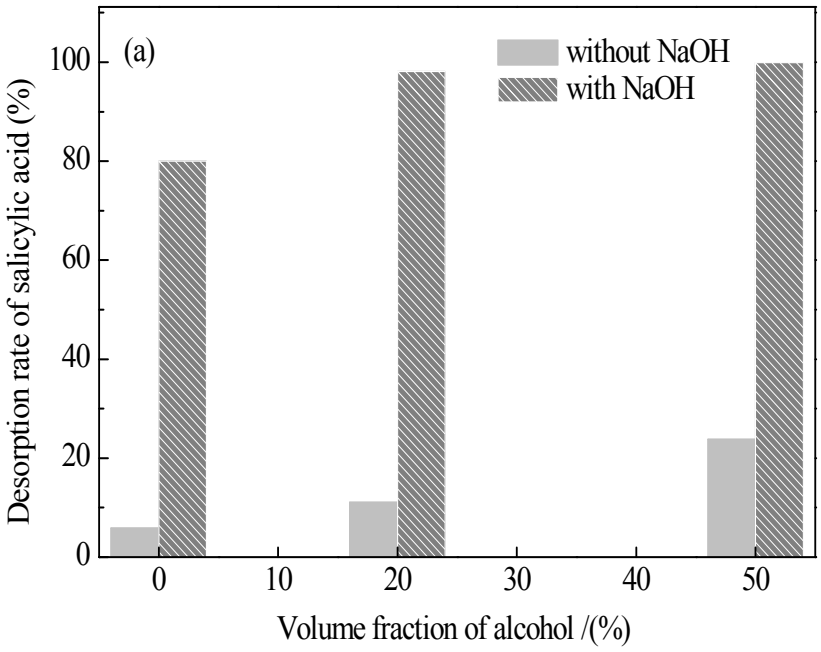

Fig. S5 Adsorption-desorption capacity of HCP/PADETA IPNs using a mixed solution of 0.01 mol/L of NaOH (w/v) and 20% of ethanol (v/v) as the desorption process for five cycles.