

Supporting Information

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Table S1. Interaction characteristics of 14-4-14 with NaCMC-2 in aqueous and aqueous-IP medium obtained from conductometry and tensiometry methods at 298K

%of IP	[NaCMC-2]/ g%	Conductometry		Surface Tension			α_1	α_2	$-\Delta G_m^0$ kJ mol ⁻¹
		c_s (mM)	c_f (mM)	c_{ac} (mM)	c_s (mM)	c_f (mM)			
0	0.005	0.065	0.220	0.026	0.062	0.218	1.24	0.53	59.8
	0.0075	0.092	0.262	0.027	0.063	0.255	1.24	0.58	55.9
	0.01	0.101	0.284	0.043	0.110	0.277	1.25	0.60	54.3
5	0.005	0.069	0.269	0.030	0.066	0.266	1.28	0.57	56.2
	0.0075	0.071	0.279	0.030	0.075	0.285	1.29	0.59	54.9
	0.01	0.119	0.360	0.033	0.115	0.323	1.34	0.63	51.3
7	0.005	0.079	0.292	0.031	0.076	0.298	1.37	0.62	52.8
	0.0075	0.116	0.324	0.040	0.095	0.317	1.40	0.65	50.6
	0.01	0.123	0.360	0.046	0.096	0.350	1.44	0.68	48.3
10	0.005	0.082	0.320	0.036	0.088	0.314	1.38	0.63	51.7
	0.0075	0.116	0.355	0.041	0.100	0.411	1.42	0.67	48.9
	0.01	0.130	0.410	0.054	0.112	0.442	1.52	0.70	46.6

Table S2. Various interfacial parameters ($\Gamma_{\max}^{C_f}$, $A_{\min}^{C_f}$, Π_{C_f} and $\Delta G_{ad(C_f)}^0$) of 14-4-14 with

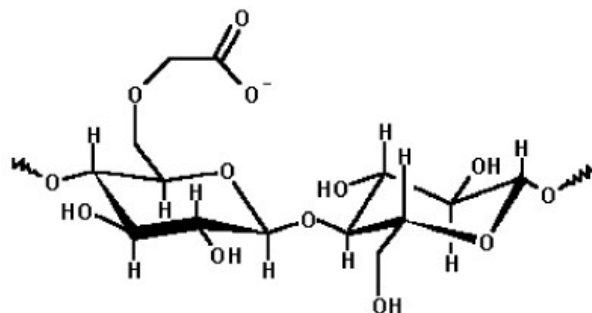
NaCMC-2 in aqueous and aqueous-IP medium at 298 K

% of IP	[NaCMC-2]/ g%	$10^6 \Gamma_{\max}^{C_f}$ mol m ⁻²	$A_{\min}^{C_f}$ nm ² molecule ⁻¹	Π_{C_f} mN m ⁻¹	$-\Delta G_{ad(C_f)}^0$ kJ mol ⁻¹
0	0.005	0.98	1.69	37.4	97.9
	0.0075	0.96	1.73	33.6	90.9
	0.01	0.94	1.77	35.8	92.4
5	0.005	0.96	1.73	17.1	74.0
	0.0075	0.93	1.79	17.6	73.8
	0.01	0.92	1.80	16.8	69.6
7	0.005	0.92	1.80	13.9	67.9
	0.0075	0.90	1.84	14.4	64.1
	0.01	0.89	1.87	13.2	63.1
10	0.005	0.90	1.84	8.5	61.1
	0.0075	0.89	1.87	8.8	58.8
	0.01	0.87	1.91	9.5	57.5

Table S3. Hydrodynamic diameter (D_h) and polydispersity index (PDI) for GS-NaCMC interacted complex in water and IP-water media at 298 K

% of IP	Hydrodynamic diameter (D_h) / nm (PDI)			
	NaCMC-1		NaCMC-2	
	[GS] = 0	[GS] = cac	[GS] = 0	[GS] = cac
0	349	141.3	561.9	92.9, 725.5
	(0.312)	(0.614)	(0.492)	(0.500)
5	141.3	85.0, 599.5	101.4, 316.4	76.5, 515.4
	(0.338)	(0.570)	(0.584)	(0.340)
7	108.7	82.8, 476.8	84.0	65.5, 360.2
	(0.343)	(0.478)	(0.277)	(0.508)
10	104.9	80.3, 543.9	69.8	61.3, 306.8
	(0.303)	(0.739)	(0.362)	(0.521)

The PDI values are in the parenthesis.



Scheme 1. Structure of Sodium Carboxymethyl cellulose

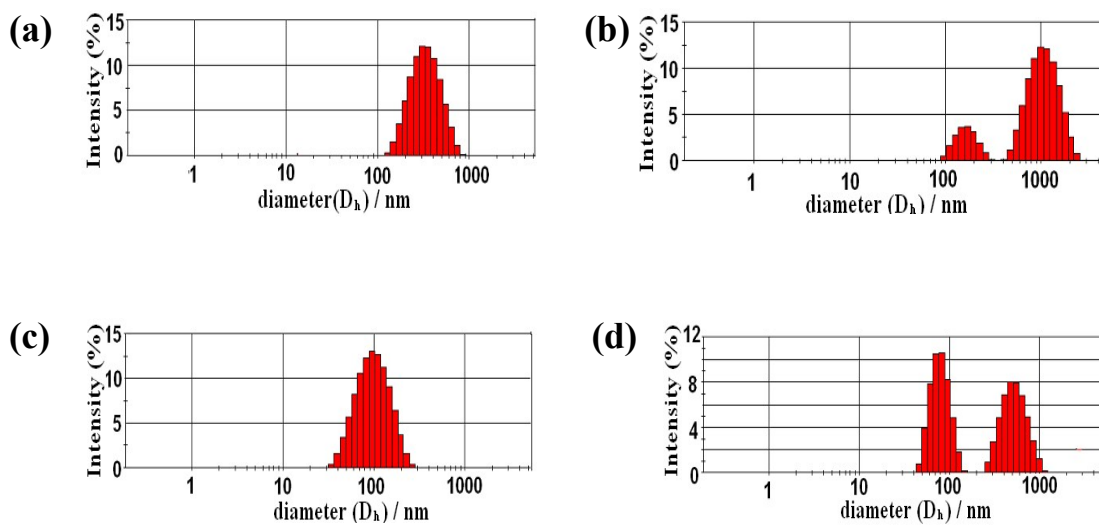


Figure S1. Particle size distribution of (a) NaCMC-1 in water, (b) 0.0075 g% NaCMC-GS interacted complex in water at cac, (c) NaCMC-1 in 10 % IP, (d) 0.0075 g% NaCMC-GS interacted complex in 10% IP at cac. In all cases, [NaCMC-1]=0.0075 g%.

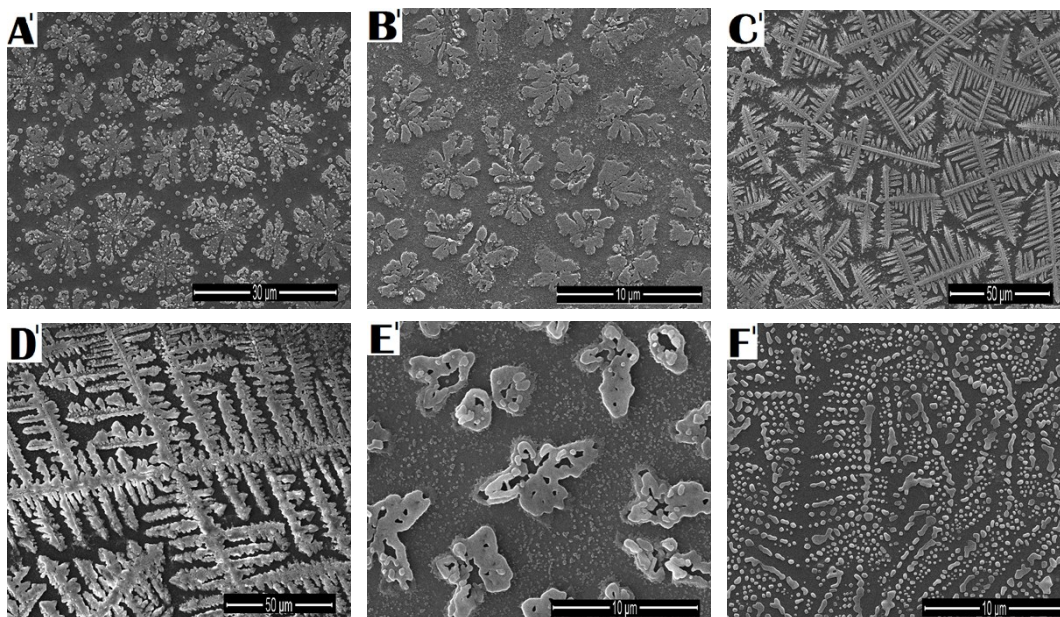


Figure S2. (A) Pure NaCMC-2 (0.0075 g %) in water; (B) interaction with 14-4-14 at cac; (C) at C_S ; (D) at C_f ; (E) Pure NaCMC-2 (0.0075 g %) in 10 % IP; (F) interaction with 14-4-14 in 10 % IP at C_f .