Supporting Information

Hydrogen Bond-Assisted Supramolecular Assembly of Doubly Discotic Supermolecules Based on Porphyrin and Triphenylene

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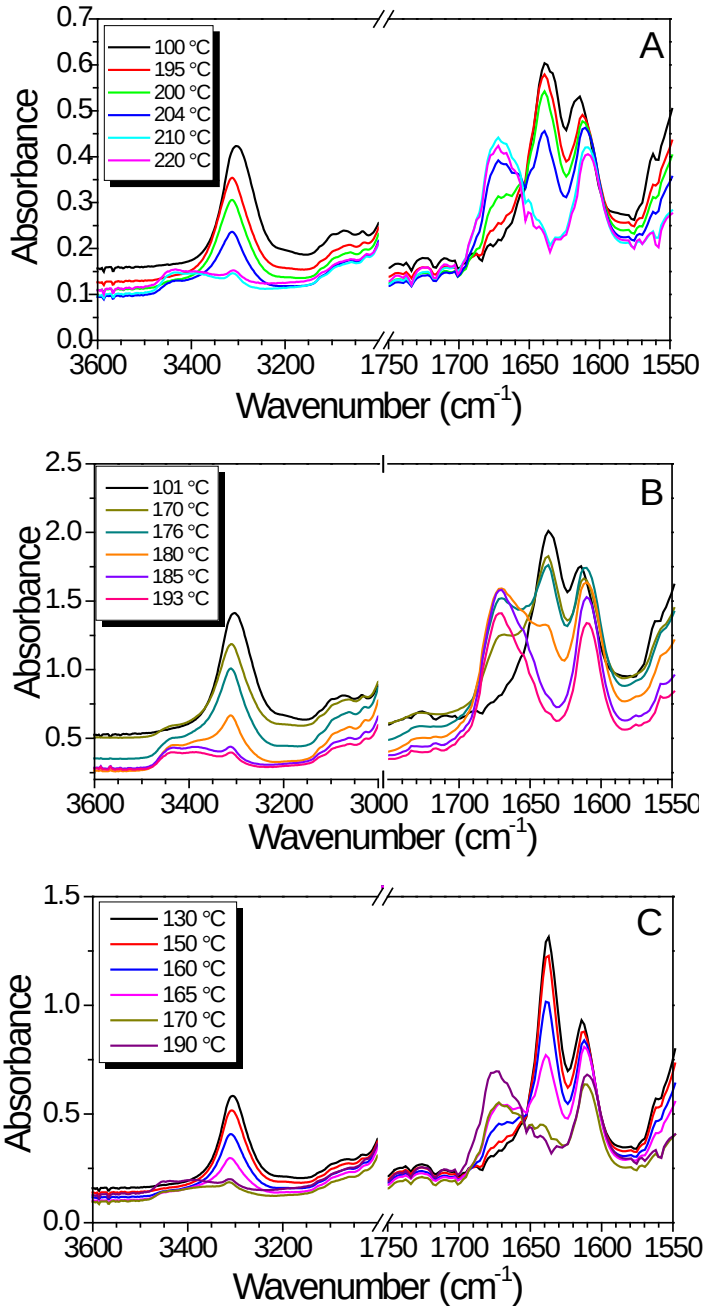

Figure S1. FTIR spectra for sample (A) **1**, (B) **2** and (C) **4** at different temperatures.

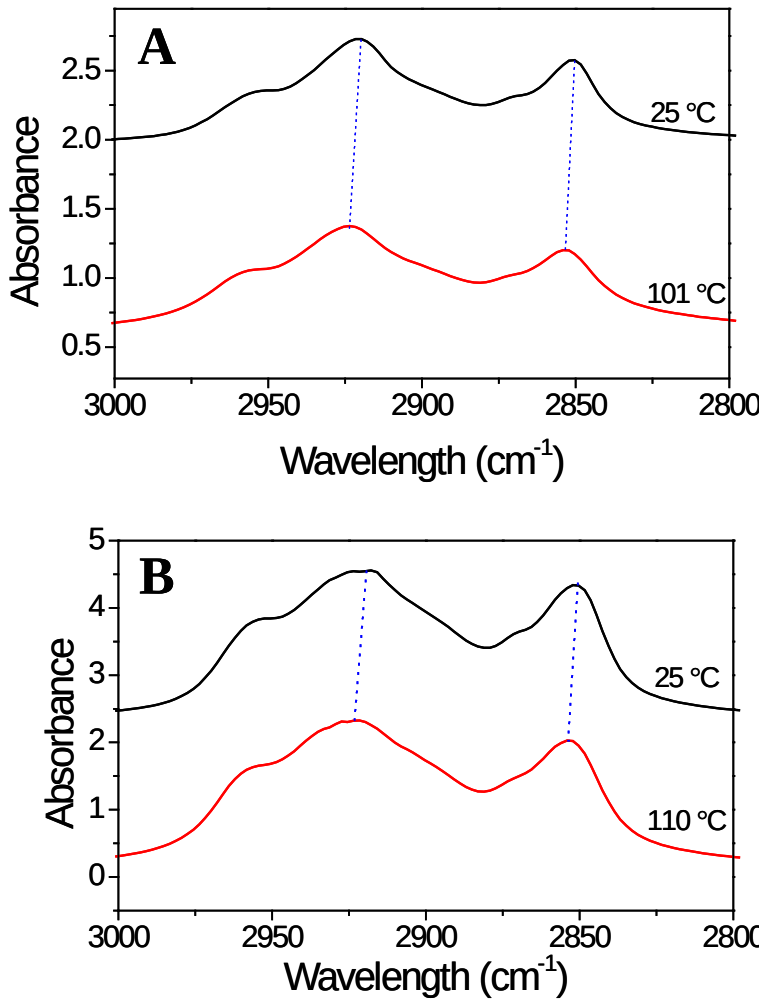

Figure S2. FTIR spectra for (A) the sample **3** at 25 and 101 °C and (B) the sample **4** at 25 and 110 °C, respectively.

Table S1. Observed and Calculated Spacings for Different Reflections for Sample **1**. The orthorhombic unit cell dimensions are a = 4.82 nm, b = 3.50 nm, and c = 0.49 nm.

hk0	(100)	(200)	(020)	(300)	(220)	(130)	(230)	(330)	(240)	(530)	(150)
Obs. (nm)	4.82	2.42	1.85	1.61	1.385	1.084	1.042	0.954	0.817	0.734	0.688
Calc. (nm)	4.82	2.41	1.75	1.607	1.416	1.134	1.05	0.944	0.822	0.743	0.693
hk0	(160)	(360)	(170)	(470)	(380)	(001)	(221)	(241)	Tp		
Obs. (nm)	0.590	0.536	0.494	0.466	0.422	0.490	0.461	0.426	0.350		
Calc. (nm)	0.579	0.548	0.497	0.462	0.422	0.490	0.461	0.421			

Note: Based on the unit cell dimensions, the theoretical density of sample **1** should be 1.17 g/cm^3. The experimental density is 1.154 g/cm^3.

Table S2. Observed and Calculated Spacings for Different Reflections for Sample **2**. The orthorhombic unit cell dimensions are a = 4.89 nm, b = 3.50 nm, and c = 0.49 nm.

hk0	(100)	(020)	(300)	(220)	(130)	(330)	(350)	(360)	(180)	(001)
Obs. (nm)	4.89	1.76	1.63	1.395	1.13	0.920	0.613	0.541	0.443	0.490
Calc. (nm)	4.89	1.745	1.63	1.42	1.132	0.947	0.642	0.548	0.435	0.490
hk0	(221)	(331)	(361)	Tp						
Obs. (nm)	0.471	0.433	0.374	0.350						
Calc. (nm)	0.463	0.435	0.365							

Note: Based on the unit cell dimensions, the theoretical density of sample **2** should be 1.22 g/cm^3. The experimental density is 1.197 g/cm^3.

Table S3. Observed and Calculated Spacings for Different Reflections for Sample **4**. The orthorhombic unit cell dimensions are a = 5.78 nm, b = 3.50 nm, and c = 0.49 nm.

hk0	(100)	(200)	(300)	(030)	(340)	(160)	(180)	(001)	(031)	(341)
Obs. (nm)	5.78	2.78	1.926	1.159	0.799	0.579	0.431	0.490	0.463	0.432
Calc. (nm)	5.78	2.89	1.927	1.167	0.797	0.58	0.436	0.490	0.460	0.424

Note: Based on the unit cell dimensions, the theoretical density of sample **4** should be 1.12 g/cm^3 (assuming the average face-to-face distance between neighboring triphenylenes is 0.5 nm). The experimental density is 0.935 g/cm^3. Therefore, the crystallinity/liquid crystallinity is 83.5%.

Table S4. Observed and Calculated Spacings for Different Reflections for Sample **3** at 175 °C. The oblique columnar unit cell dimensions are a = 7.88 nm, b = 6.10 nm and γ = 95°.

hk0	(100)	(010)	$(1\bar{1}0)$	(110)	(200)	(210)	(300)	(220)	$(3\bar{2}0)$
Obs. (nm)	7.82	6.06	5.09	4.55	3.89	3.09	2.55	2.25	2.05
Calc. (nm)	7.85	6.07	5.02	4.61	3.92	3.17	2.61	2.30	2.07

Table S5. Observed and Calculated Spacings for Different Reflections for Sample **3** at 120 °C. The monoclinic unit cell dimensions are a = 8.03 nm, b = 5.50 nm, c = 0.49 nm, and γ = 95°.

hk0	(100)	(010)	$(1\bar{1}0)$	(200)	$(2\bar{1}0)$	$(3\bar{1}0)$	$(2\bar{2}0)$	(220)	$(3\bar{2}0)$	(320)
Obs. (nm)	8.0	5.48	4.71	3.95	3.37	2.47	2.31	2.13	1.99	1.90
Calc. (nm)	8.0	5.48	4.72	4.00	3.37	2.48	2.35	2.17	1.99	1.83
hk0	(130)	(001)	(581)							
Obs. (nm)	1.79	0.49	0.39							
Calc. (nm)	1.74	0.49	0.38							

Table S6. Observed and Calculated Spacings for Different Reflections for Sample **3** at 25 °C. The orthorhombic unit cell dimensions are a = 7.82 nm, b = 5.37 nm, and c = 0.49 nm.

hk0	(100)	(010)	(110)	(210)	(120)	(220)	(400)	(130)	(050)	(560)
Obs. (nm)	7.82	5.37	4.48	3.17	2.47	2.26	1.94	1.79	1.08	0.79
Calc. (nm)	7.82	5.37	4.43	3.16	2.54	2.21	1.96	1.74	1.07	0.77
hk0	(580)	(590)	(001)	(5$\underline{1}\underline{1}$0)	(151)	(581)				
Obs. (nm)	0.61	0.55	0.49	0.45	0.45	0.4				
Calc. (nm)	0.61	0.55	0.49	0.46	0.44	0.38				