SUPPORTING INFORMATION

Self-Assembly of Thiacyanine Dyes in Water for the Synthesis of Active Hybrid Nanofibers

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Fig S1: Absorption spectra of dyes in water at different molar concentrations, (a) dye (4) in 10 mm cell thickness, (b) dye (1) in 10 mm cell thickness

Fig S2. Fluorescence spectra of dye (**1**) in water excited at $\lambda_{\text{exc}} = 380$ nm and recorded spectra between 400 – 650 nm at room temperature for different molar concentrations, (a) 10^{-4} M heating cycles, (b) 10^{-4} M cooling cycles, (c) 5×10^{-5} M heating cycles, (d) 5×10^{-5} M cooling cycles, (e) 2.5×10^{-5} M heating cycles, (f) 2.5×10^{-5} M cooling cycles

Fig S3. Fluorescence spectra of dye (2) in water excited at $\lambda_{\text{exc}} = 550$ nm and recorded spectra between 400 – 800 nm at room temperature for different molar concentrations, (a) 10^{-3} M heating cycles, (b) 10^{-3} M cooling cycles, (c) 5×10^{-4} M heating cycles, (d) 5×10^{-4} M cooling cycles, (e) 2.5×10^{-4} M heating cycles, (f) 2.5×10^{-4} M cooling cycles, (g) 10^{-4} M heating cycles, (h) 10^{-4} M cooling cycles; (i) 10^{-5} M heating cycles, (j) 10^{-5} M cooling cycles.

Concentration dependent ^1H NMR analysis

Table S1 . Chemical shifts in deuterated water recorded as a function of concentration

Peak (δ)	Concentration (wt %):		
	Dye 3		
	1	0.1	0.01
1	7.376	7.558	7.695
2	7.376	7.558	7.695
3	7.292	7.510	7.616
4	7.292	7.510	7.616
5	7.056	7.229	7.345
6	7.056	7.229	7.345
7	6.743	7.015	7.245
8	6.743	7.015	7.245
9	5.858	6.093	7.129
10	5.858	6.093	7.129
11	5.719	5.973	6.264
12	3.770	3.961	3.985
13	1.947	1.944	1.944
14	1.195	1.299	1.223

Peak (δ)	Concentration (wt %):		
	Dye 2		
	1	0.1	0.01
1	7.325	7.474	7.649
2	7.234	6.904	7.163
3	7.047	7.454	7.629
4	7.047	7.220	7.378
5	7.047	7.220	7.378
6	6.65	7.220	7.378
7	6.66	7.220	7.378
8	5.800	5.994	6.213
9	3.719	3.894	4.093
10	1.944	1.955	1.955
11	1.206	1.273	1.366

Fig S5: XRD profile of calcined dye **3** with silica species*

* Although dye **1** & **2** bound to silica species, but XRD experiment shown no peak.