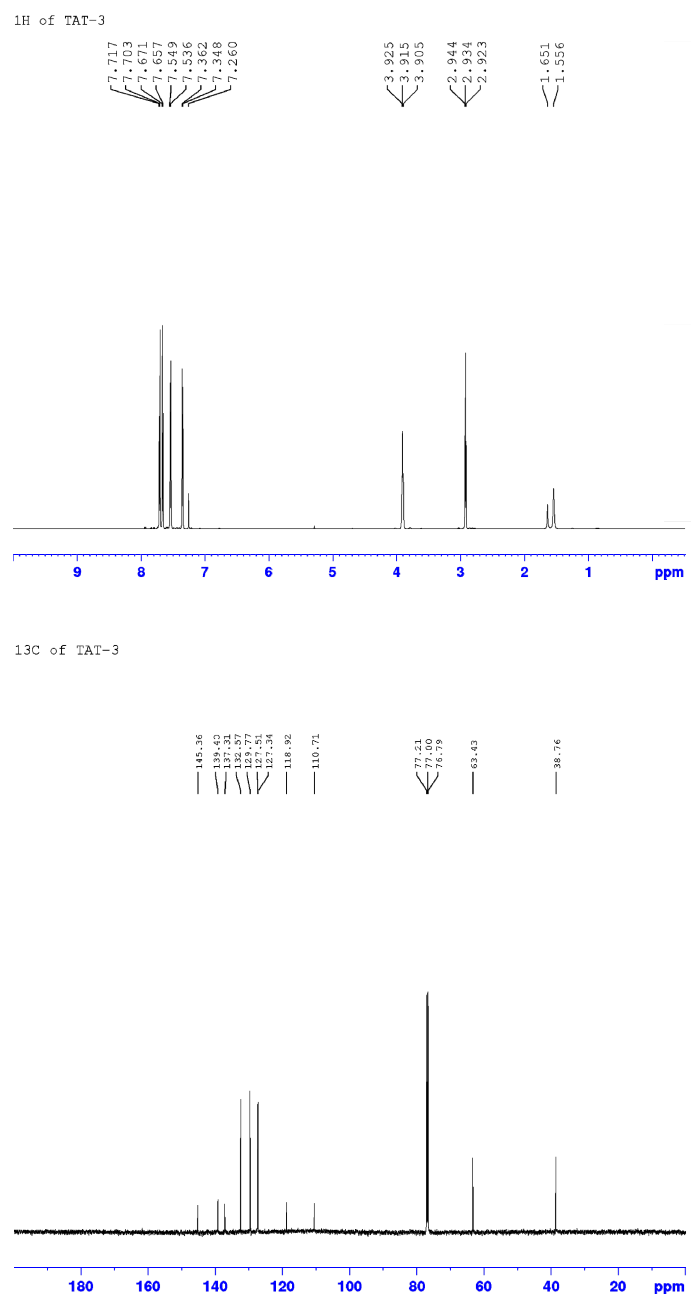


## Supporting Information

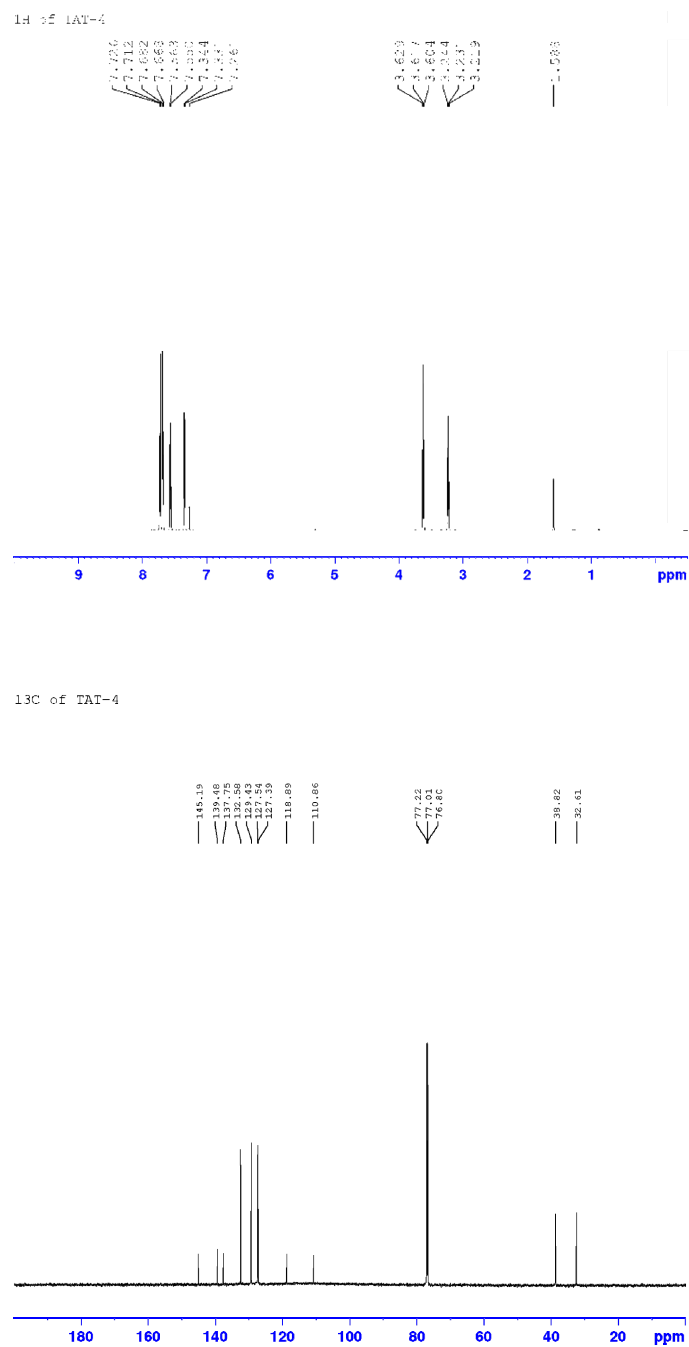
# One-Pot Synthesis of Thiol-modified Liquid Crystals Conjugated Fluorescent Gold Nanoclusters

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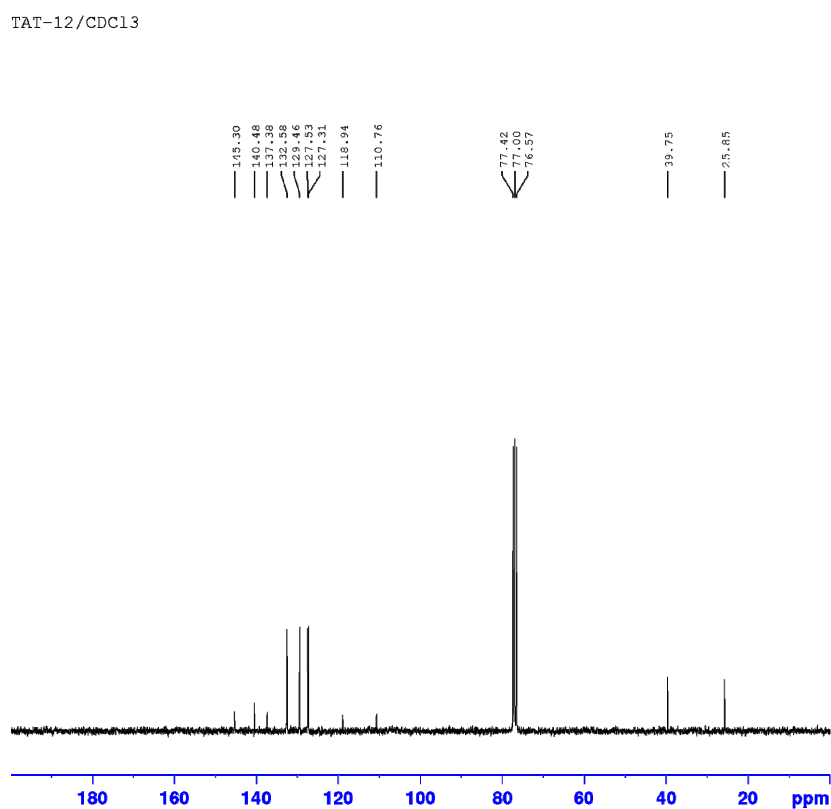
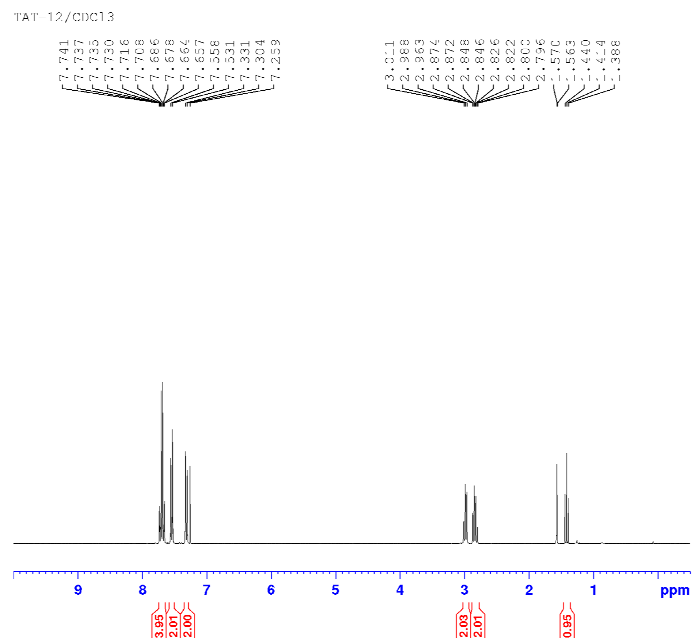
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**Figure S1.**  $^1\text{H}$  NMR (upper) and  $^{13}\text{C}$  NMR (lower) spectra of TAT-3 in  $\text{CDCl}_3$ .  $^1\text{H}$  NMR (600 MHz,  $\text{CDCl}_3$ ):  $\delta$  (ppm) = 7.71 (*d*,  $J = 8.2$  Hz, 2H), 7.66 (*d*,  $J = 8.2$  Hz, 2H), 7.54 (*d*,  $J = 8.0$  Hz, 2H), 7.35 (*d*,  $J = 8.0$  Hz, 2H), 3.92 (*t*,  $J = 5.9$  Hz, 2H), 2.93 (*t*,  $J = 6.5$  Hz, 2H);  $^{13}\text{C}$  NMR (150 MHz,  $\text{CDCl}_3$ ):  $\delta$  (ppm) = 145.36, 139.40, 137.31, 132.57, 129.77, 127.51, 127.34, 118.92, 110.71, 63.43, 38.76; HRMS (EI)  $m/z$ :  $[\text{M}]^+$  calcd for  $\text{C}_{15}\text{H}_{13}\text{NO}$ : 223.0997, found 223.0993.



**Figure S2.**  $^1\text{H}$  NMR (upper) and  $^{13}\text{C}$  NMR (lower) spectra of TAT-4 in  $\text{CDCl}_3$ .  $^1\text{H}$  NMR (600 MHz,  $\text{CDCl}_3$ ):  $\delta$  (ppm) = 7.72 (*d*,  $J$  = 8.1 Hz, 2H), 7.68 (*d*,  $J$  = 8.2 Hz, 2H), 7.56 (*d*,  $J$  = 8.0 Hz, 2H), 7.34 (*d*,  $J$  = 8.0 Hz, 2H), 3.62 (*t*,  $J$  = 7.4 Hz, 2H), 3.23 (*t*,  $J$  = 7.4 Hz, 2H);  $^{13}\text{C}$  NMR (150 MHz,  $\text{CDCl}_3$ ):  $\delta$  (ppm) = 145.19, 139.48, 137.75, 132.58, 129.43, 127.54, 127.39, 118.89, 110.86, 38.82, 32.61.



**Figure S3.** <sup>1</sup>H NMR (upper) and <sup>13</sup>C NMR (lower) spectra of TAT-12 in CDCl<sub>3</sub>. <sup>1</sup>H NMR (300 MHz, CDCl<sub>3</sub>): δ (ppm) = 7.74–7.66 (m, 4H), 7.54 (*d*, *J* = 8.2 Hz, 2H), 7.32 (*d*, *J* = 8.2 Hz, 2H), 2.99 (*t*, *J* = 7.1 Hz, 2H), 2.87–2.80 (m, 2H), 1.41 (*t*, *J* = 7.8 Hz, 2H); <sup>13</sup>C NMR (75 MHz, CDCl<sub>3</sub>): δ (ppm) = 145.30, 140.48, 137.38, 132.58, 129.46, 127.53, 127.31, 118.94, 110.76, 39.75, 25.85; HRMS (EI) *m/z*: [M]<sup>+</sup> calcd for C<sub>15</sub>H<sub>13</sub>NS: 239.0769, found 239.0769.

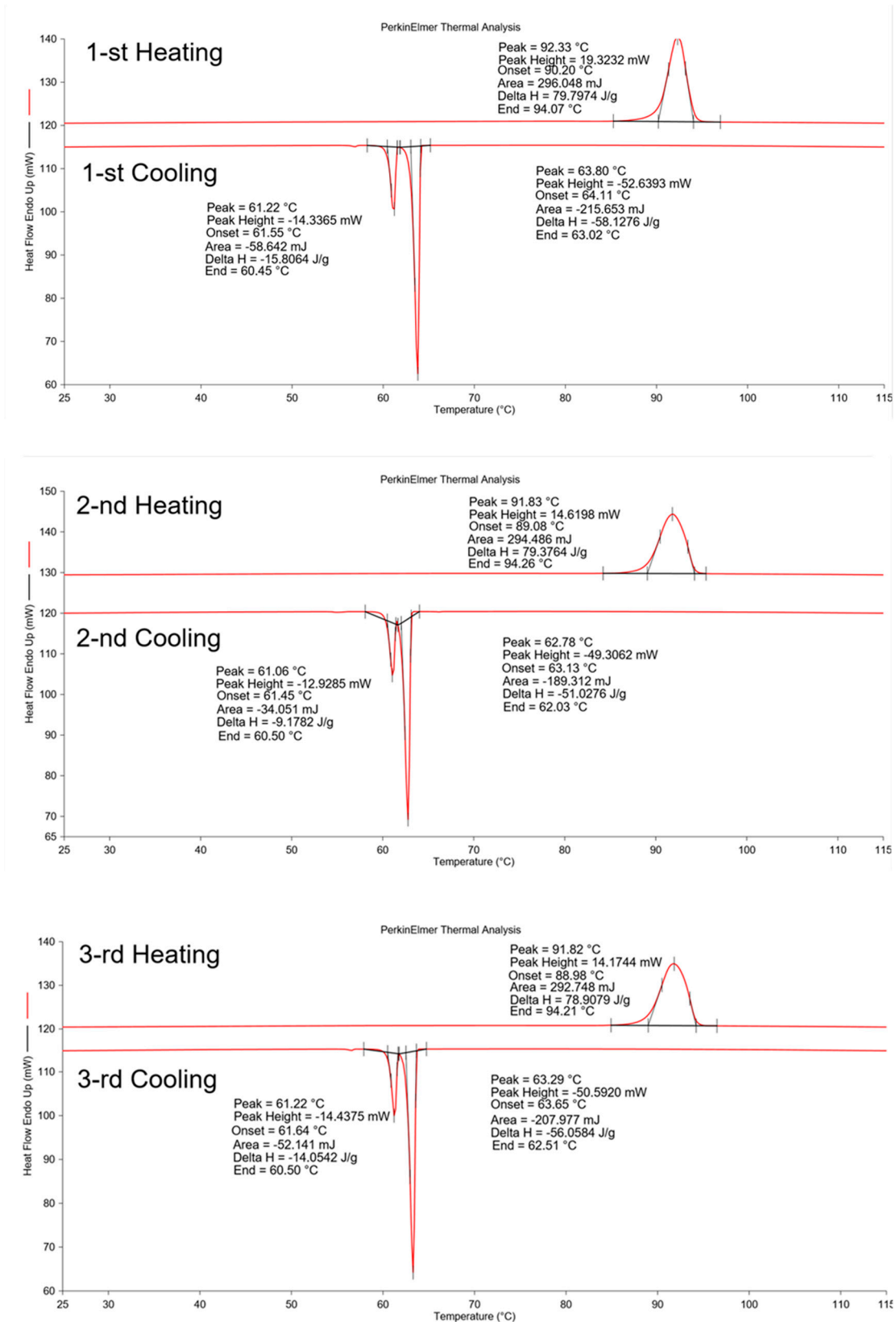


Figure S4. The DSC plots of TAT-12.