

## Supplementary data for

### Effects of carbon nanomaterials on the aggregation of a bi-oxadiazole derivative (BOXD-T8) in DMF and its gel properties

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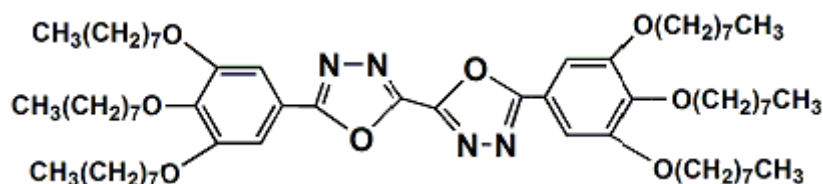
- Synthesis and characteristic of the gelator
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- Thermo-stability of the organogels
- SEM
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## Synthesis and characteristic of the gelator

The gelator BOXD-T8 (Scheme 1) was synthesized according to literature methods<sup>1</sup>.

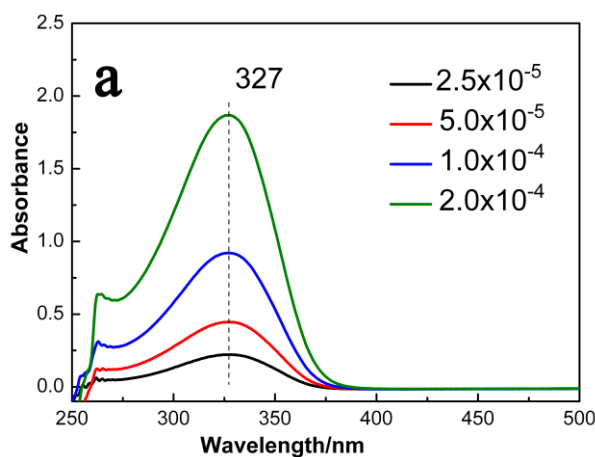
Its structure was characterized by FT-IR and <sup>1</sup>H NMR spectroscopy and elemental analysis.

<sup>1</sup>H NMR: (500MHz, CDCl<sub>3</sub>), (ppm ,from tetramethylsilane TMS): 7.40 (s, 4H), 4.11-4.05 (m, 12H), 1.92-1.72 (m, 12H), 1.52-1.46 (m, 12H), 1.40-1.20 (m, 48H), 0.94-0.82 (m, 18H); FT-IR:  $\nu$  = 2924, 2852, 1632, 1592, 1549, 1494, 1468, 1432, 1390, 1351, 1277, 1243, 1149, 1130, 1118, 1026, 954, 870, 842, 295, 731, 672, 598 cm<sup>-1</sup>; Anal. Calcd for C<sub>64</sub>H<sub>106</sub> N<sub>4</sub>O<sub>8</sub>: C, 72.55; H, 10.08; N, 5.25. Found C, 72.63; H, 10.16; N, 4.98.



Scheme 1 Molecular structure of BOXD-T8 organogelator

## UV spectra of the solution



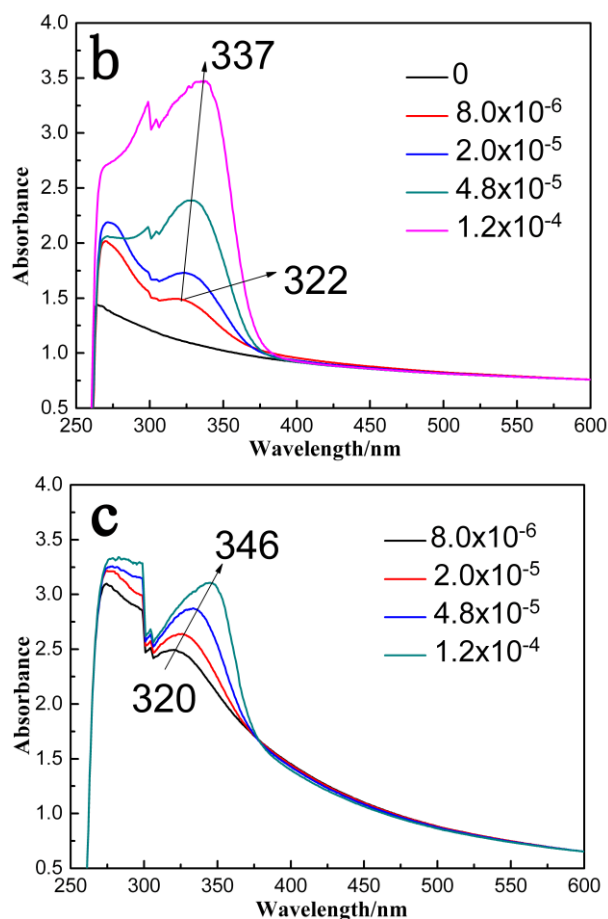


Figure S1 Concentration variation (mol/L) UV/vis absorption spectra of BOXD-T8 in DMF a: without incorporation; b: at a fixed SWNTs concentration (0.04 mg/mL); c: at a fixed GO concentration (0.4 mg/mL)

## Thermo-stability of the organogels

The melting enthalpy was obtained by Schroeder van Laar equation (eq.1), where  $C$  is the molar concentration of gels,  $\Delta H$  denotes the molar dissolution enthalpy of melting and  $R$  is the universal gas constant, respectively. The solid lines are the best fits of eq. 1 to the experimental points.

$$\log[C] = -\frac{\Delta H}{2.303R} \frac{1}{T_{gel}} + \text{constant} \quad \text{eq. (1)}$$

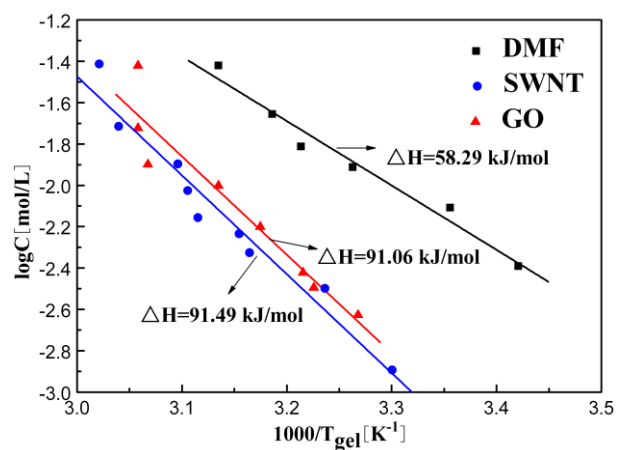


Figure S2 plots of the logarithm of the gelator concentration versus the reciprocal absolute temperature of  $T_{\text{gel}}$  for different organogel systems.

## SEM

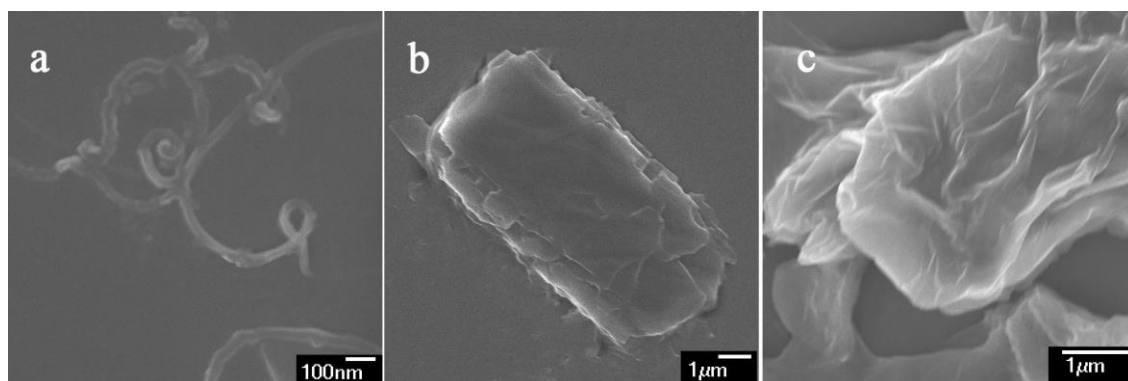


Figure S3 SEM images of (a) SWNTs in DMF after ultrasound treatment (0.06 mg/mL) (b,c) GO in DMF after ultrasound treatment (1 mg/mL)

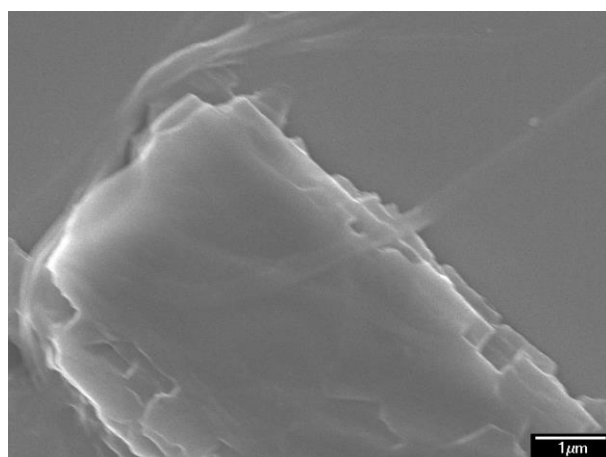


Figure S4 SEM image of solution of BOXD-T8 in DMF ( $10^{-4}$  mol/L) with 1 mg/mL

GO incorporated.

### FT-IR spectrum of the neat GO

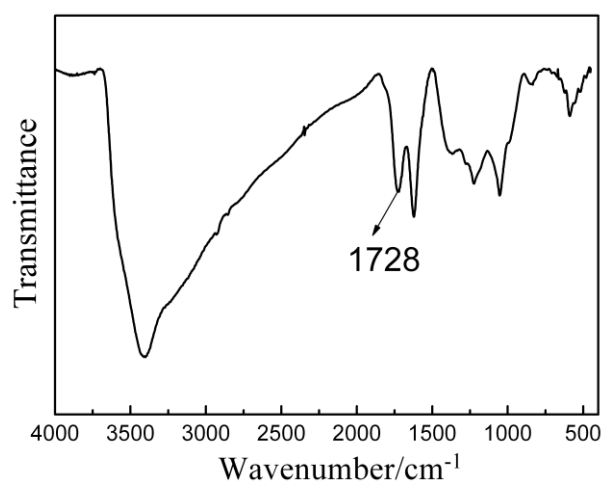


Figure S5 FT-IR spectrum of the neat GO.