

Supplementary information for

Ultrasound-induced controllable morphology and growth dimension in a Dihydrazide-Based self-assembly system

Yan Zhang, Hao Ding, Yangfang Wu, Chunxue Zhang, Haitao Wang*, Binglian Bai and Min Li*

*Key Laboratory for Automobile Materials (JLU), Ministry of Education, College of Materials Science and Engineering, Jilin University, Changchun, 130012, P. R. China

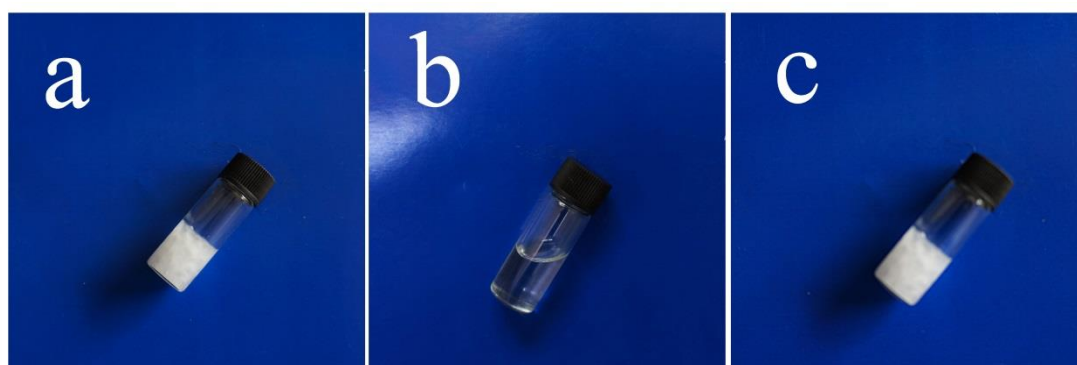


Figure S1 the complete photos of: a, S-gel after pre-sonication; b, solution before gelation; c, T-gel after a heating-cooling process of FH-T6 in ethanol (6.3 mg/mL).

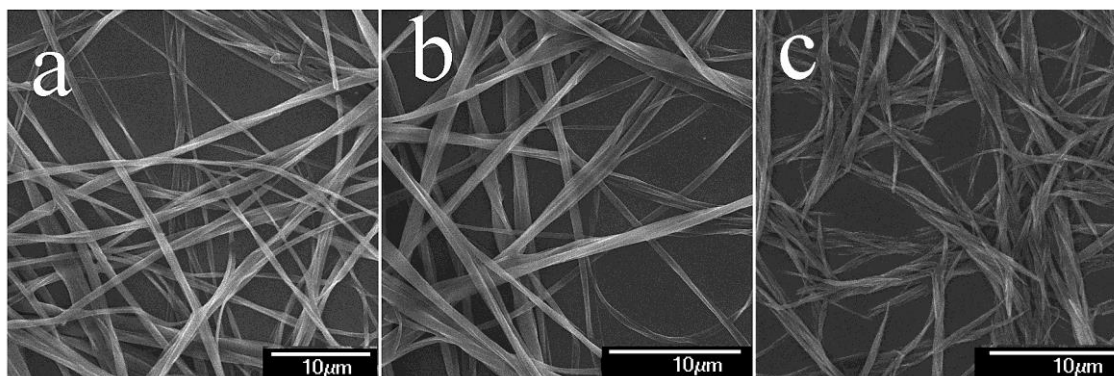


Figure S2 SEM image of a: T-xerogel of FH-T6/ethanol (4 mg/mL) and T-xerogel after 5 min (b) and 70 min (c) sonication in 25 °C water bath, and then cooled at 10 °C.

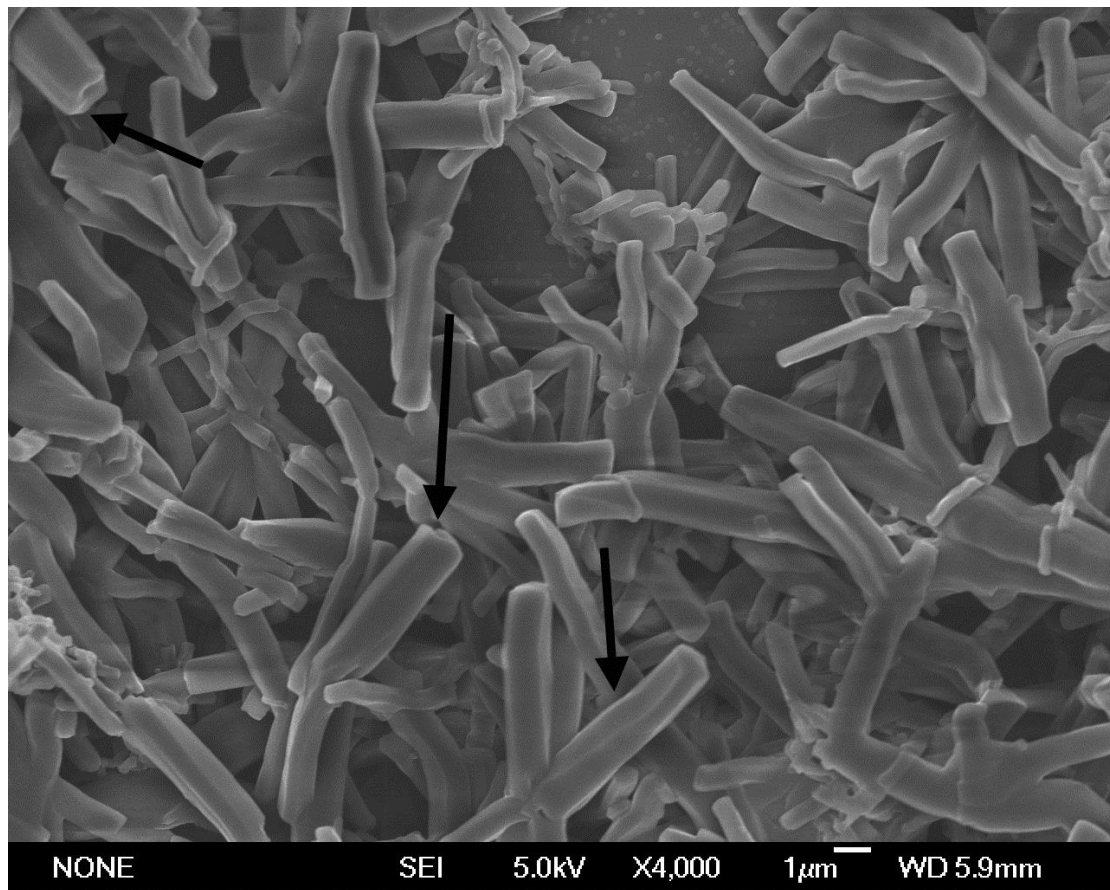


Figure S3 The complete SEM image of S-xerogel of FH-T6/ethanol prepared after 5 min sonication in 50 °C water bath (4 mg/mL), and then cooled at 10 °C.

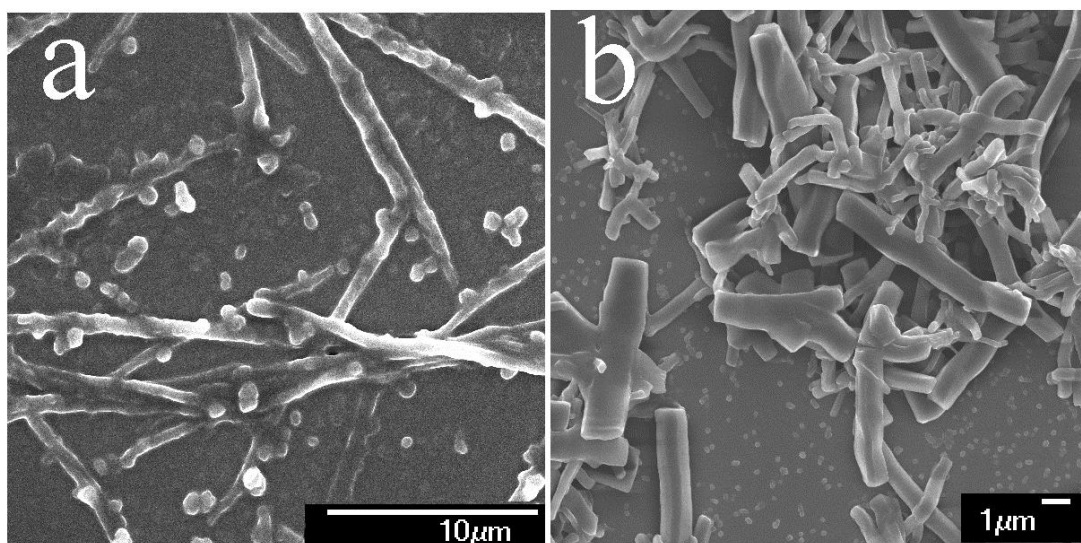


Figure S4 SEM images of dried samples of FH-T6 in ethanol (4mg/mL) a: S-gel (5 min, 20 °C ice-water bath); b: S-gel (5 min, 40 °C water bath).

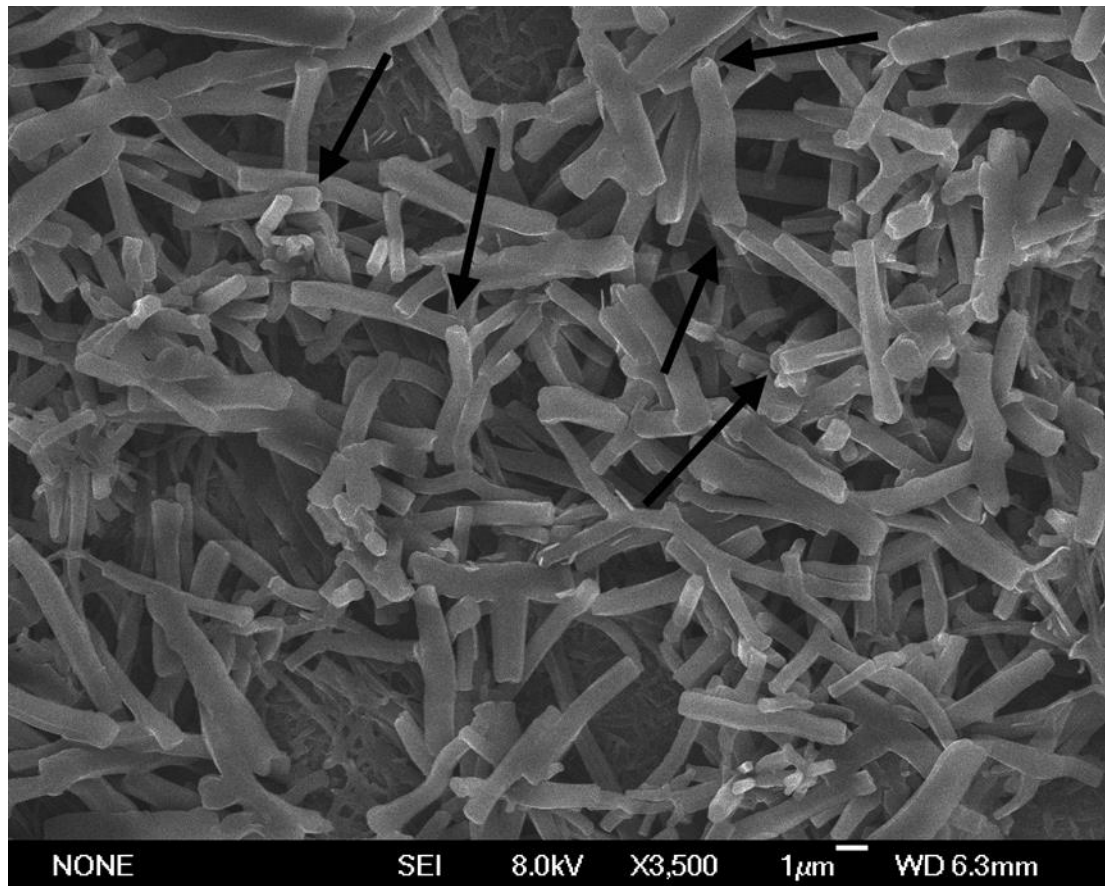


Figure S5 The complete SEM image of S-xerogel of FH-T5/ethanol prepared after 5 min sonication in 60 °C water bath (5 mg/mL), and then cooled at 10 °C.

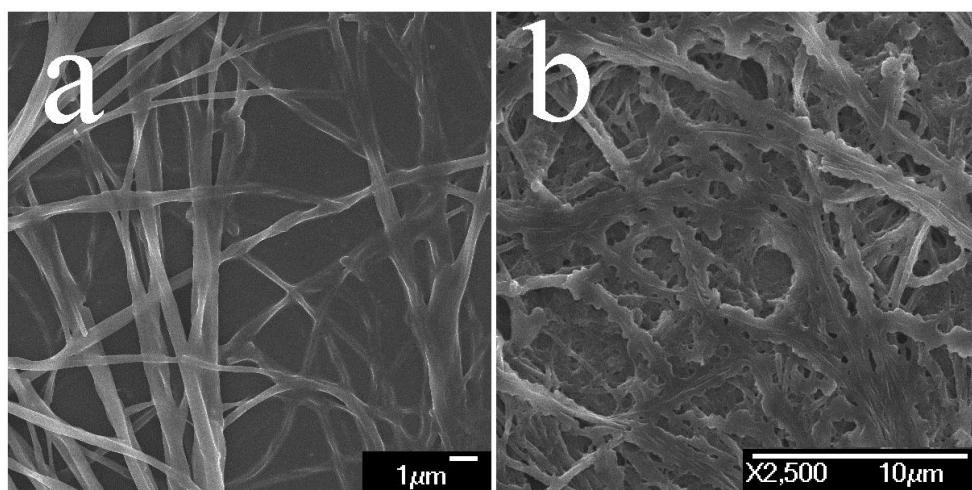


Figure S6 SEM images of S-xerogels of FH-T6 in ethanol (4mg/mL) after 70 min ultrasound in a: 0 °C ice-water bath; b: 10 °C water bath.

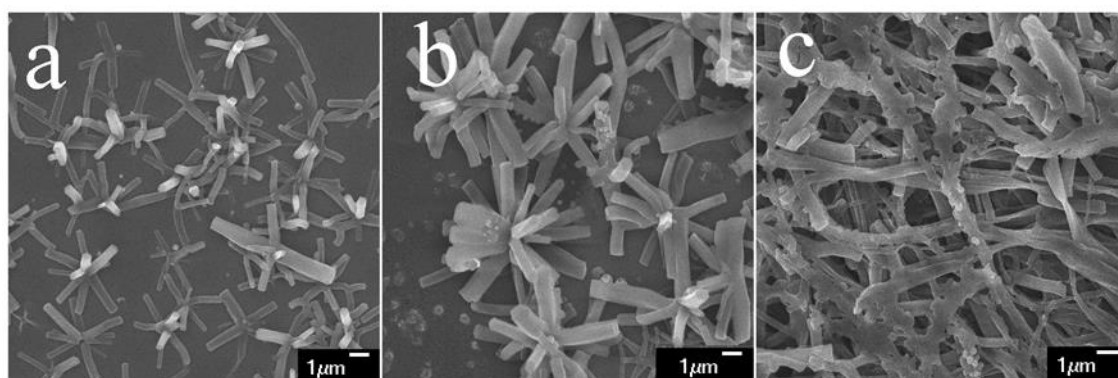


Figure S7 SEM images of S-samples after sonication for a, 1 min (solution), b, 3 min (solution), c, 5 min (gel) of FH-T5/ethanol in 35 °C water bath (4 mg/mL).

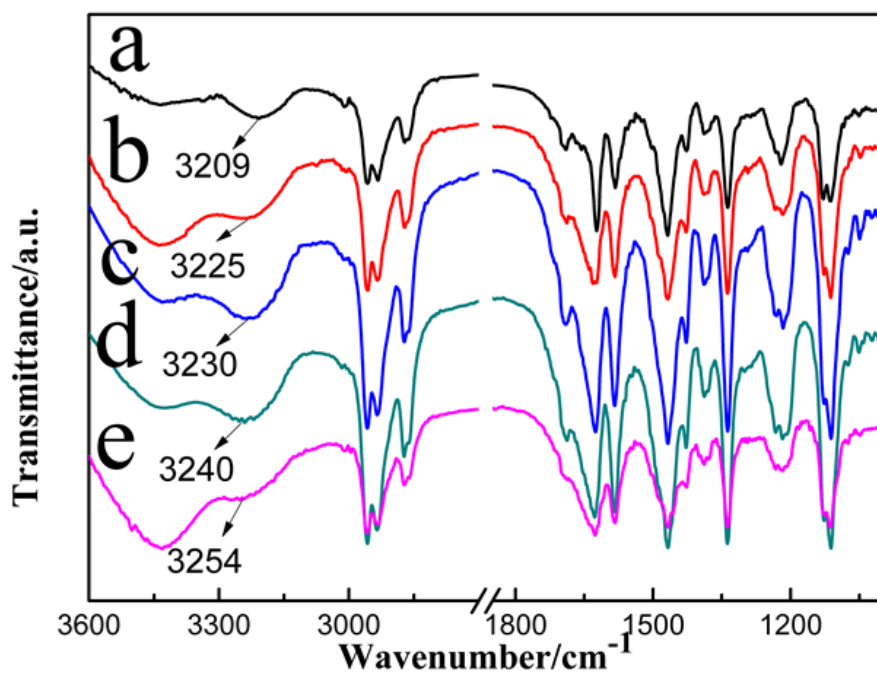


Figure S8 FT-IR spectra of a: T-xerogel of FH-T5/ethanol (5 mg/mL) , S-xerogel of FH-T5/ethanol (5 mg/mL) after 5 min-ultrasound in b: 10 °C water bath; c: 25 °C water bath; d : 40 °C water bath; e: 60 °C water bath.

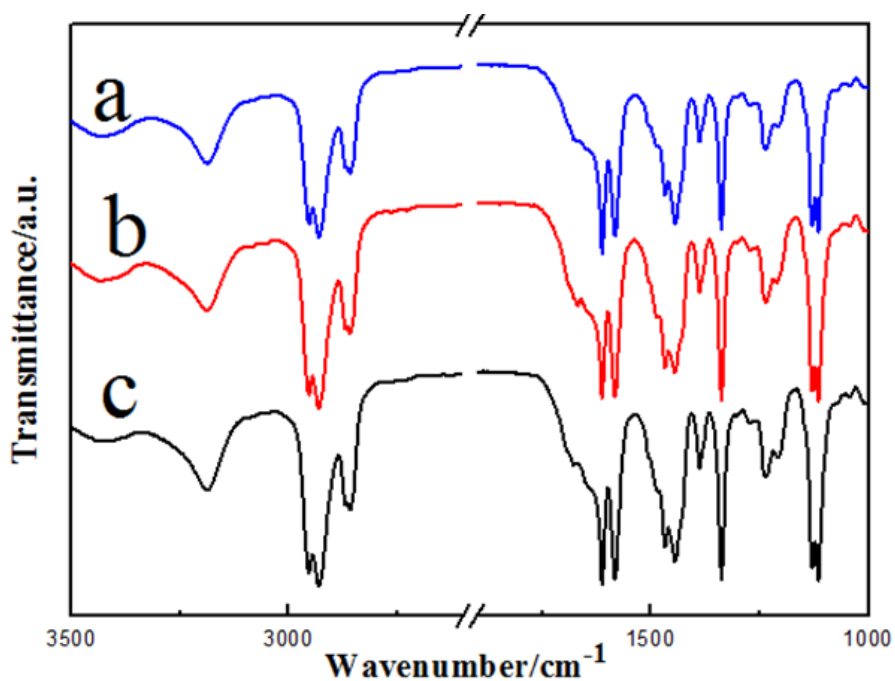


Figure S9 FT-IR spectra of T-xerogel of FH-T6/ethanol (4 mg/mL) formed in a: 17.5 °C water bath; b: -18 °C water bath and c: 0°C water bath.

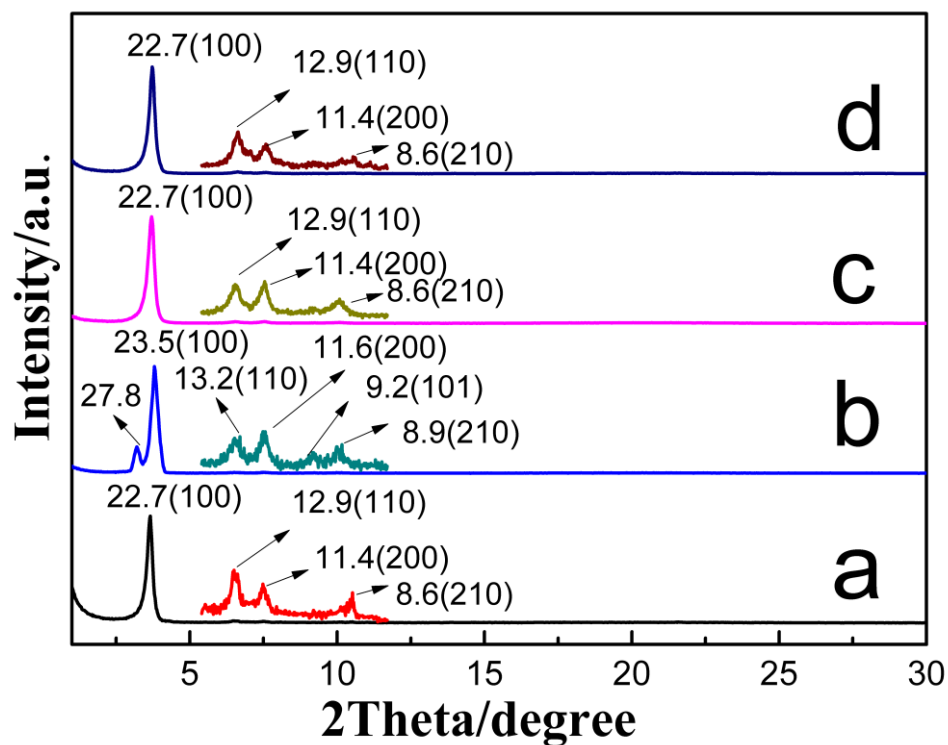


Figure S10 XRD patterns of a: T-xerogel; and S-xerogel formed after 5 min ultrasound irradiation in b:35°C, c: 45°C, d: 60°C, water bath of FH-T5 in ethanol (5 mg/mL).

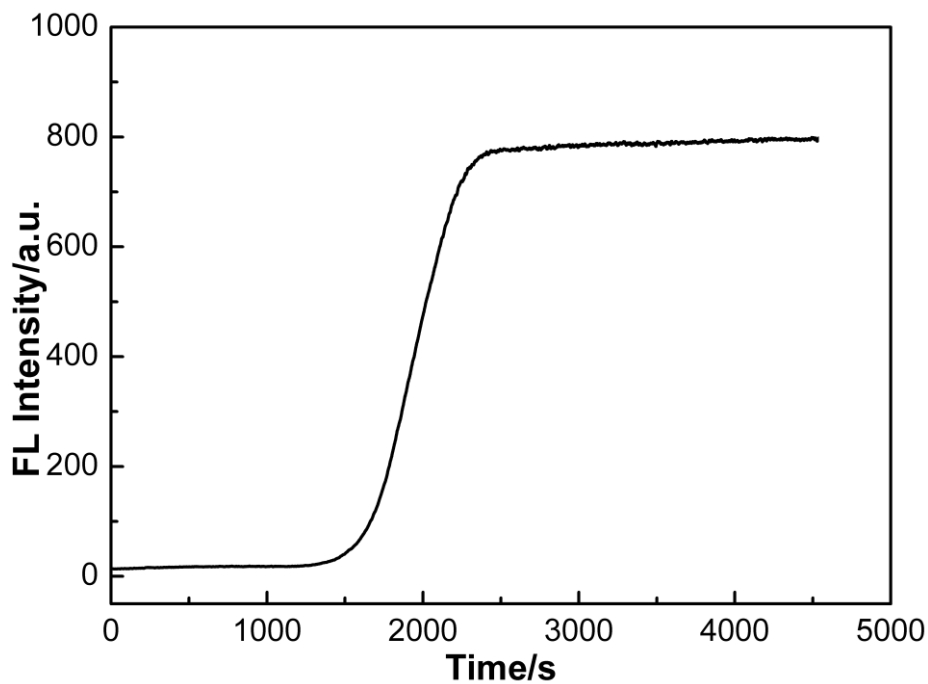


Figure S11 Time-dependent fluorescence spectra of FH-T5 (5 mg/mL) in ethanol at 10 °C. Excited wavelength λ_{ex} =270 nm, λ_{em} =380 nm.

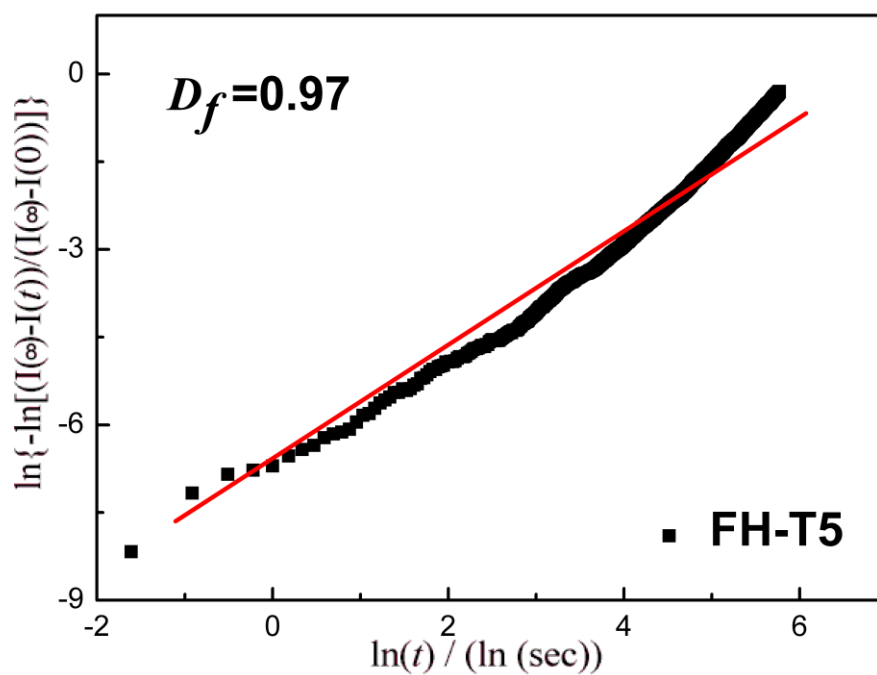


Figure S12 Avrami plot of the fluorescence data of T-gel for FH-T5 in ethanol (5 mg/mL).

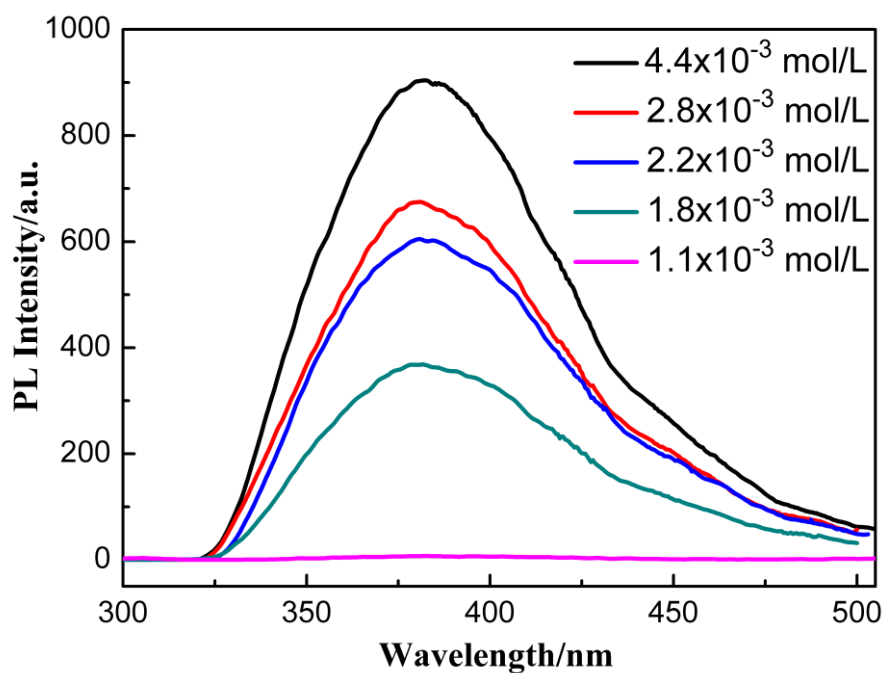


Figure S13 Concentration-variation emission spectra of FH-T6 in ethanol. Excited wavelength $\lambda_{ex}=270$ nm.

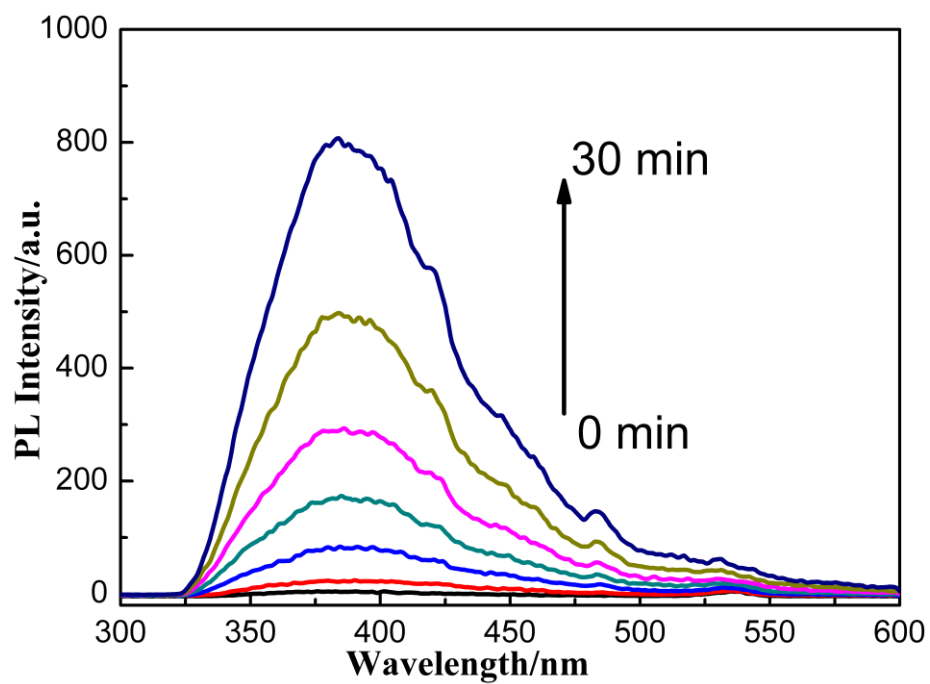


Figure S14 Fluorescence emission spectra of FH-T5 in ethanol during the gelation process. Excited wavelength $\lambda_{ex}=270$ nm.