Electronic Supporting Information

A Covalent Organic Polymer as Turn-on Fluorescence Sensor for Hydrazine Detection

Jiangpeng Wang,[#a] Canran Wang,[#a] Shan Jiang,[a,b] Wenyue Ma,[a] Bin Xu,[a] Leijing Liu*[a] and Wenjing Tian*[a]

[a] State Key Laboratory of Supramolecular Structure and Materials, Jilin University, Changchun 130012, P. R. China. E-mail: liuleijing@jlu.edu.cn, wjtian@jlu.edu.cn

[b] College of Chemistry and Chemical Engineering Liaoning Normal University, Dalian 116029, P. R. China

[#] These authors contributed equally to this work.

Supplementary Figures

Fig. S1-S4 show the ^{1}H NMR and mass spectra of TPE-$(Si)_4$ and TPE-Al, respectively.

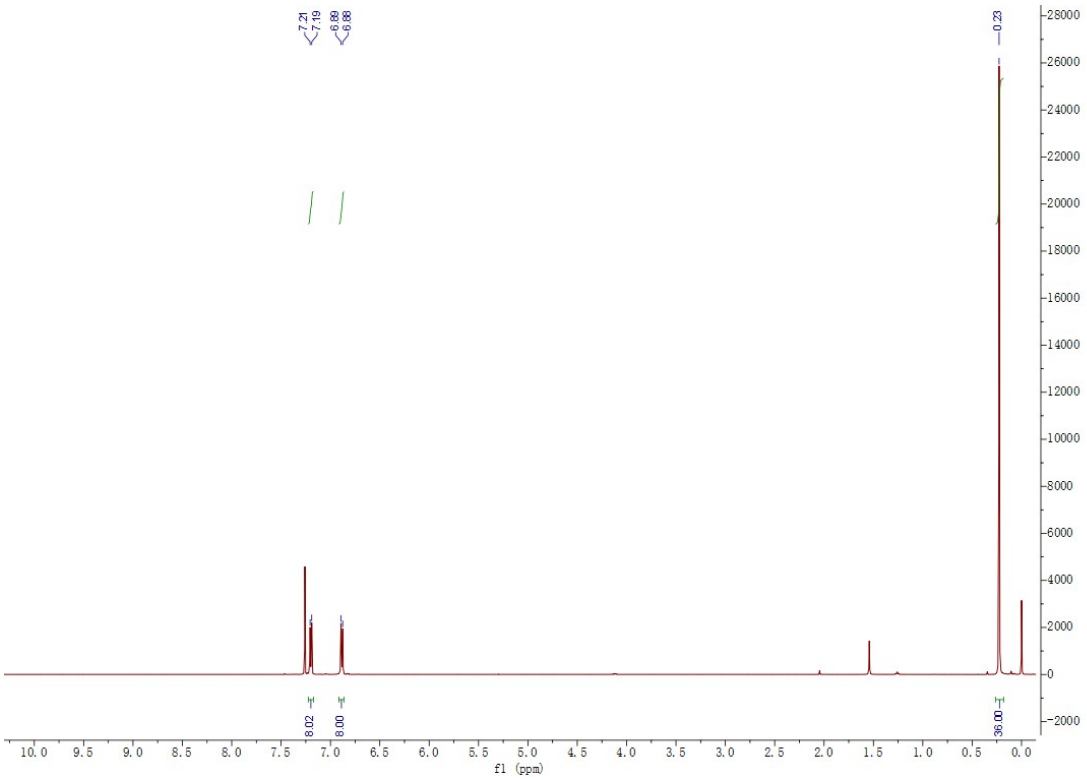

Fig. S1 ^{1}H NMR spectrum of TPE-$(Si)_4$.

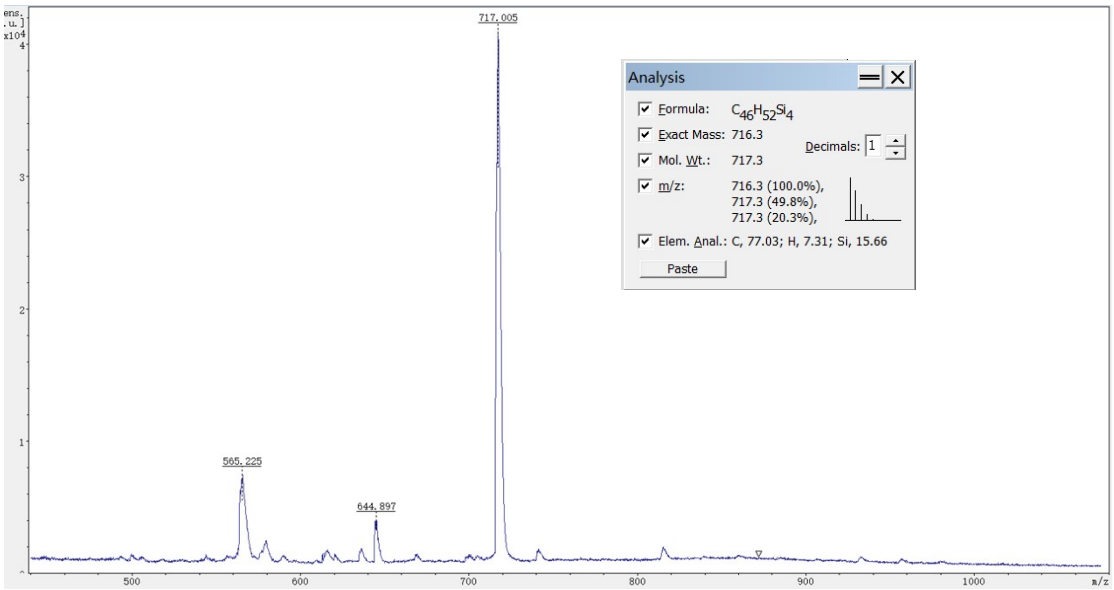

Fig. S2 Mass spectrum of TPE-$(Si)_4$.

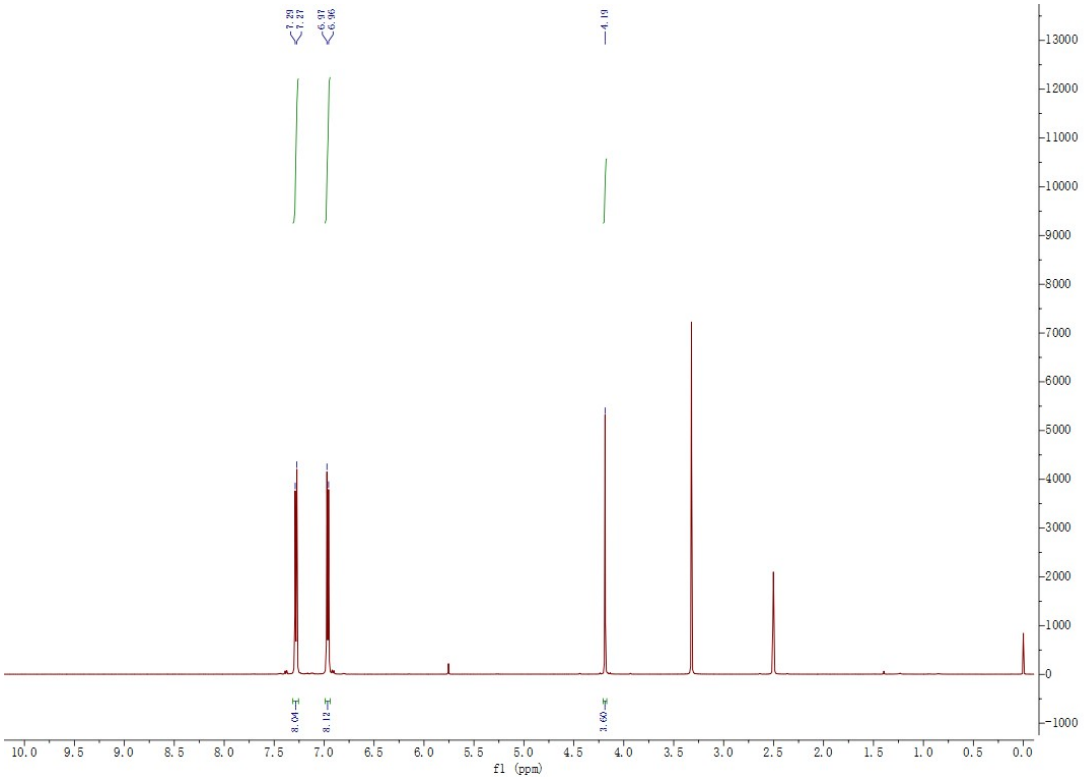

Fig. S3 ^{1}H NMR spectrum of TPE-Al.

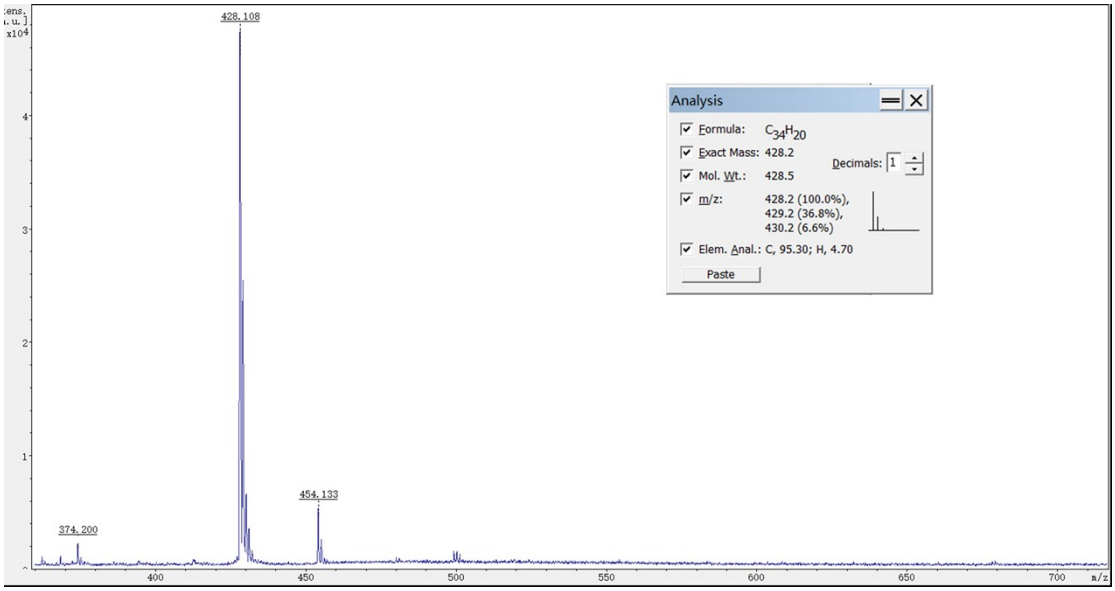

Fig. S4 Mass spectrum of TPE-Al.

Fig. S5 shows the powder X-Ray diffraction (PXRD) pattern of COP-Ta. It can be observed that there is no obvious crystallization peak, indicating that COP-Ta is an amorphous polymer.

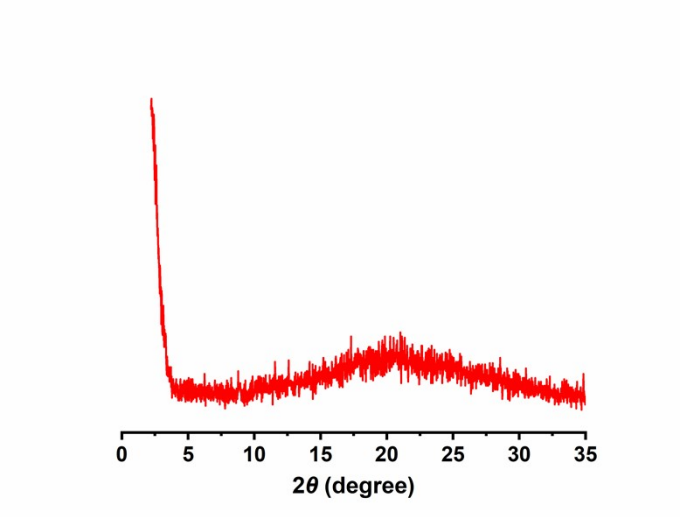

Fig. S5 PXRD pattern of COP-Ta.

The scanning electron microscopy (SEM) and transmission electron microscope (TEM) images are shown in Fig. S6. The random block morphology can be observed in the SEM image of COP-Ta (Fig. S6a). From the transmission electron microscope image (Fig. S6b), a flaky stacking structure can be observed.

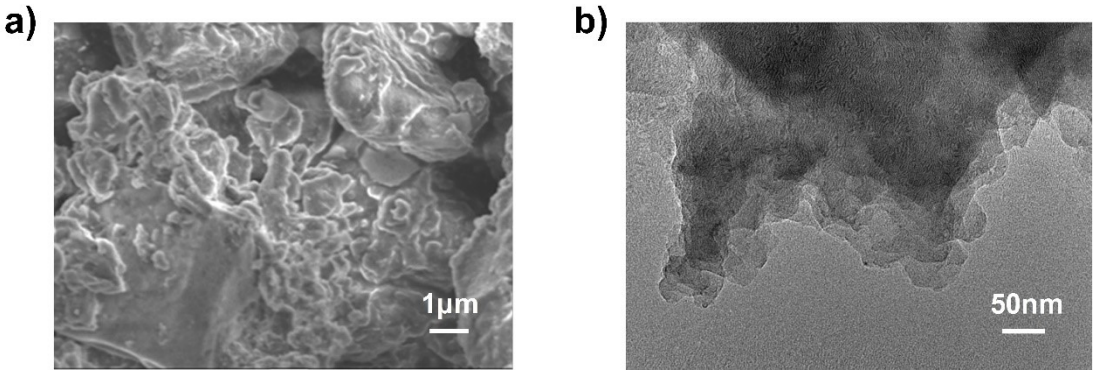

Fig. S6 a) SEM and b) TEM images of COP-Ta.

Fig. S7 shows the TGA curve of COP-Ta from room temperature to 800 ℃ in N_2 atmosphere. COP-Ta has almost no weight loss before 300 ℃; After 300 ℃, COP-Ta begins to lose weight gradually. When the temperature rises to 450 ℃, the weight loss of COP-Ta is only 10%. Finally, when the temperature rises to 800 ° C, COP-Ta

decomposes only a small part. All these phenomena show that the polymer has an excellent thermal stability.

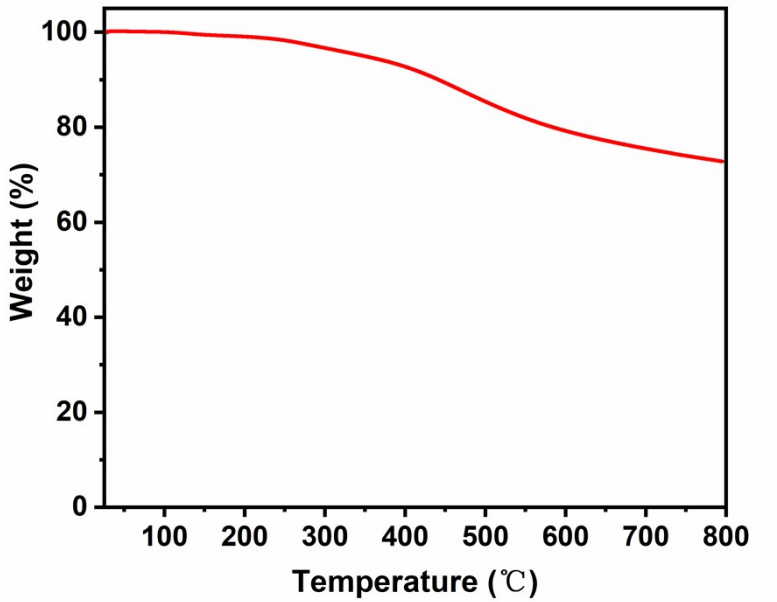

Fig. S7 TGA curve of COP-Ta.

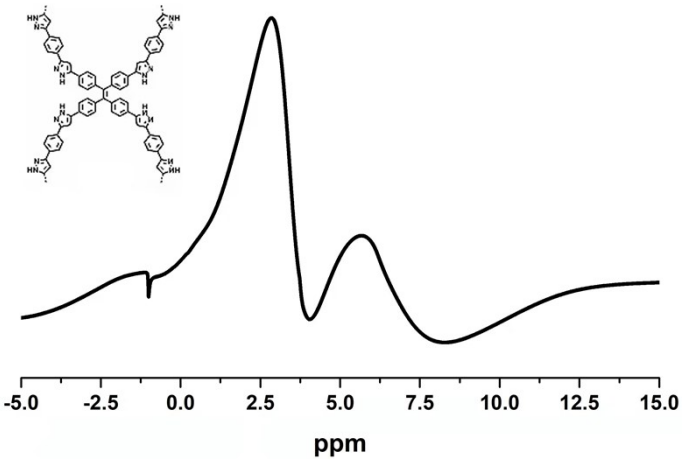

Fig. S8 Solid-state ^{1}H NMR spectrum of COP-Ta after hydrazine addition.