Thiophenic silicon phthalocyanine: synthesis, characterization and photophysical properties

1. Characterization

1.1 Characterization of **M1**

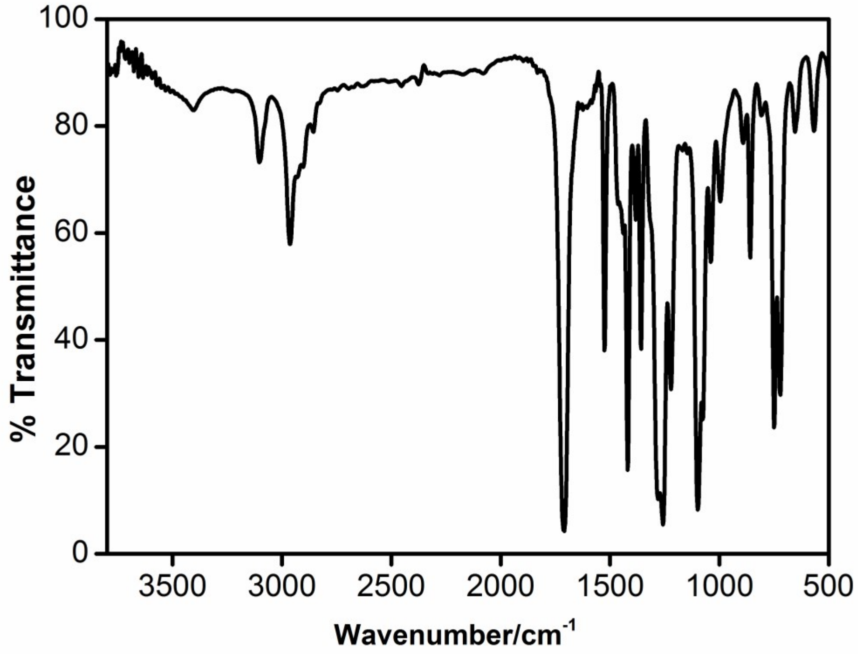

Fig. S1 The FT-IR spectrum of M_1

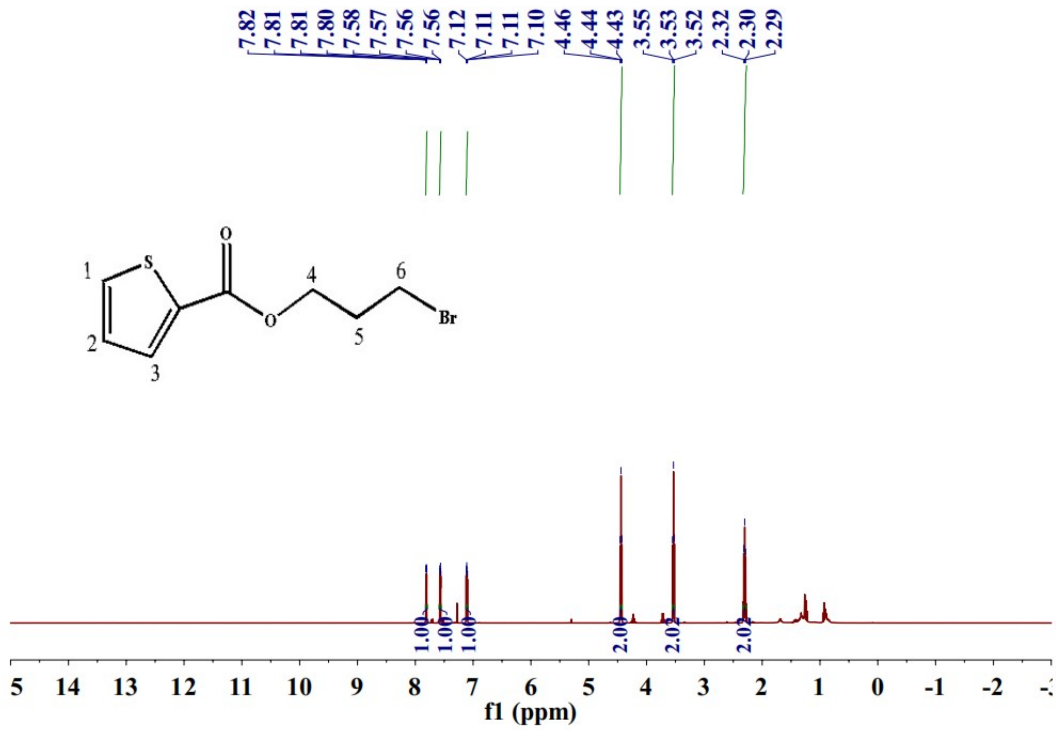

Fig. S2 The ^{1}H NMR spectrum of $\mathbf{M_1}$ (DMSO-d_6, 400 MHz)

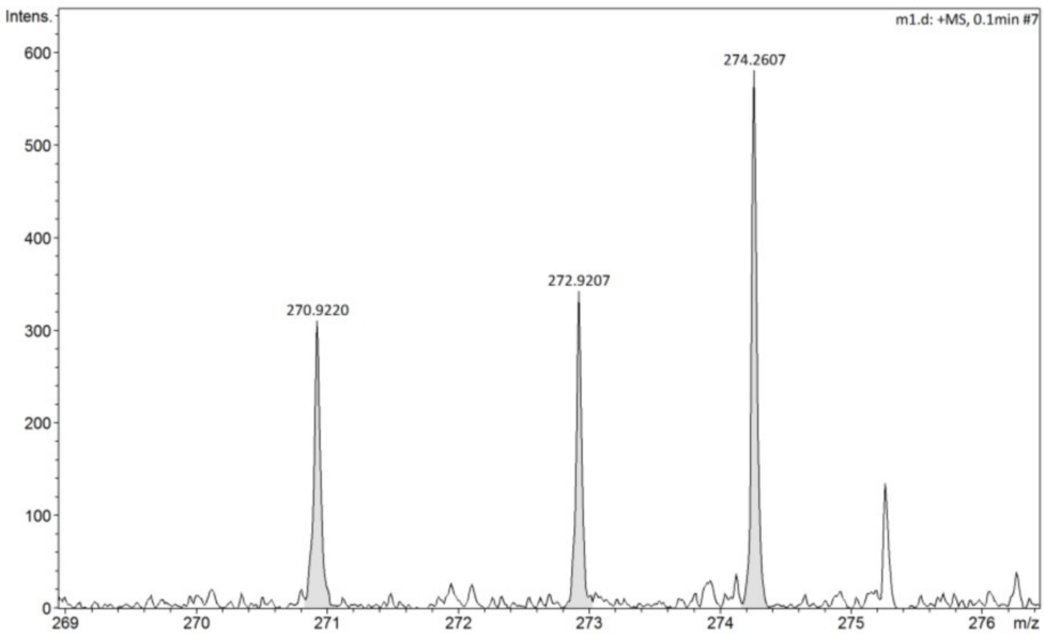

Fig. S3 The ESI-MS spectrum of $\mathbf{M_1}$

1.2 Characterization of **M2**

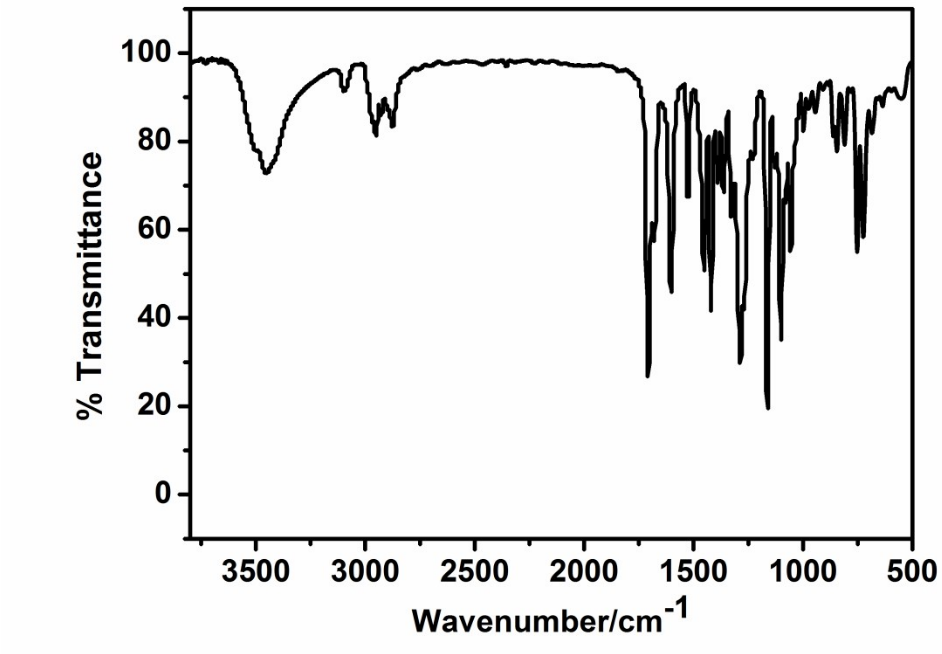

Fig. S4 The FT-IR spectrum of $\mathbf{M_2}$

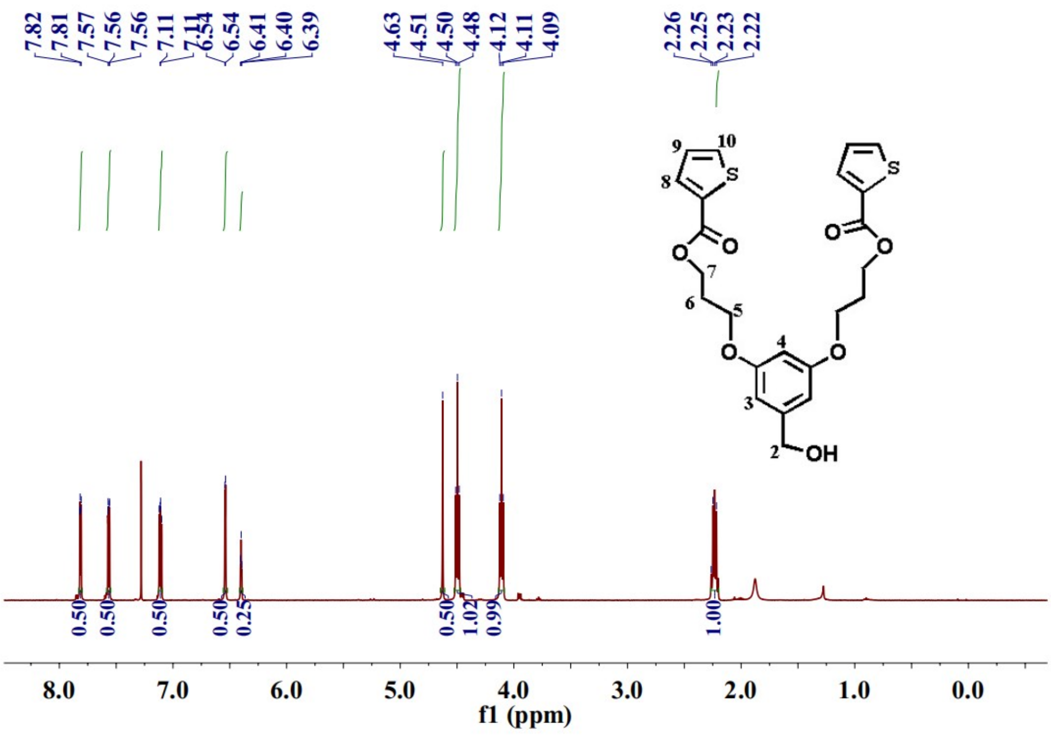

Fig. S5 The ^{1}H NMR spectrum of $\mathbf{M_2}$ (DMSO-d_6, 400 MHz).

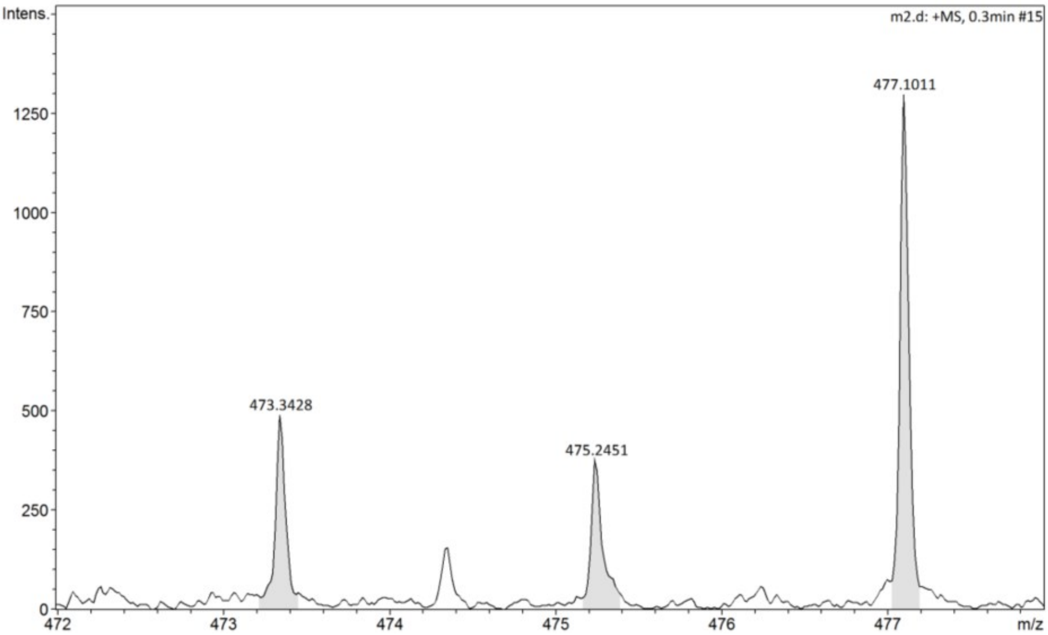

Fig. S6 The ESI-MS spectrum of $\mathbf{M_2}$

1.3 Characterization of **M2SiPc**

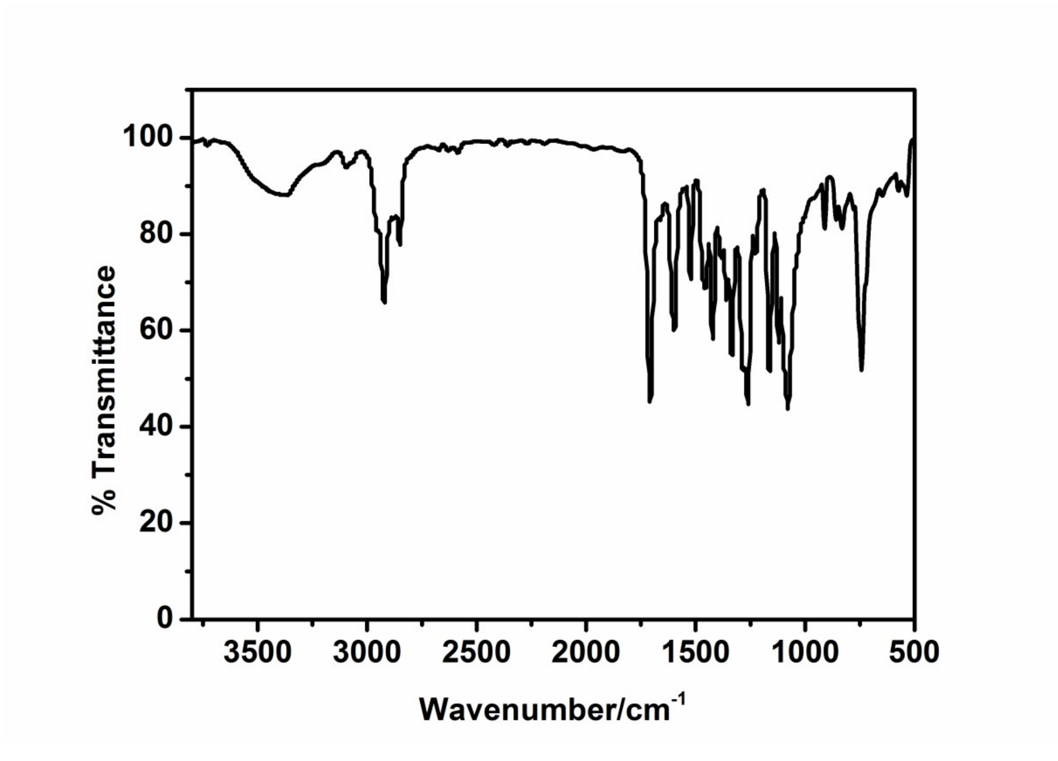

Fig. S7 The FT-IR spectrum of $\mathbf{M_2SiPc}$

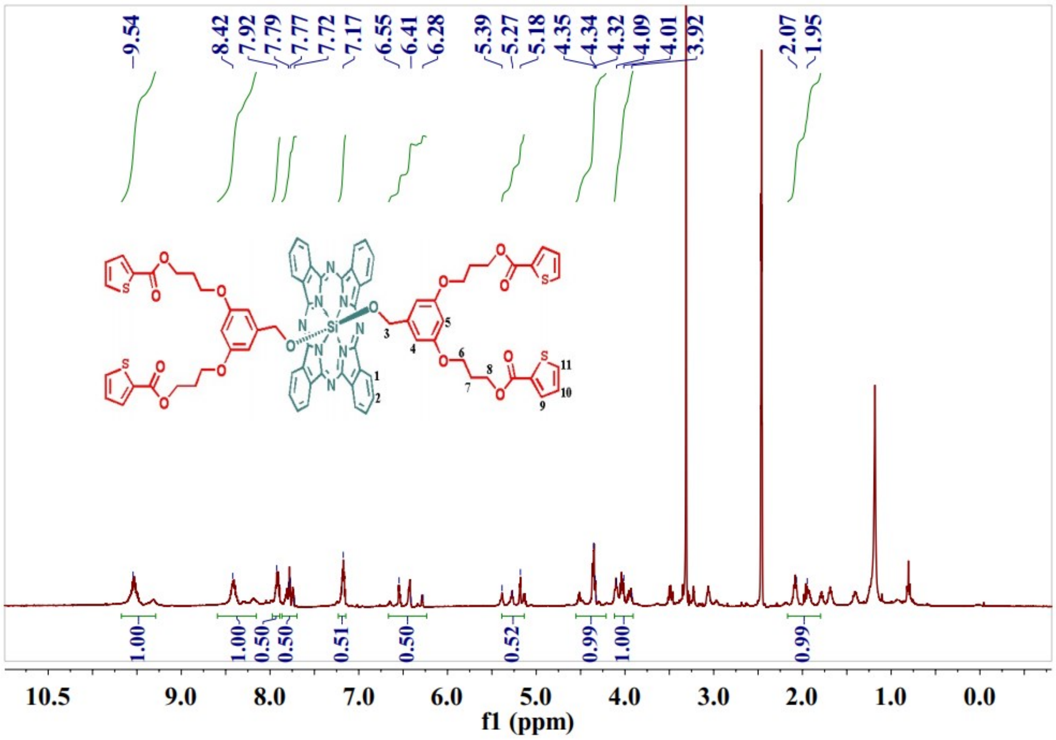

Fig. S8 The ^{1}H NMR spectrum of **M2SiPc** (DMSO-d_6, 400 MHz).

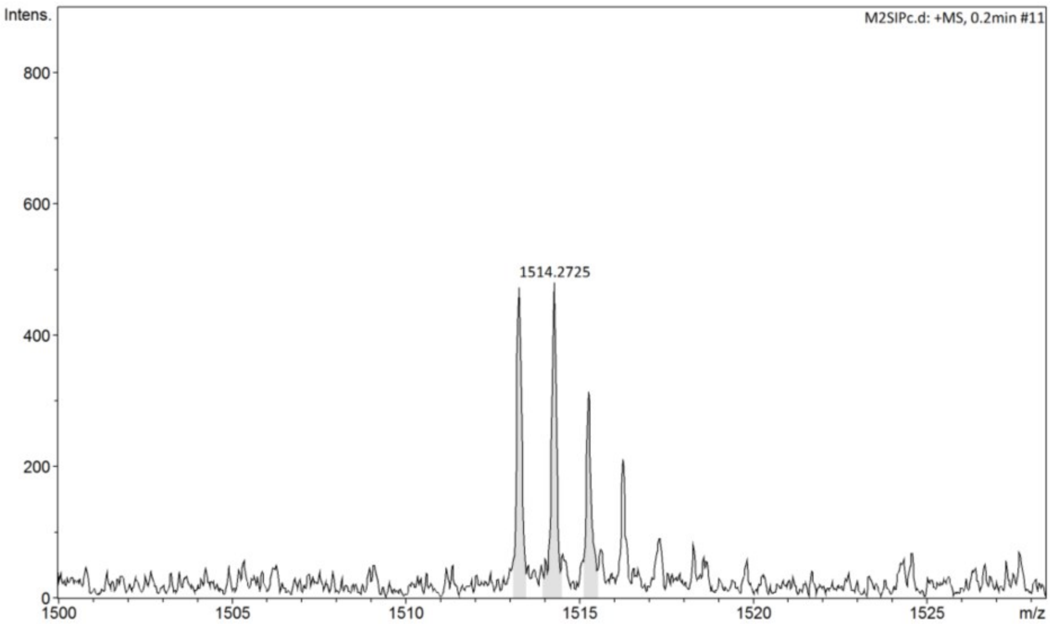

Fig. S9 The ESI-MS spectrum of **M2SiPc**

1.4 Characterization of **BBT-OH**

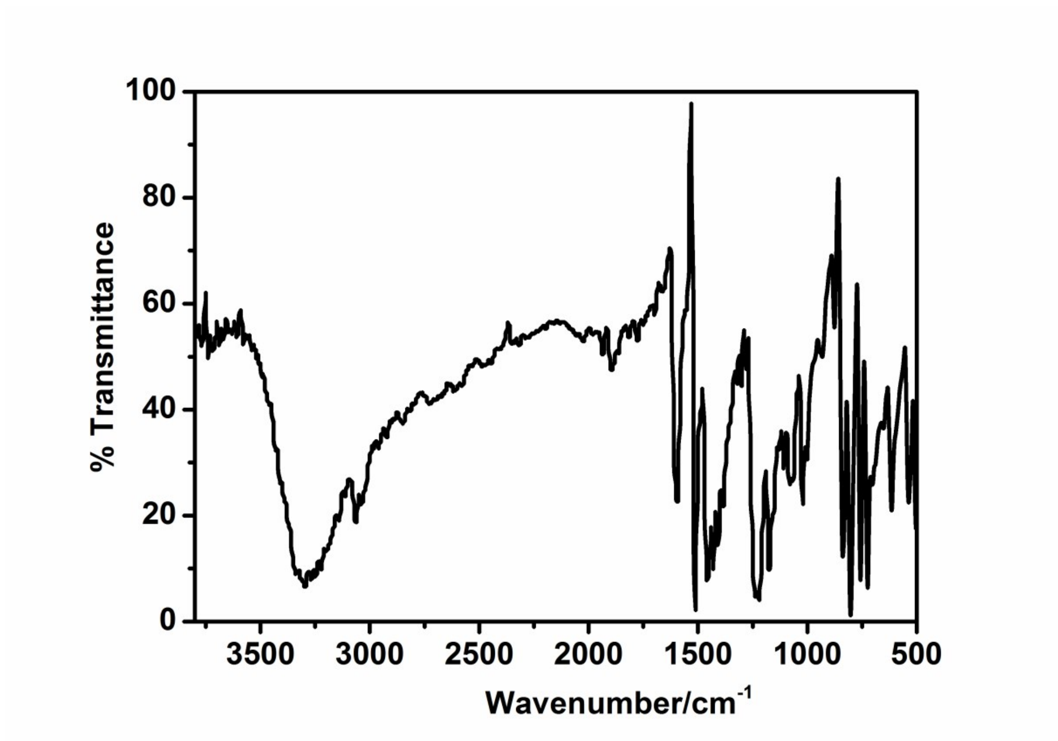

Fig. S10 The FT-IR specturm of **BBT-OH**

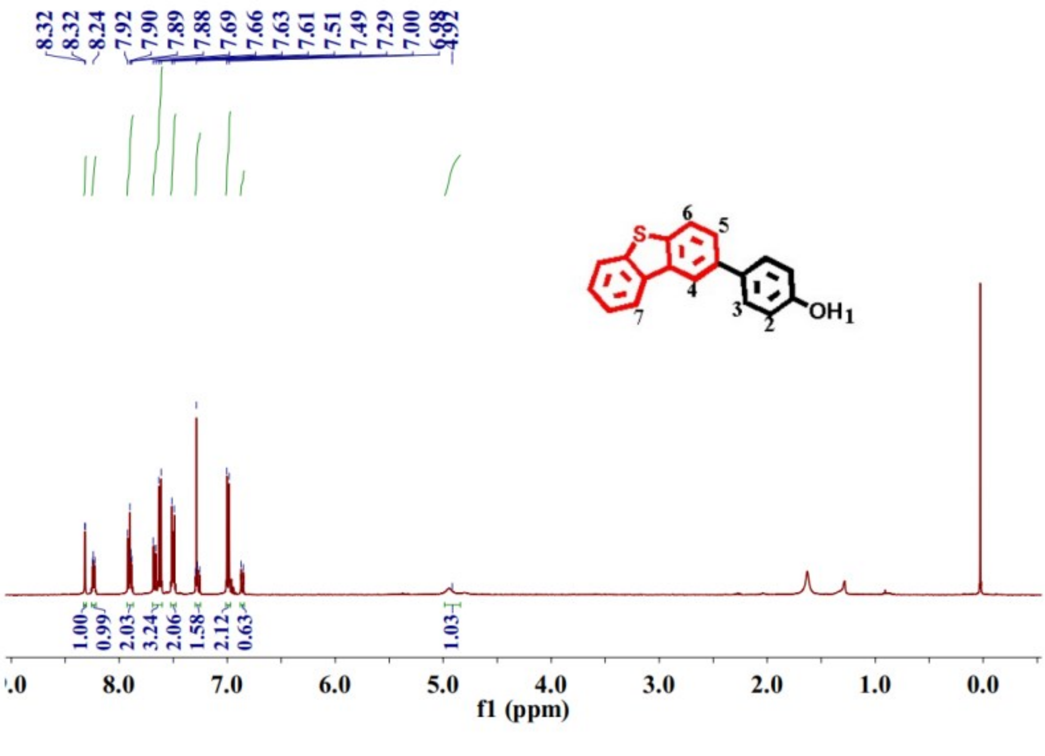

Fig. S11 The ^{1}H NMR spectrum of **BBT-OH** (DMSO-d_6, 400MHz).

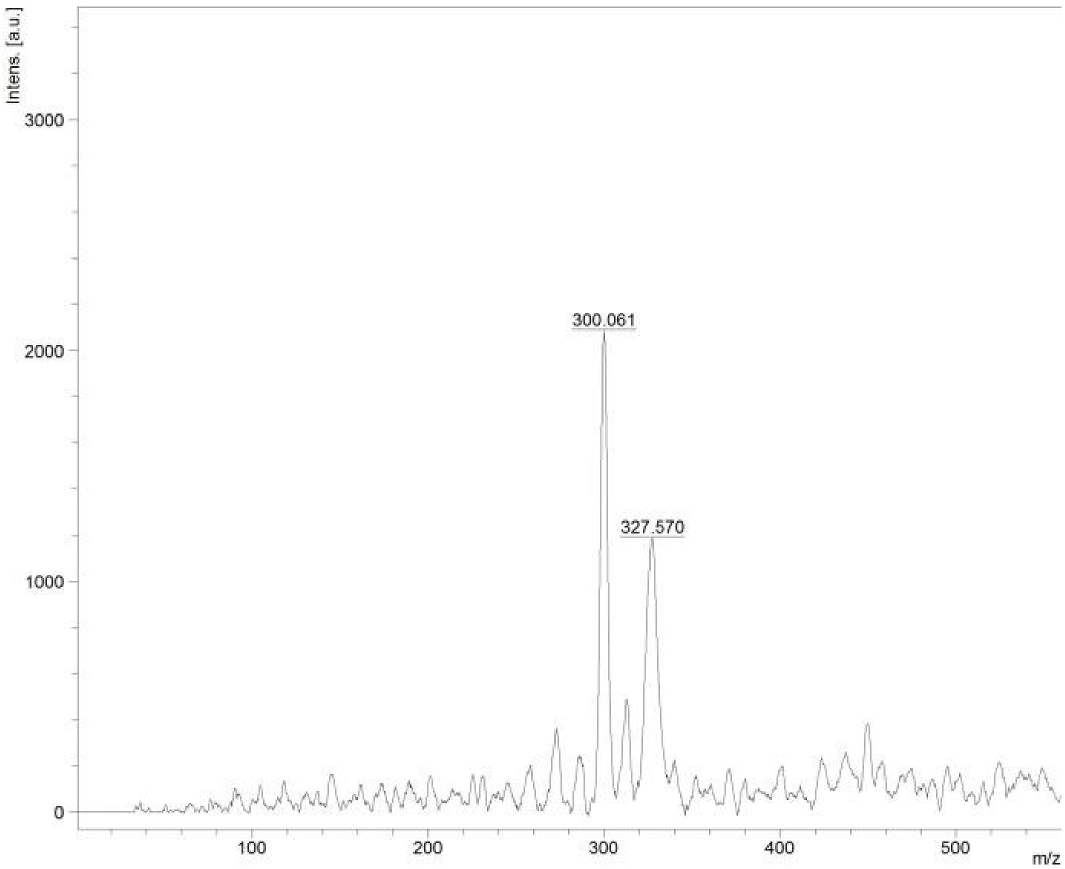

Fig. S12 The MALDI-TOF MS specturm of **BBT-OH**

1.5 Characterization of **BBT-SiPc**

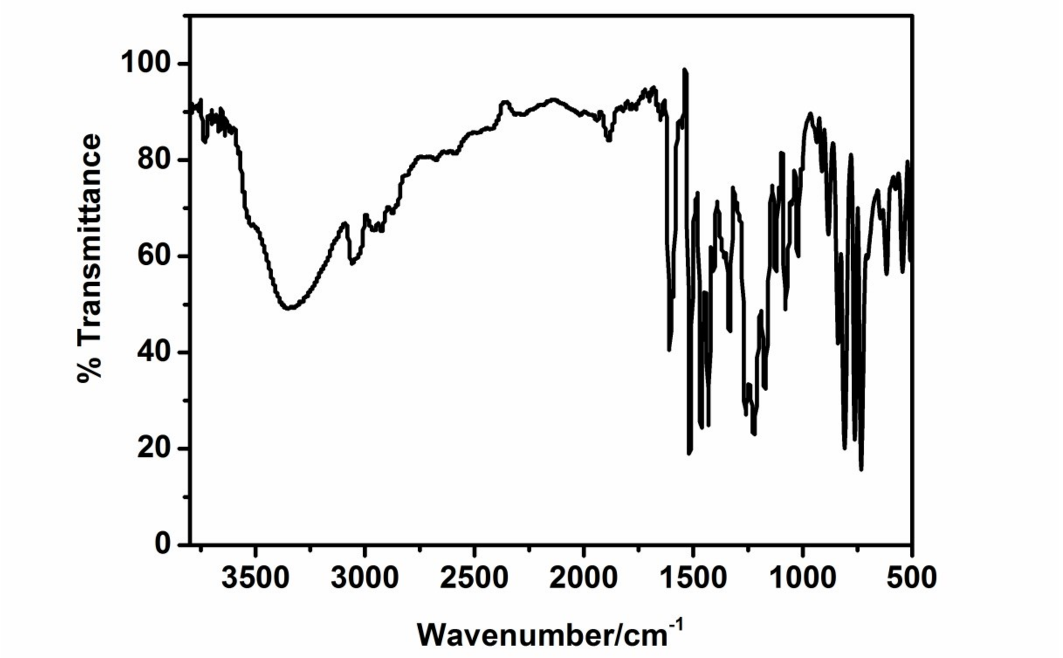

Fig. S13 The FT-IR specturm of **BBT-SiPc**

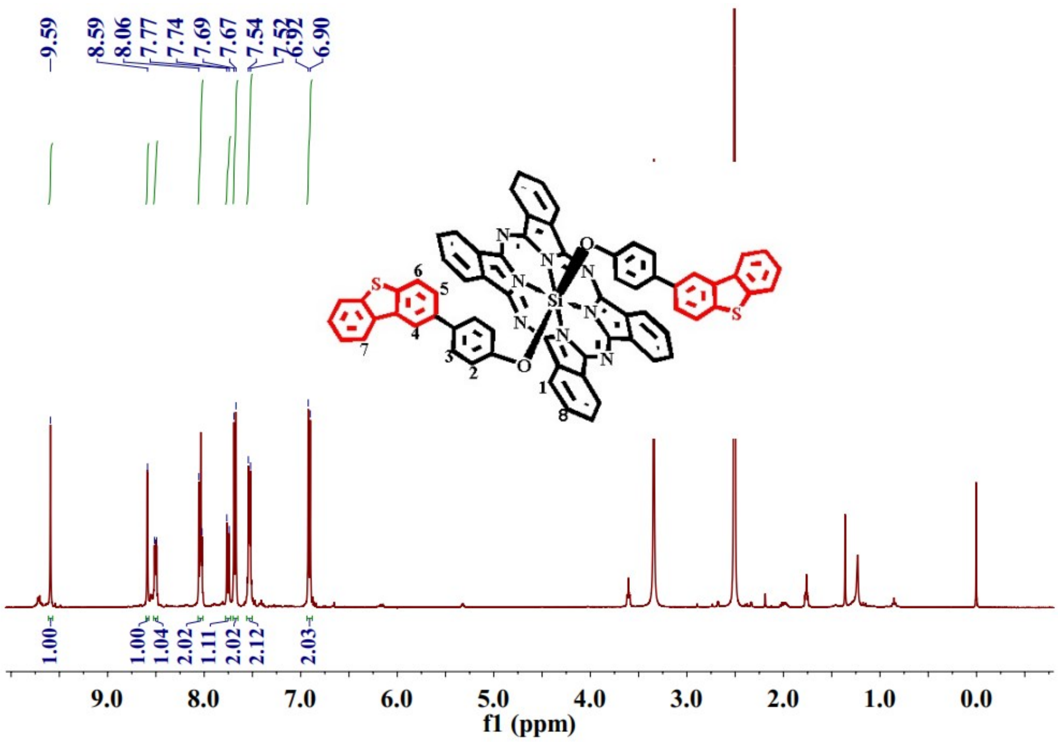

Fig. S14 The ^1H NMR specturm of **BBT-SiPc** ($DMSO-d_6$, 400Hz).

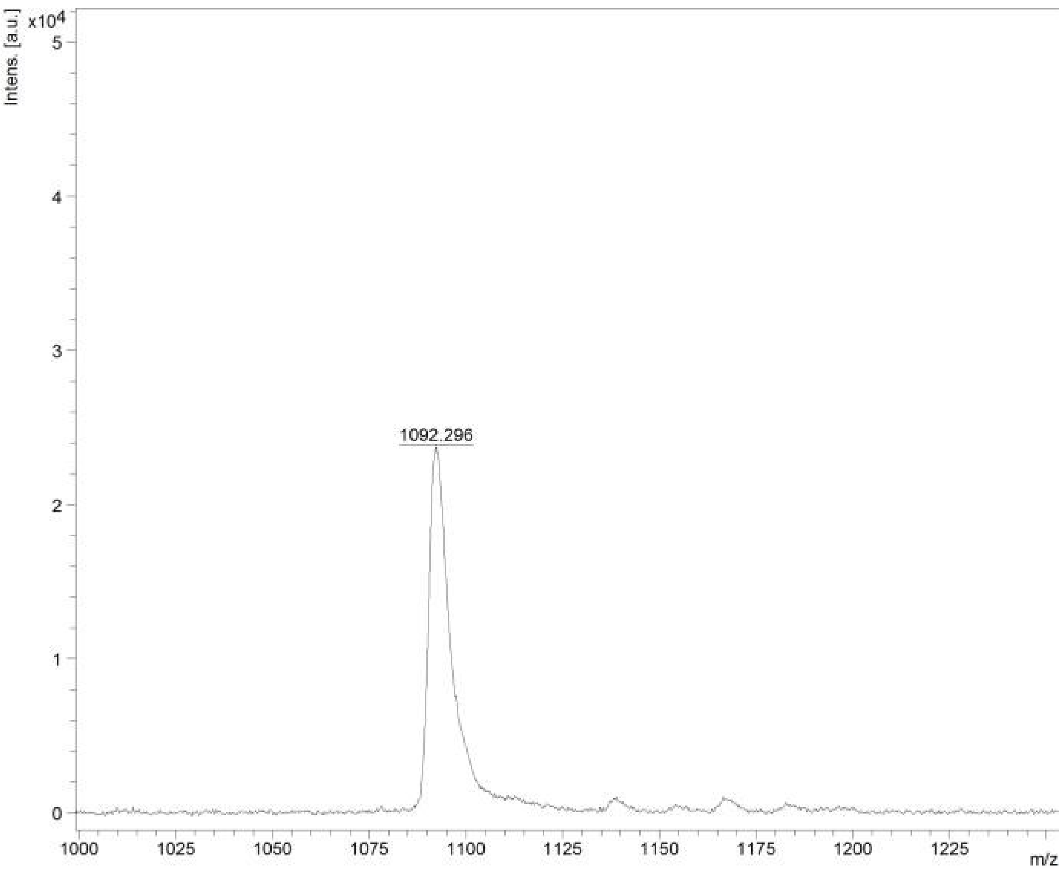

Fig. S15 The MALDI-TOF MS specturm of **BBT-SiPc**

1.6 Characterization of **CBT-OH**

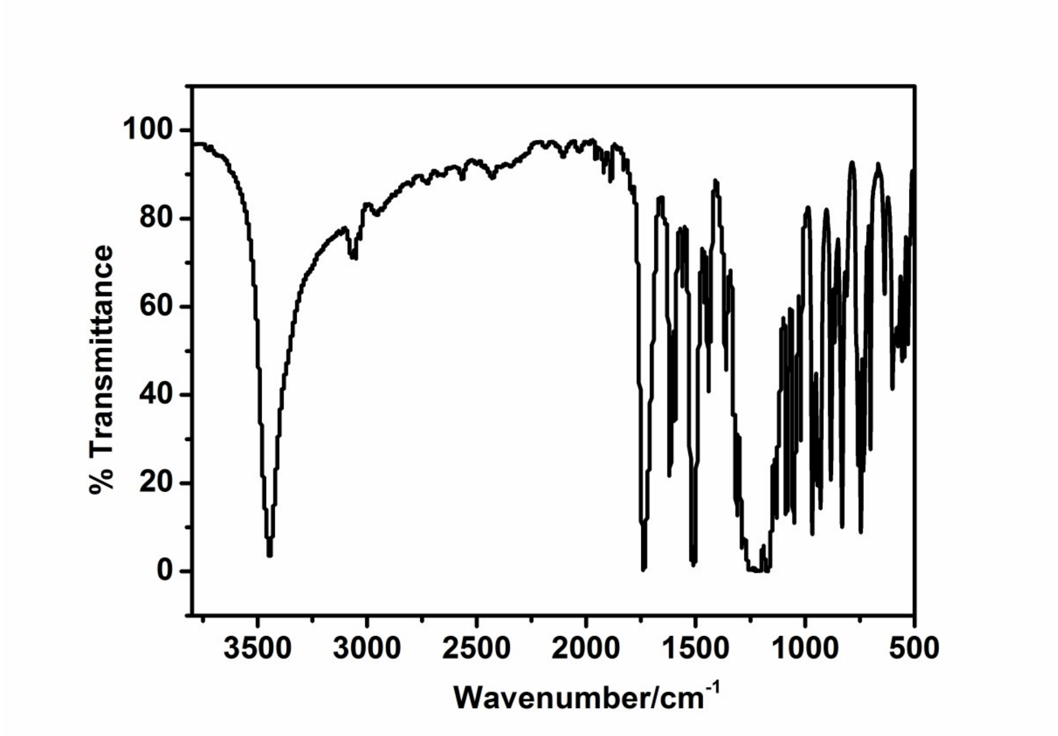

Fig. S16 The FT-IR specturm of **CBT-OH**

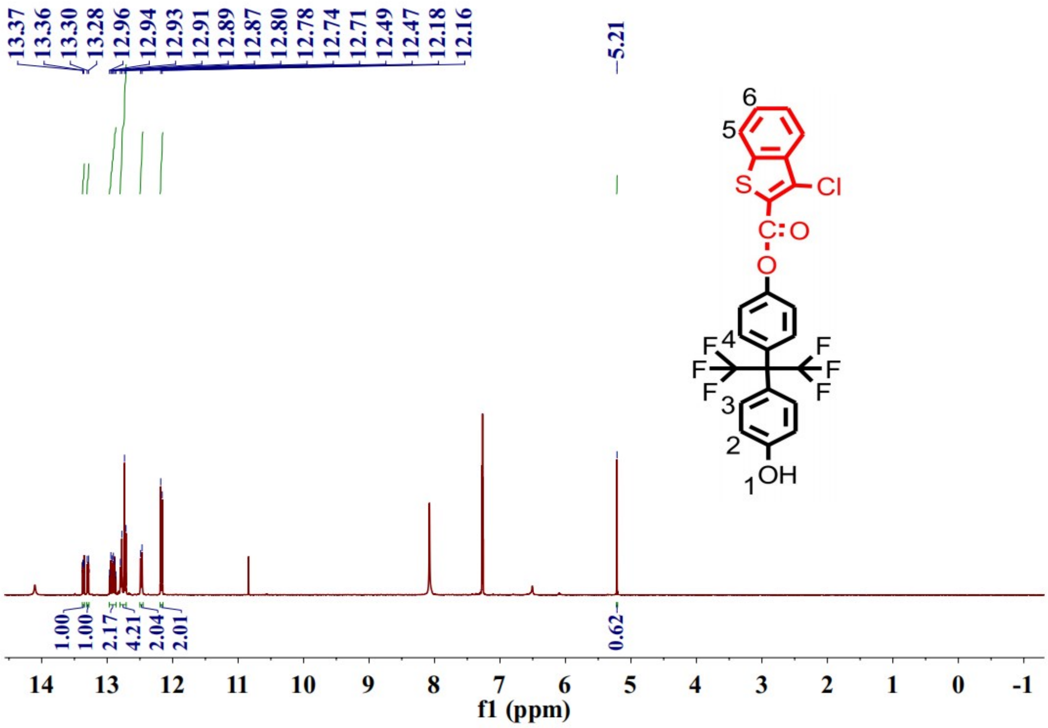

Fig. S17 The ^{1}H NMR specturm of **CBT-OH** ($CDCl_3$, 400MHz)

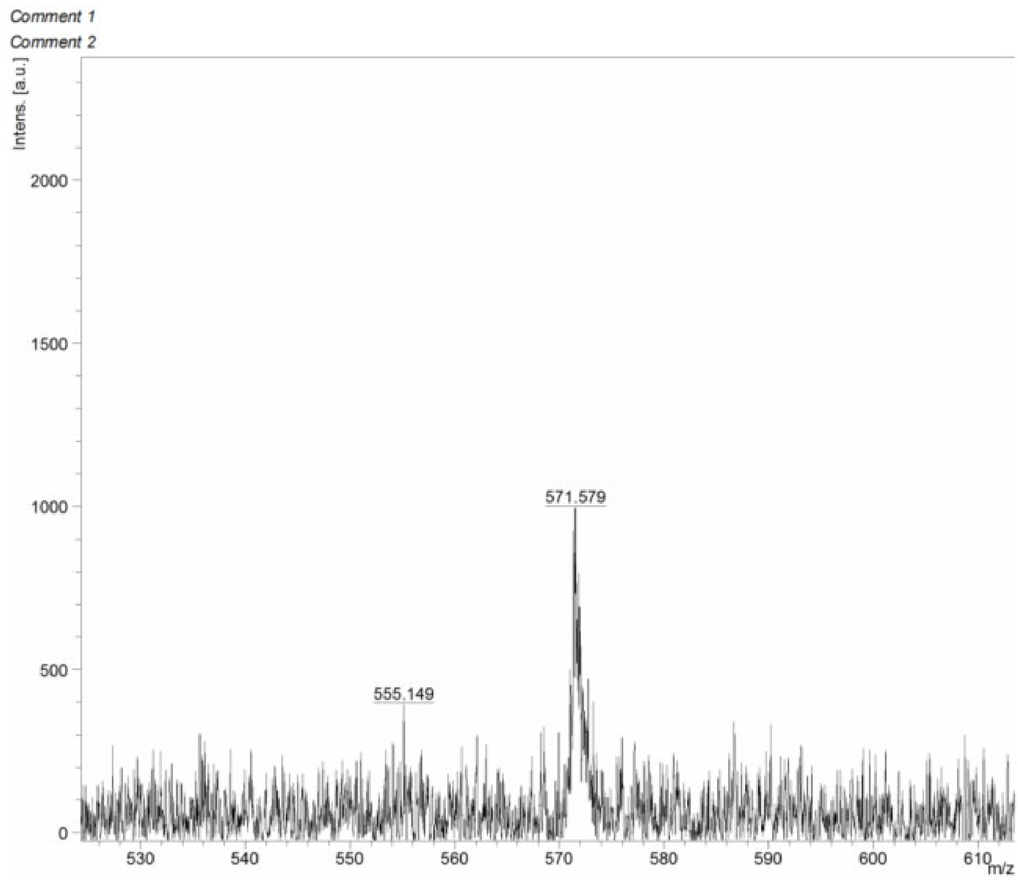

Fig. S18 The MALDI-TOF MS specturm of **CBT-OH**

1.7 Characterization of **CBT-SiPc**

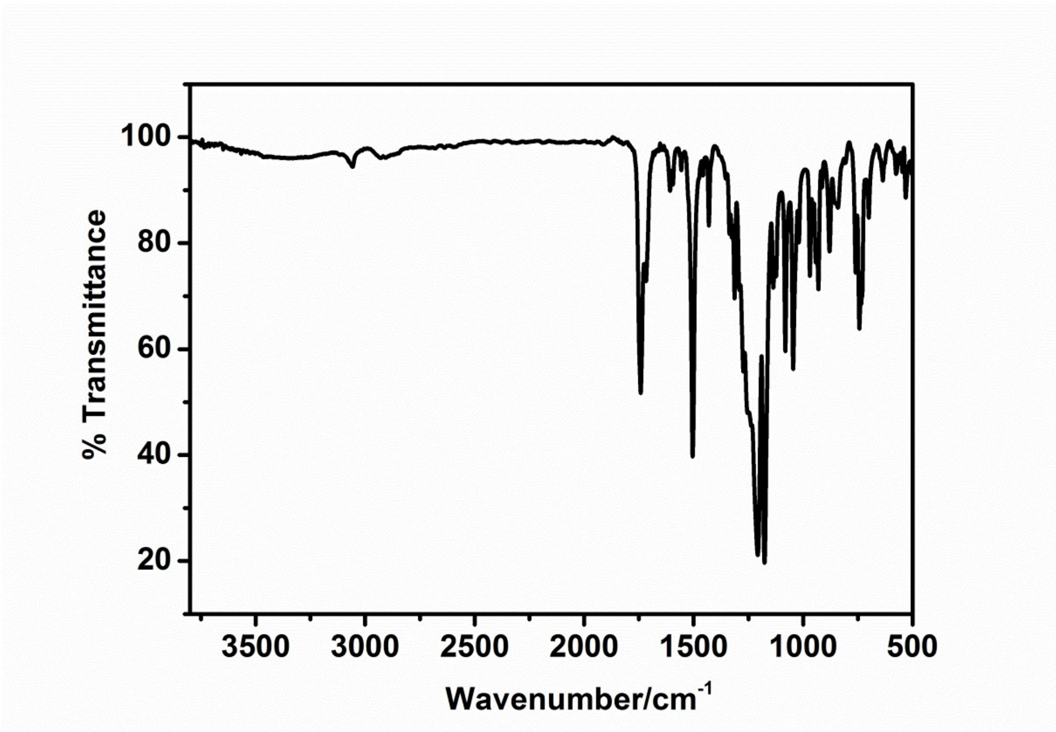

Fig. S19 The FT-IR specturm of **CBT-SiPc**

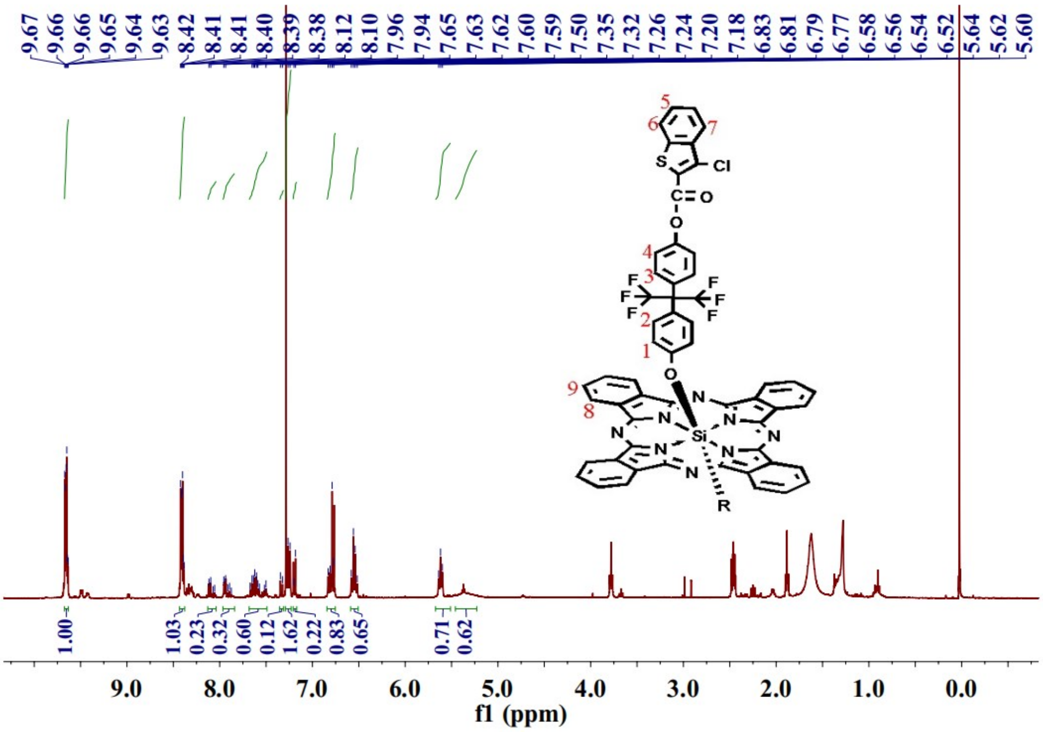

Fig. S20 The ^1H NMR spectrum of **CBT-SiPc** ($CDCl_3$, 400 MHz).

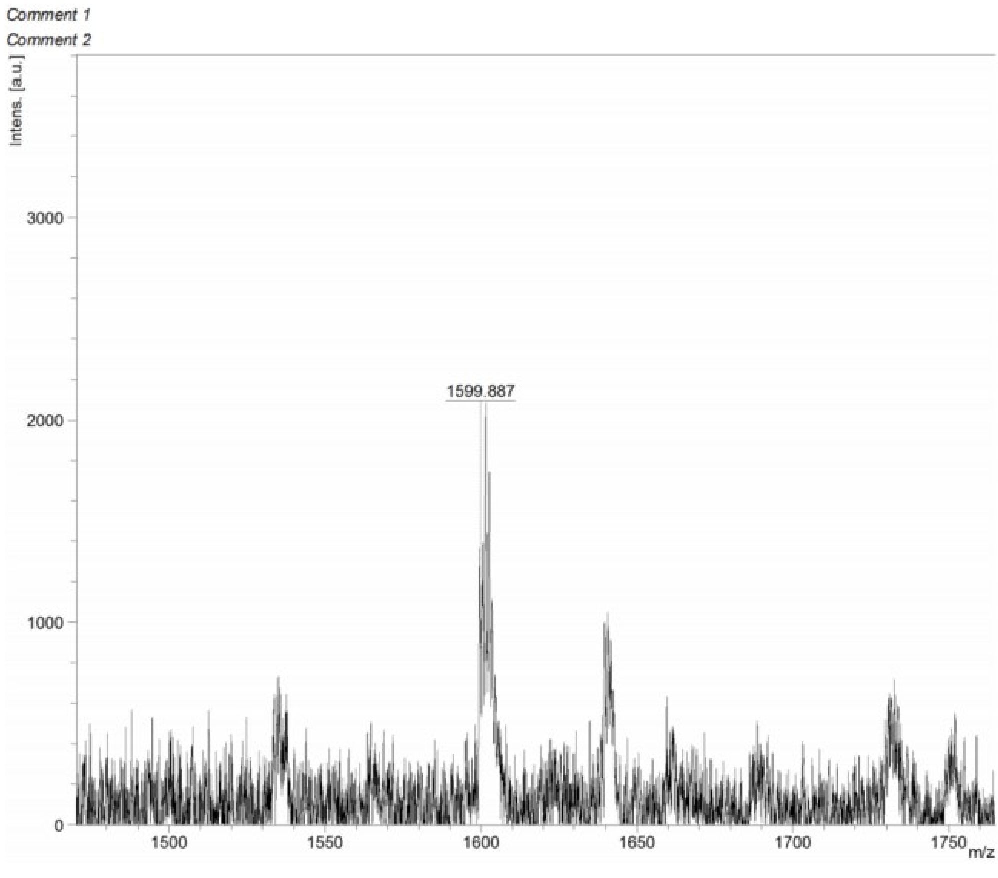

Fig. S21 The MALDI-TOF MS specturm of **CBT-SiPc**

2. Photophysical properties

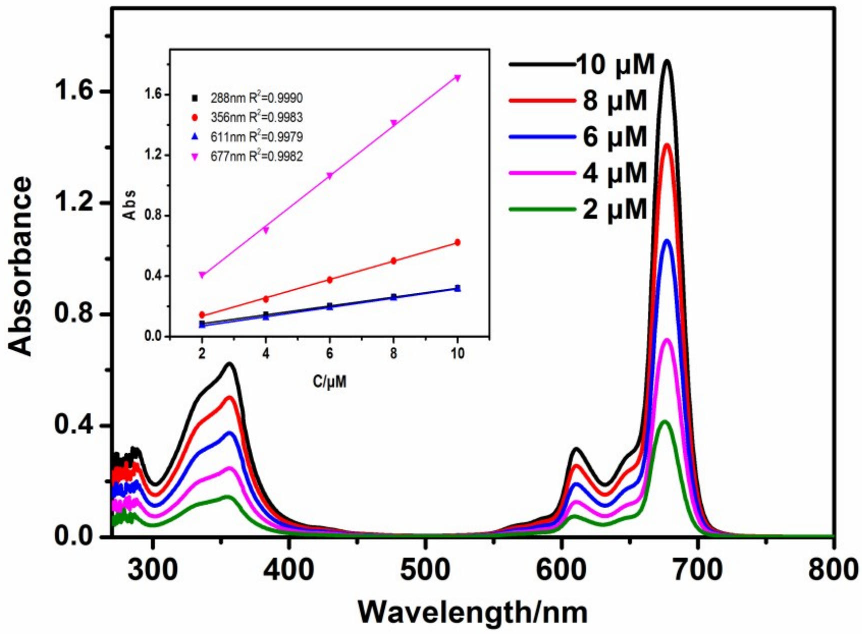

Fig. S22 UV-Vis spectra of **M2SiPc** in DMF. (The inset shows the absorbance at 288 nm, 356 nm, 611 nm and 677 nm as a function of its concentration).

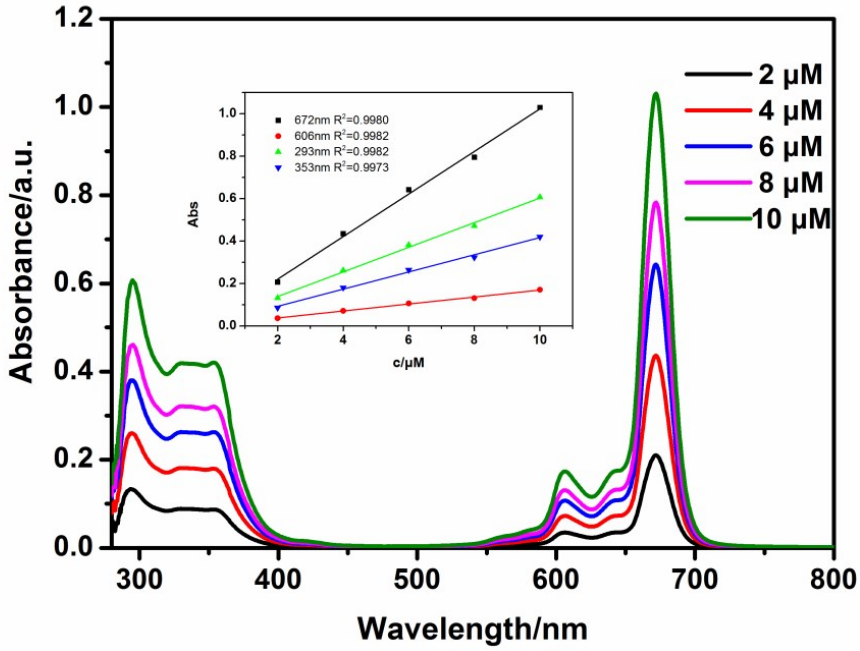

Fig. S23 UV-Vis spectra of **BBT-SiPc** in DMF. (The inset shows the absorbance at 293 nm, 353 nm, 606 nm and 672 nm as a function of its concentration).

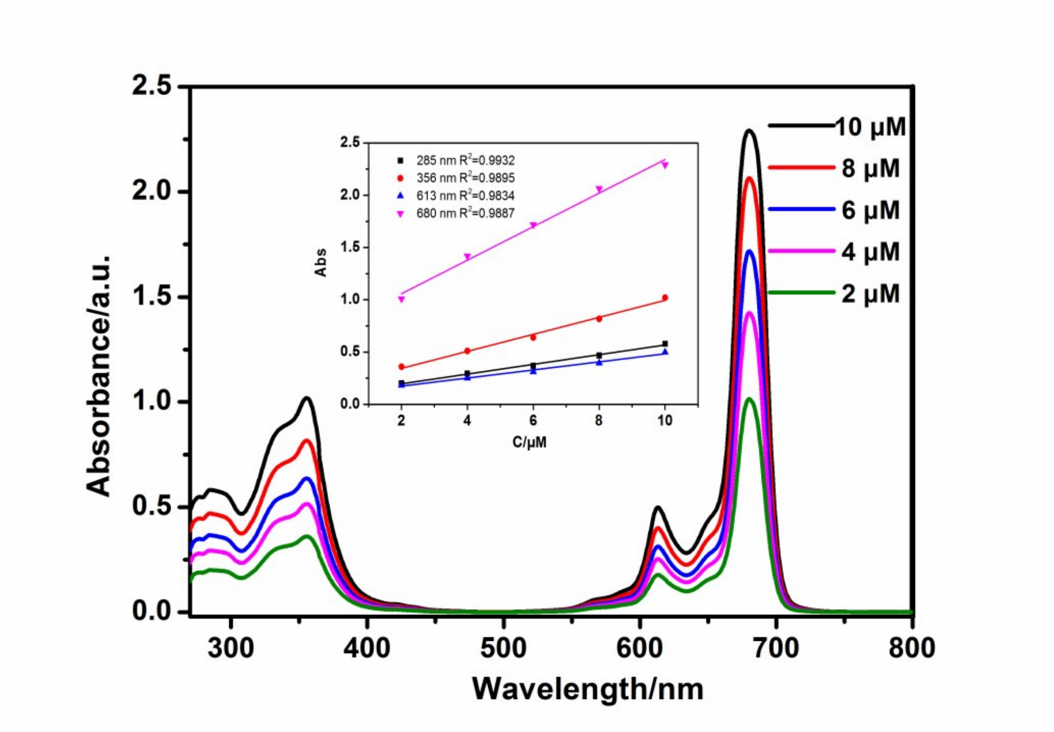

Fig. S24 UV-Vis spectra of **CBT-SiPc** in DMF. (The inset shows the absorbance at 285 nm, 356 nm, 613 nm and 680 nm as a function of its concentration).

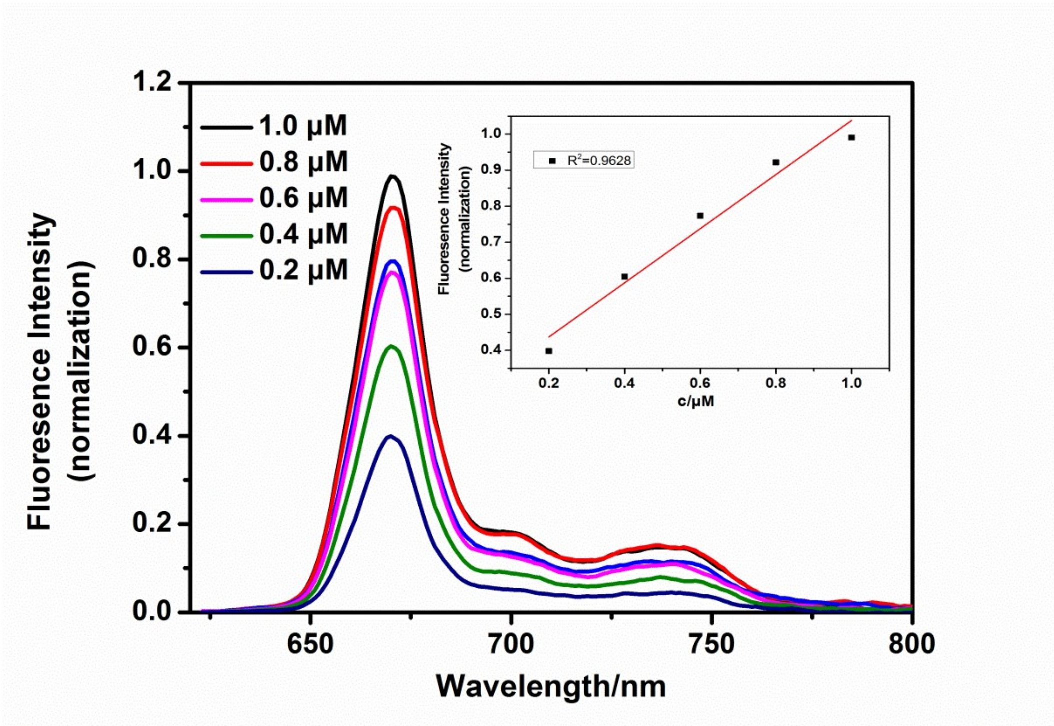

Fig. S25 Fluoresence spectra of **M2SiPc** in DMF. (The inset shows the fluoresence intensity at 684 nm as a function of its concentration, λ_{ex}=612 nm).

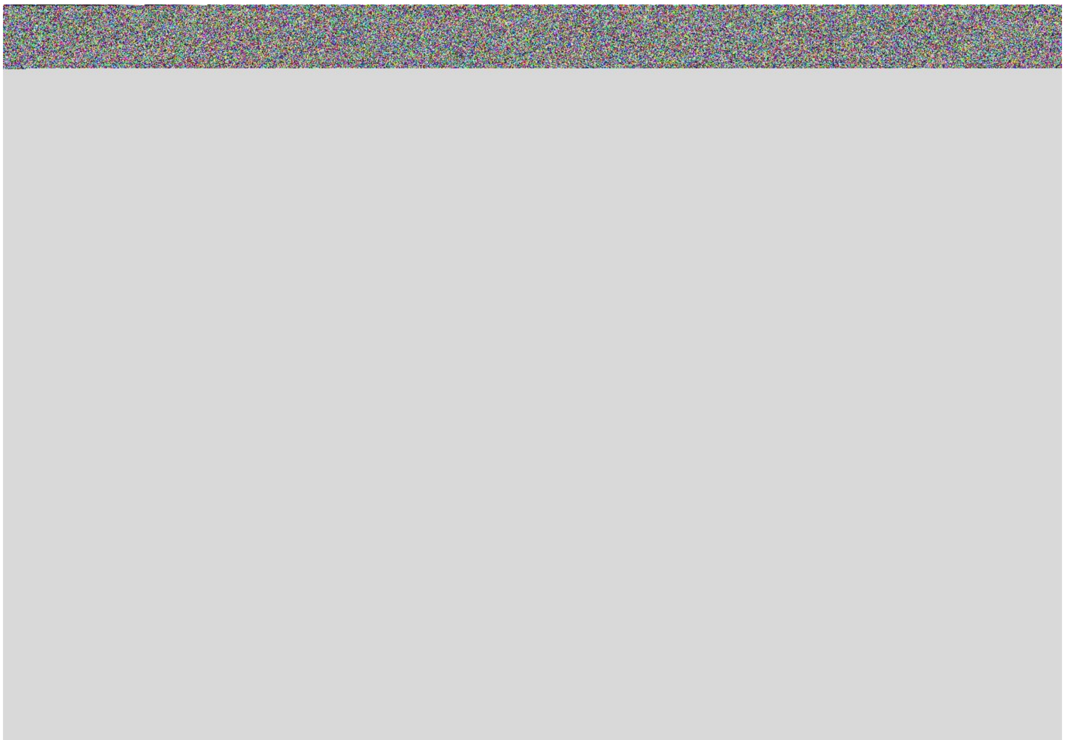

Fig. S26 Fluoresence spectra of **BBT-SiPc** in DMF (The inset shows the fluoresence intensity at 669 nm as a function of its concentration, λ_{ex}=610 nm).

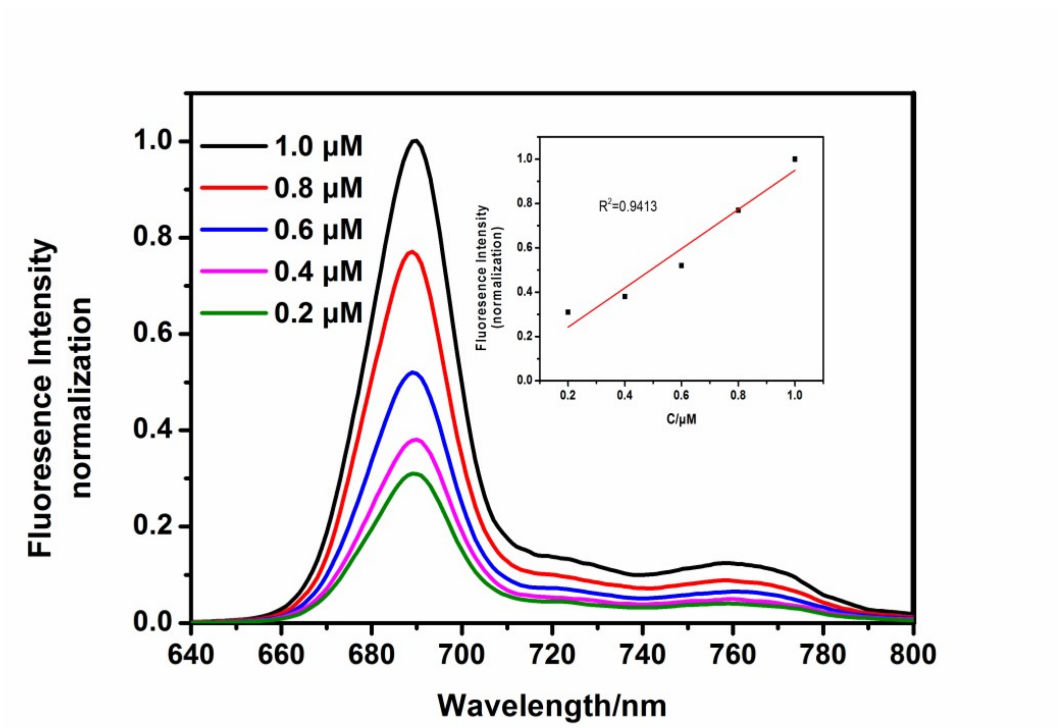

Fig. S27 Fluoresence spectra of **CBT-SiPc** in DMF (The inset shows the fluoresence intensity at 690 nm as a function of its concentration, λ_{ex}=615 nm).

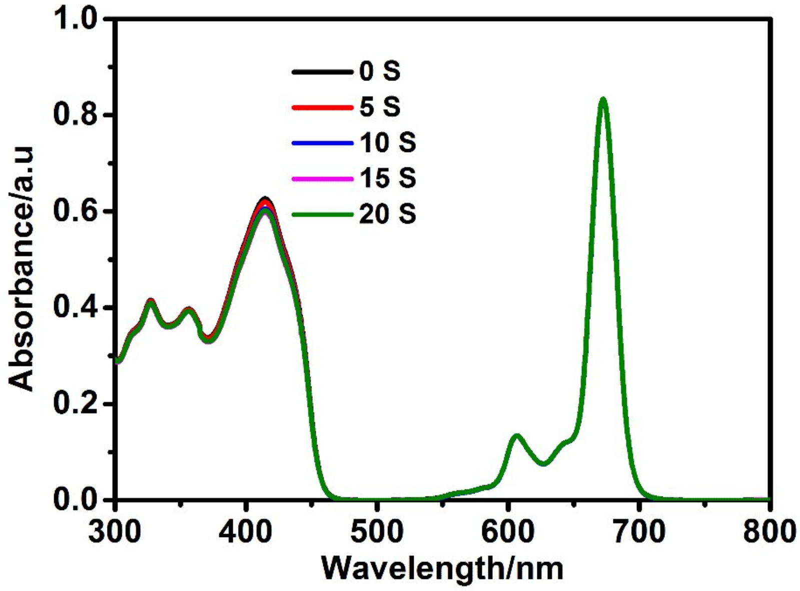

Fig. S28 The spectra changes during the determination of singlet oxygen quantum yield of **M2SiPc** in DMF using DPBF as a singlet oxygen quencher in the dark at a concentration of 1.0×10^{-5} mol/L.

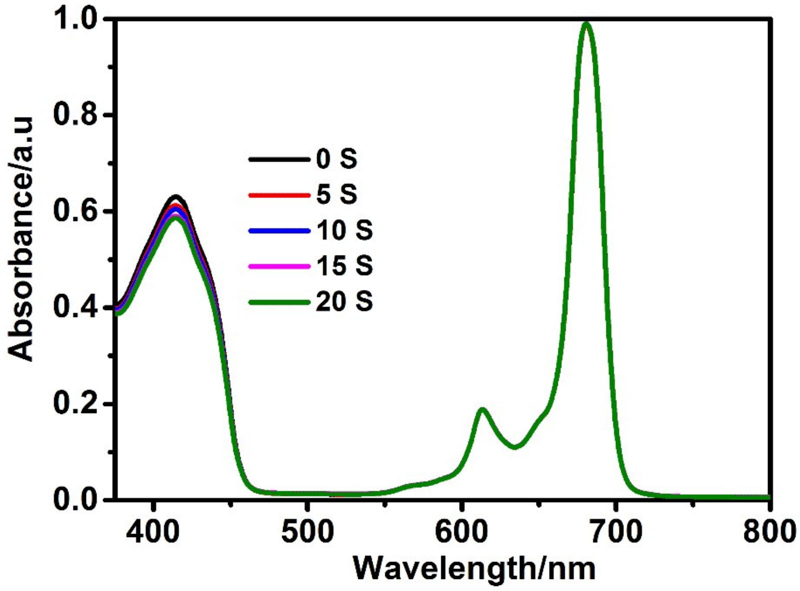

Fig. S29 The spectra changes during the determination of singlet oxygen quantum yield of **BBT-SiPc** in DMF using DPBF as a singlet oxygen quencher in the dark at a concentration of 1.0×10^{-5} mol/L.

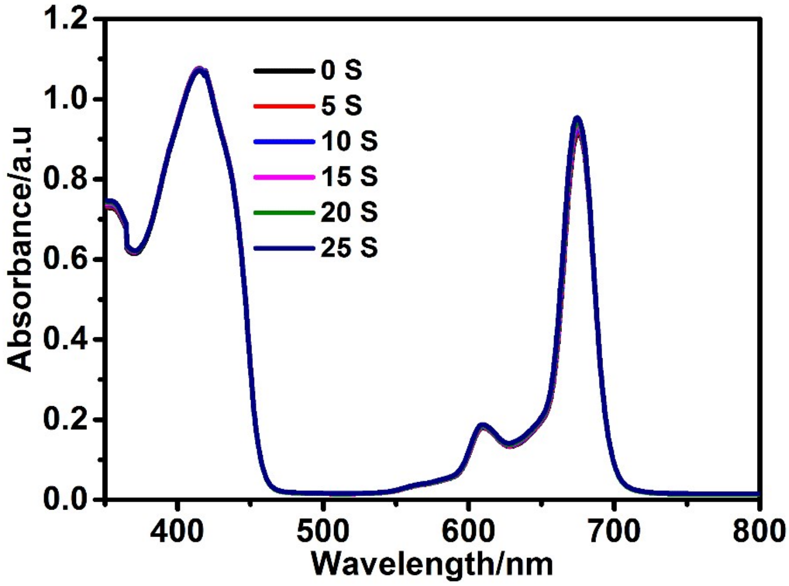

Fig. S30 The spectra changes during the determination of singlet oxygen quantum yield of **CBT-SiPc** in DMF using DPBF as a singlet oxygen quencher in the dark at a concentration of 1.0×10^{-5} mol/L.

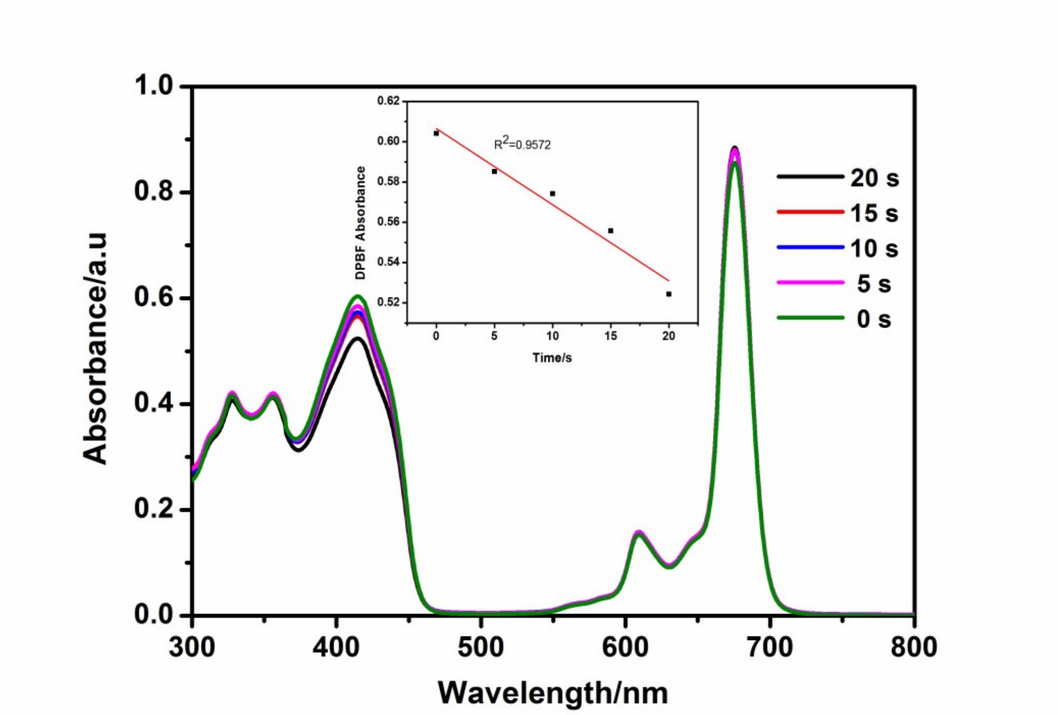

Fig. S31 The spectra changes during the determination of singlet oxygen quantum yield of **M2SiPc** in DMF using DPBF as a singlet oxygen quencher upon irradiation (670 nm, 9 mW/cm^2) at a concentration of 1.0×10^{-5} mol/L, inset: The plot of absorbance change of DPBF *vs* time.

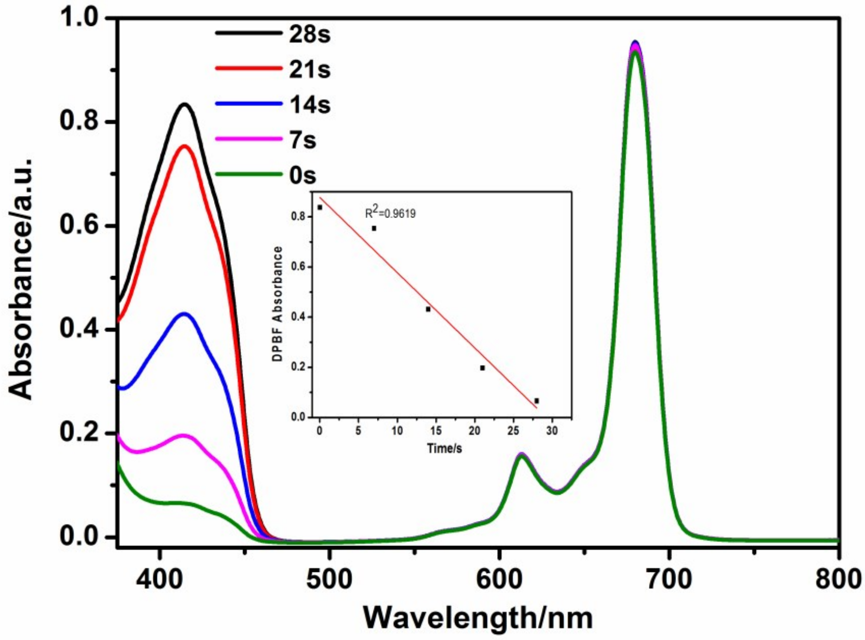

Fig. S32 The spectra changes during the determination of singlet oxygen quantum yield of **CBT-SiPc** in DMF using DPBF as a singlet oxygen quencher upon irradiation (670 nm, 9 mW/cm^2) at a concentration of 1.0×10^{-5} mol/L, inset: The plot of absorbance change of DPBF *vs* time.