**Supporting Information**

**“****Synthesis of aminated polystyrene and its self-assembly with nanoparticles at oil/water interface”**

The chemical structure of the chain transfer agent was characterized by 1H NMR (Figure S1) and 13C NMR (Figure S2).



**Figure S1.** 1H NMR of chain transfer agent.

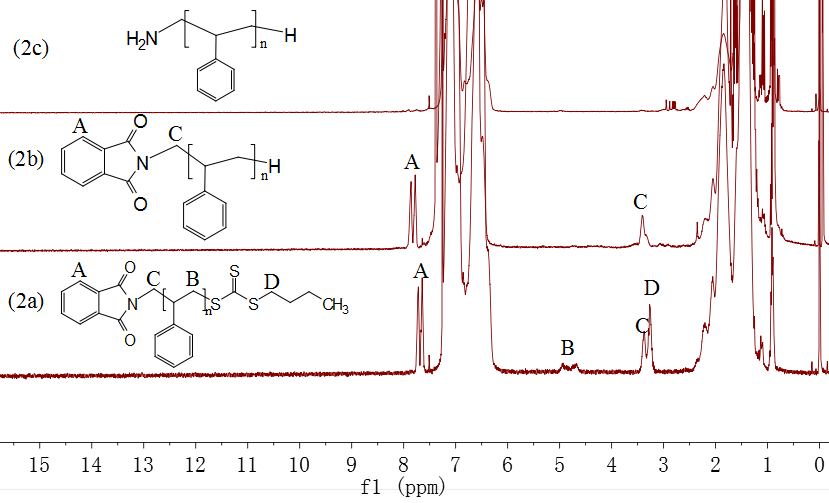
1H NMR δ(ppm): 0.93(t, J = 7.4 Hz, 3H, C**H3**CH2CH2CH2-), 1.43(m, J = 7.4 Hz, 2H, CH3C**H2**CH2CH2-), 1.68(t, J = 7.5 Hz, 2H, CH3CH2C**H2**CH2-), 3.38(m, 2H, C3H7C**H2**-S-), 5.66(s, 2H, N-C**H2**-S), 7.75(dd, J = 5.5,3.0 Hz, 2H, Ar-H) 7.88(dd, J = 5.5,3.1 Hz, 2H, Ar-**H)**.

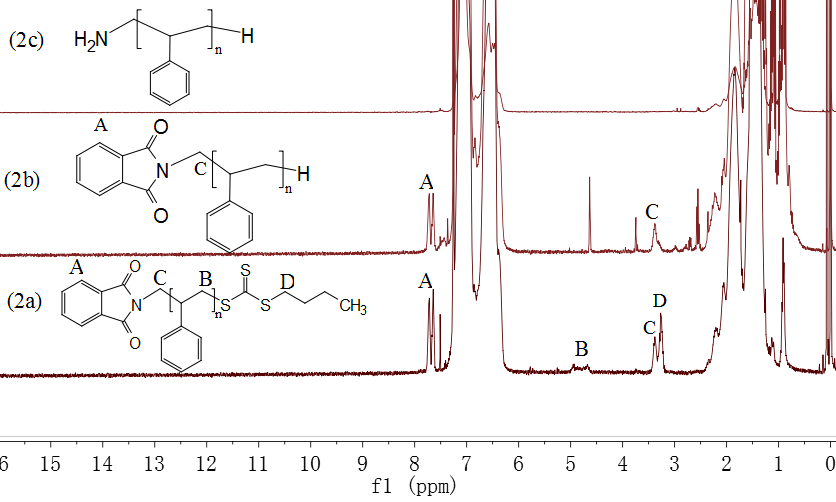


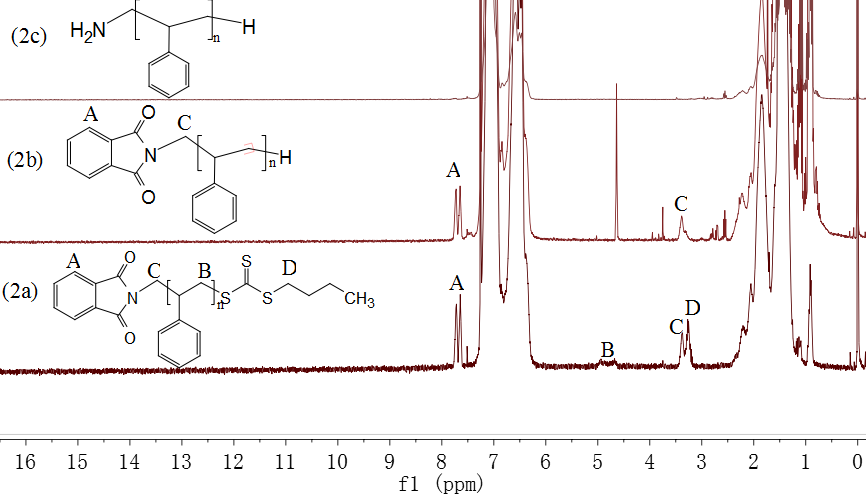
**Figure S2.** 13C NMR of chain transfer agent.

13C NMR δ(ppm): 13.6(**C**H3CH2CH2CH2-), 22.1(CH3**C**H2CH2CH2-), 29.9(CH3CH2**C**H2CH2-), 36.9(CH3CH2CH2**C**H2-), 41.9(N-**C**H2-S), 123.7(o-Ph,**C**H), 131.8(2×Ph,**C**), 134.4(p-Ph,**C**H), 166.6(**C**=O), 220.8(**C**S3).

Single amino PS was prepared by RAFT for 8, 12 and 24 h, and modified by removing trithiocarbonate and hydrazinolysis. The structure of the polymers was characterized by 1H NMR, as shown in Figure S3.

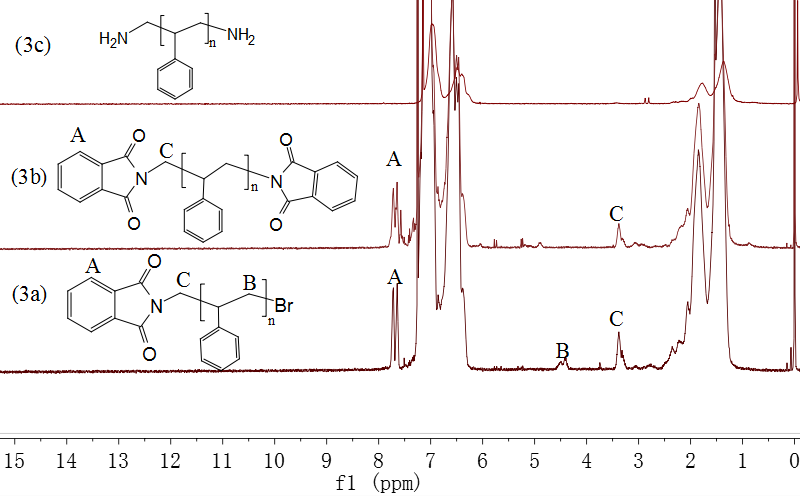






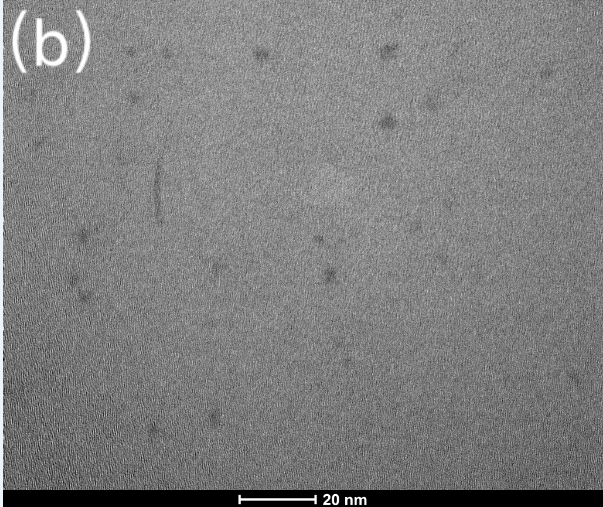
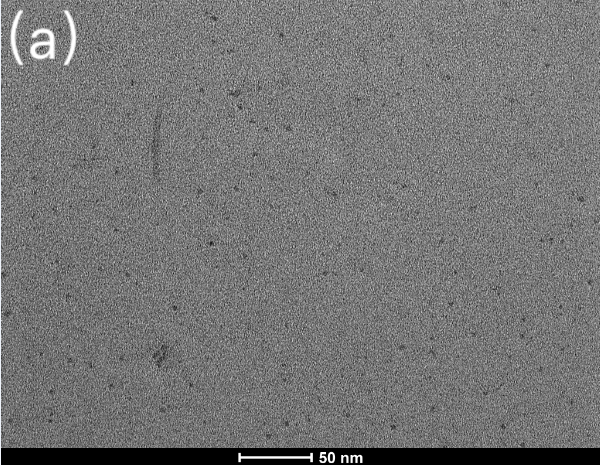
**Figure S3.** 1H NMR spectra of 2a, 2b and 2c. A: aromatic protons of phthalimide group Ar-**H**; B: Ph-C**H2**-S-; C: phthalimide-C**H**2; D: -S-C**H2**-C3H7.

The H2N-PS-NH2 was prepared by ATRP polymerization for 3 h and modified by the Gabriel method. The products were characterized by 1H NMR, as shown in Figure S4.



**Figure S4.** 1H NMR spectra of 3a, 3b and 3c; A: aromatic protons of phthalimide group Ar-**H**; B: Ph-C**H**-Br; C: phthalimide-C**H2**.

The micromorphology of the CNCs-OSO3H was studied using TEM (1 mg/mL solution) analysis, and the results are presented in Figure S5. The average particle size of the CNCs-OSO3H was 2.71 nm.





**Figure S5.** (a, b) TEM observation and (c) particle size distribution of CQDs-SO3H.

Figure S6(a–e) shows the interfacial tension of the GO-SO3H/surfactants at various pH, similar to that of the CNC-OSO3H/surfactants.







**Figure S6.** Aminated PS (1 mg/mL) compounding with GOs-SO3H (10 mg/mL) at various pH. (a) PS-NH2 (*Mw* = 0.6 k); (b) PS-NH2 (*Mw* = 2.5 k); (c) PS-NH2 (*Mw* = 3.5 k); (d) PS-NH2 (*Mw* = 3.9 k); (e) H2N-PS-NH2 (*Mw* = 1.1 k); (f) H2N-PS-NH2 (*Mw* = 2.8 k).