

Electronic Supplementary Information for RSC Adv.

Synthesis, characterization and evaluation of branched dodecyl phenol polyoxyethylene ethers: a novel class of surfactants with excellent wetting properties

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1. General Information

^1H NMR spectra were taken on 500 MHz instruments and spectral data were reported in ppm relative to tetramethylsilane (TMS) as the internal standard and DMSO- d_6 as the solvent. All coupling constants (J) are reported in Hz with the following abbreviations: s = singlet, d = doublet, dd = double doublet, ddd = double doublet of doublets, t = triplet, dt = double triplet, q = quartet, m = multiplet, br = broad.

2. Characterization Data

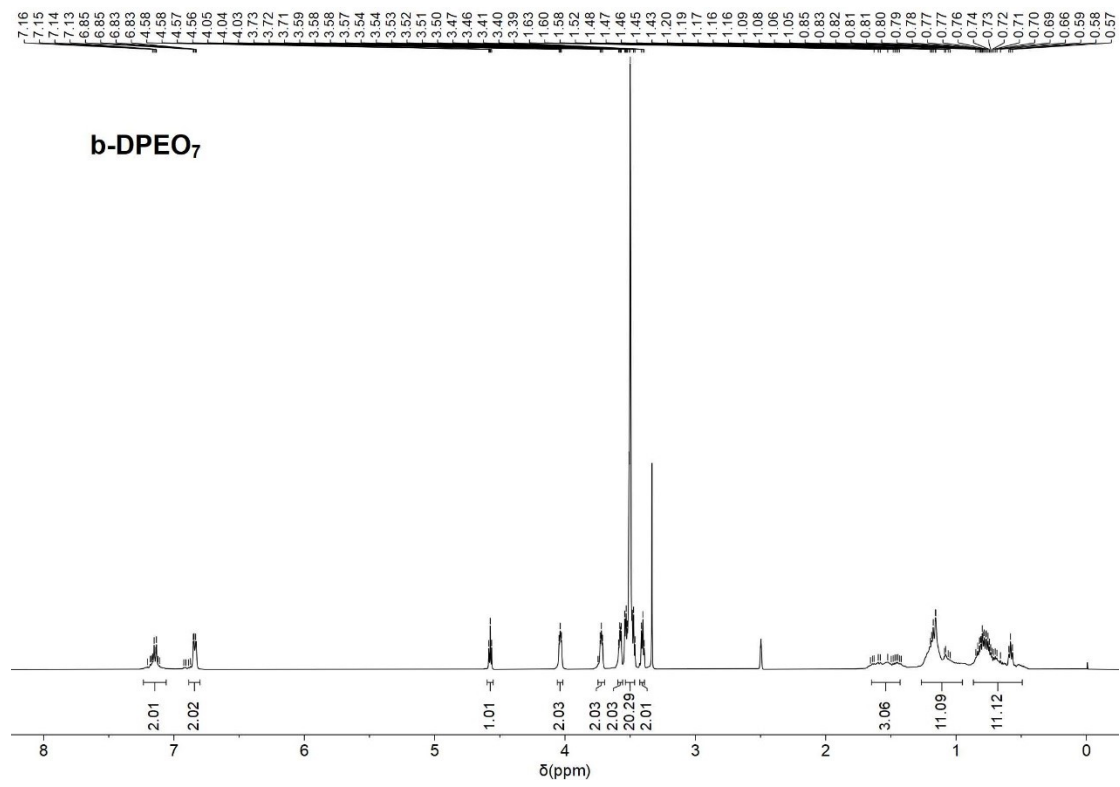
b-DPEO₇: ^1H NMR (500 MHz, DMSO- d_6) δ 7.23 - 7.06 (m, 2H), 6.89 - 6.80 (m, 2H), 4.60 - 4.55 (m, 1H), 4.06 - 4.02 (m, 2H), 3.75 - 3.70 (m, 2H), 3.59 - 3.56 (m, 2H), 3.54 - 3.47 (m, 20H), 3.43 - 3.39 (m, 2H), 1.65 - 1.43 (m, 3H), 1.27 - 0.95 (m, 11H), 0.87 - 0.49 (m, 11H).

b-DPEO₁₀: ^1H NMR (500 MHz, DMSO- d_6) δ 7.24 - 7.07 (m, 2H), 6.89 - 6.79 (m, 2H), 4.60 - 4.56 (m, 1H), 4.07 - 4.01 (m, 2H), 3.75 - 3.71 (m, 2H), 3.60 - 3.57 (m, 2H), 3.55 - 3.46 (m, 32H), 3.43 - 3.40 (m, 2H), 1.65 - 1.44 (m, 3H), 1.26 - 0.96 (m, 11H), 0.86 - 0.48 (m, 11H).

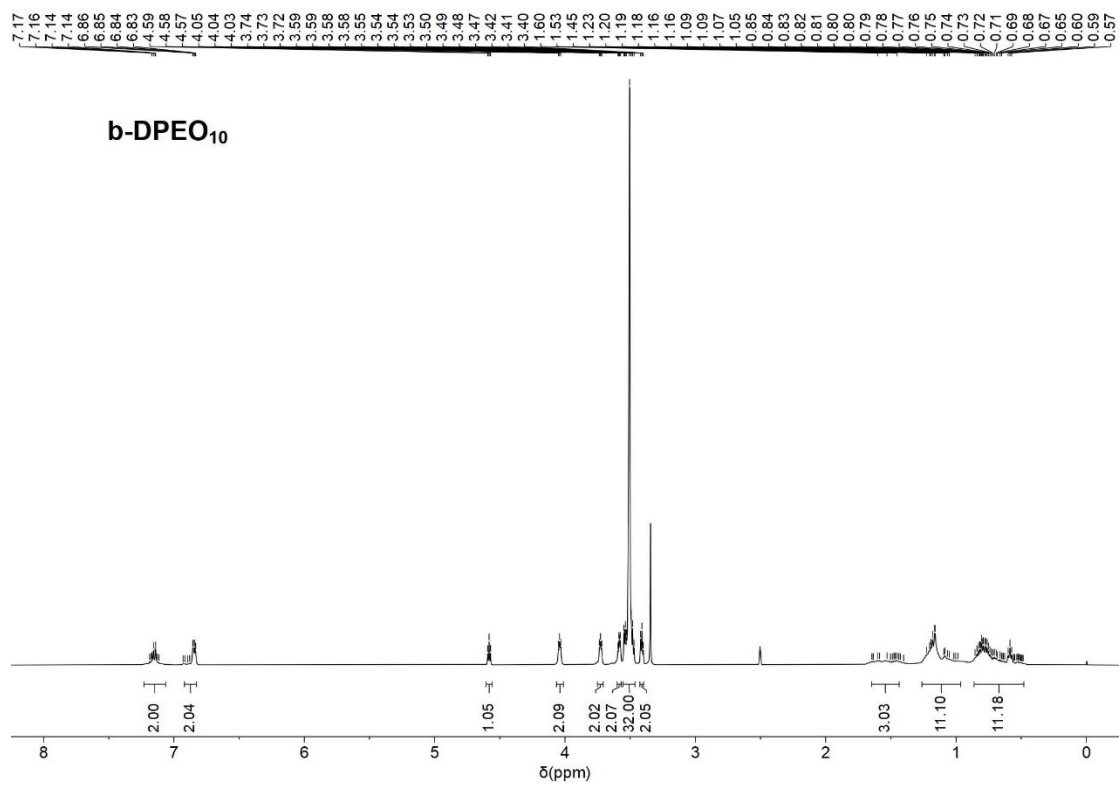
b-DPEO₁₂: ^1H NMR (500 MHz, DMSO- d_6) δ 7.22 - 7.08 (m, 2H), 6.90 - 6.82 (m, 2H), 4.59 - 4.56 (m, 1H), 4.06 - 4.02 (m, 2H), 3.75 - 3.71 (m, 2H), 3.60 - 3.57 (m, 2H), 3.56 - 3.45 (m, 40H), 3.42 - 3.40 (m, 2H), 1.65 - 1.44 (m, 3H), 1.24 - 0.96 (m, 11H), 0.84 - 0.50 (m, 11H).

c-DPEO₁₀: ^1H NMR (500 MHz, DMSO- d_6) δ 7.26 (d, J = 8.8 Hz, 2H), 6.83 (d, J = 8.6 Hz, 2H), 4.59 (s, 1H), 4.06 - 4.02 (m, 2H), 3.74 - 3.70 (m, 2H), 3.59 - 3.56 (m, 2H), 3.51 (d, J = 3.4 Hz, 35H), 3.39 (d, J = 22.3 Hz, 8H), 1.67 (s, 2H), 1.29 (s, 6H), 0.67 (s, 9H).

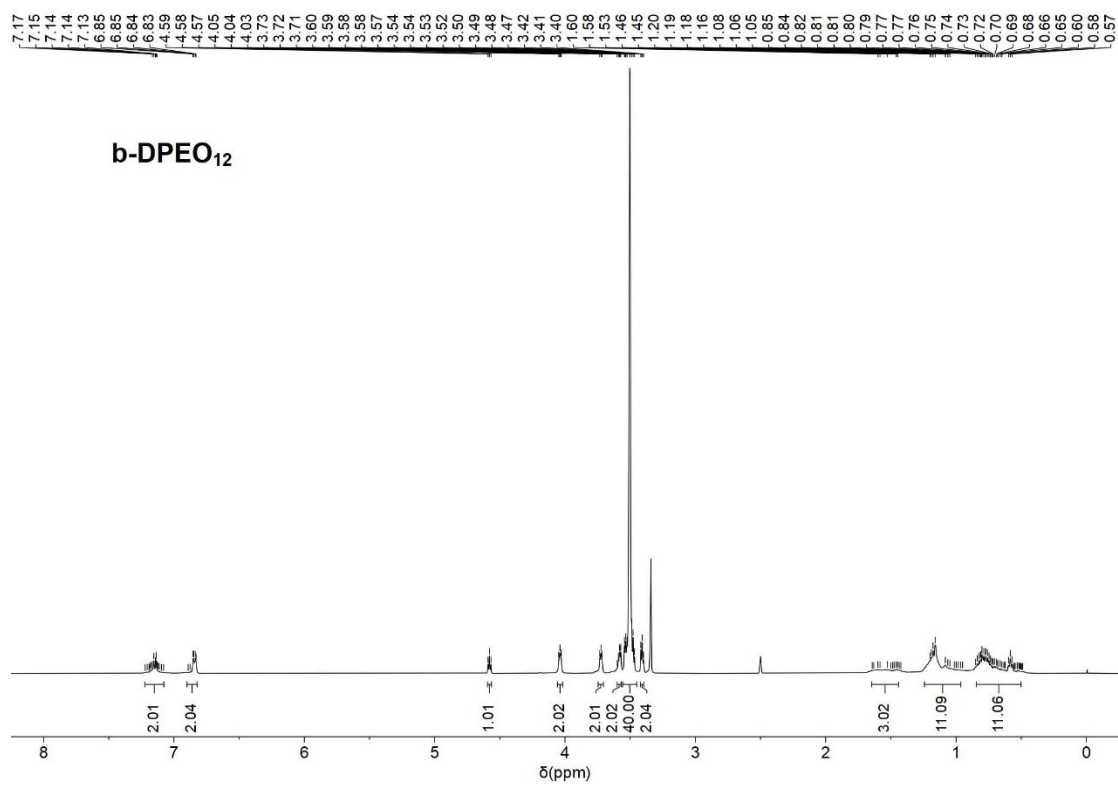
3. Copies of ^1H NMR Spectra



(a)

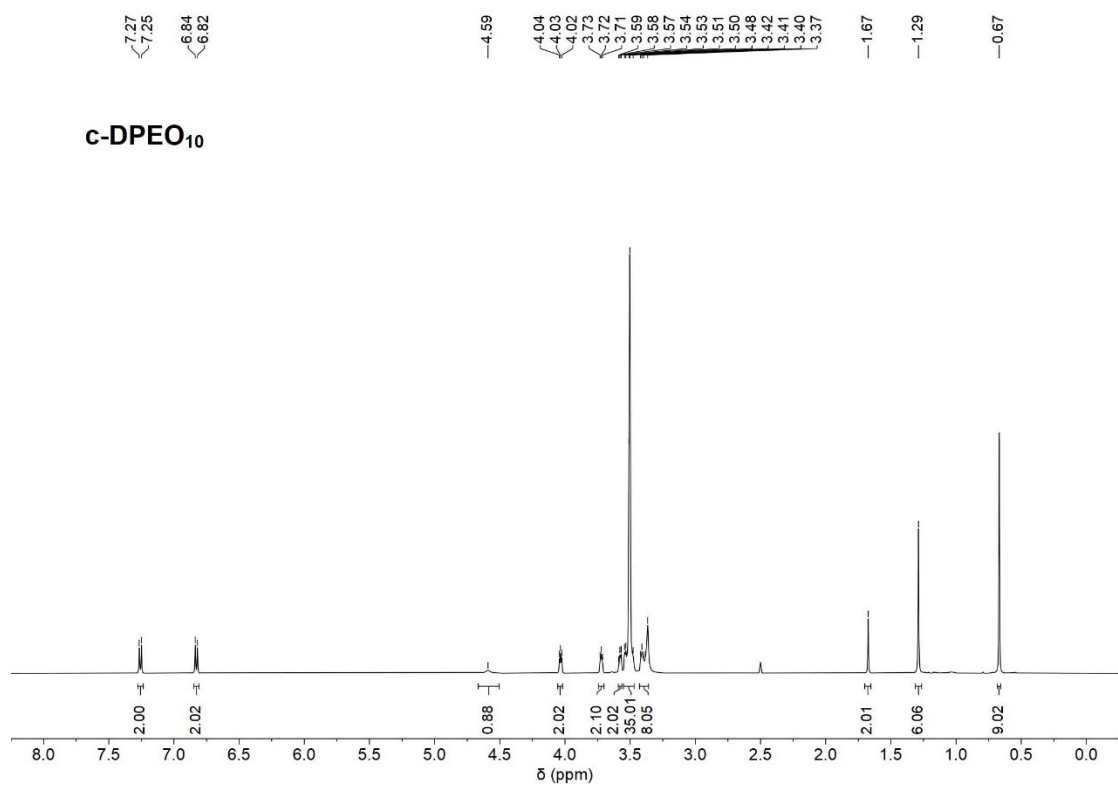


(b)



(c)

c-DPEO₁₀



(d)

Fig. S1. ¹H NMR spectra of b-DPEO₇ (a), b-DPEO₁₀ (b), b-DPEO₁₂ (c), c-DPEO₁₀ (d) in DMSO-d₆.