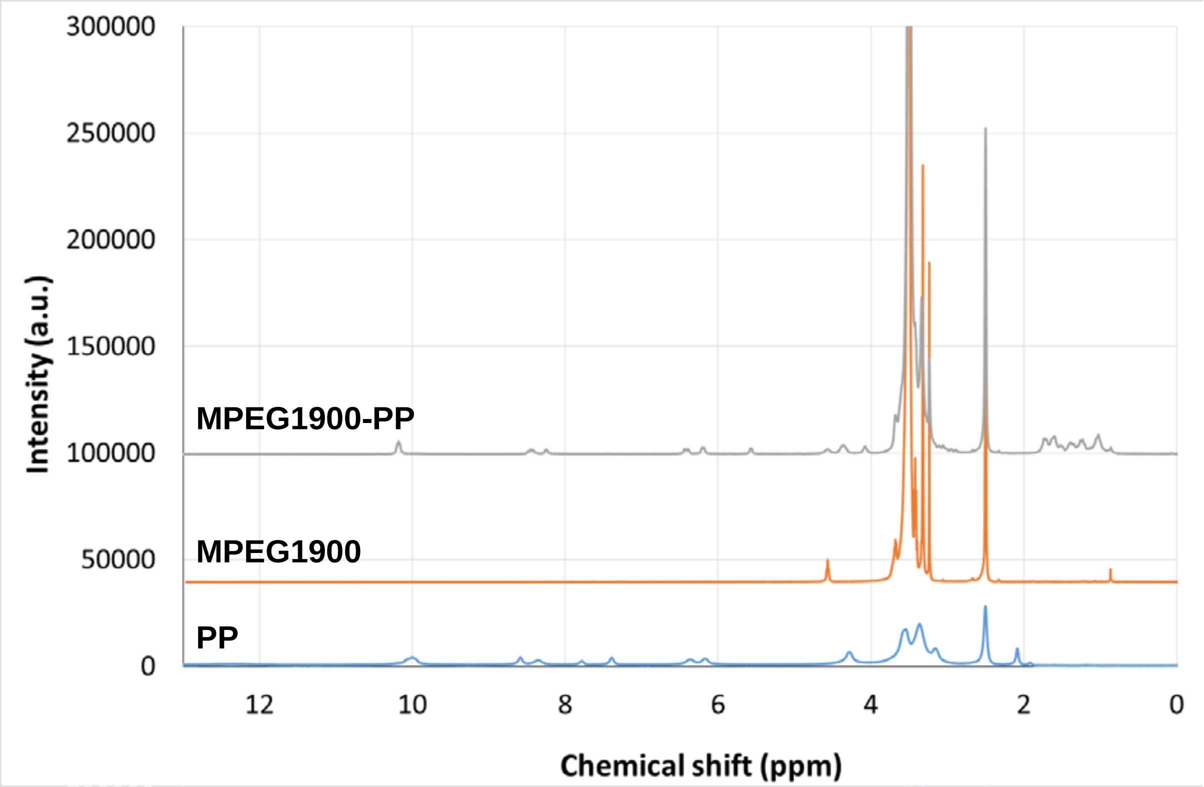
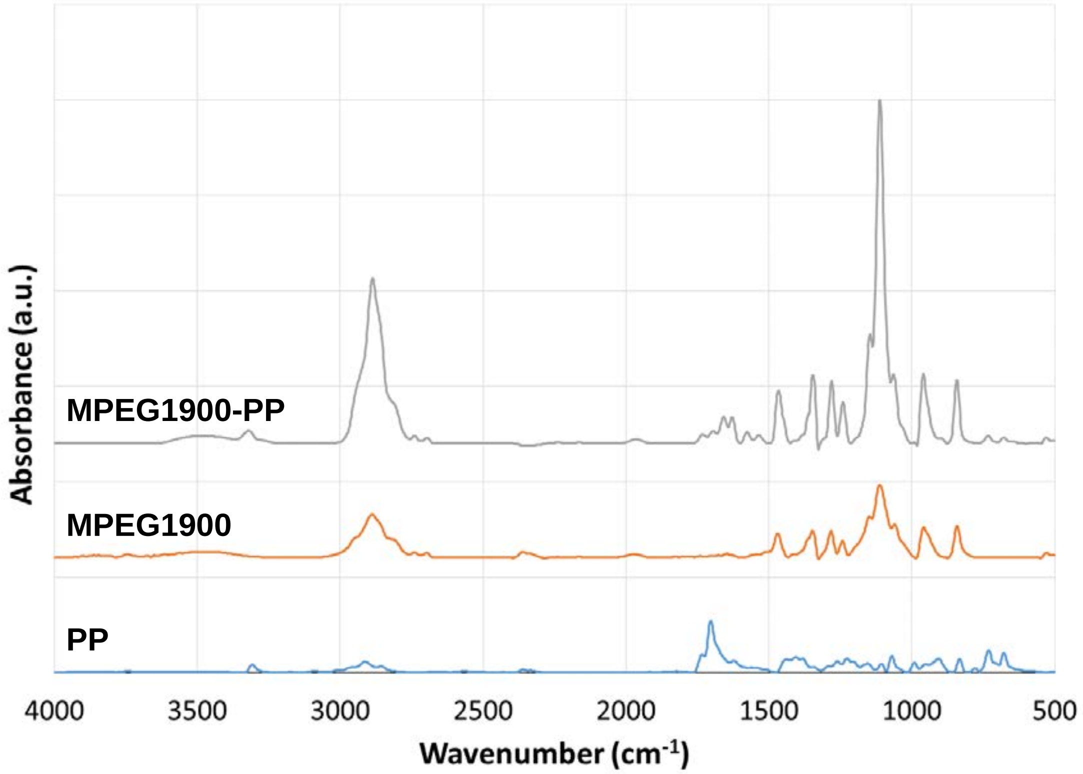
Supplementary information

Synthesis of CS-g-oligo(NiPAam) copolymer. CS (0.4 g) was dissolved in 100 mL of nitric acid aqueous solution (0.05 M) degassed by sonication (30 min). TEMED solution (0.18 mL in 50 mL of degassed water) was added to the CS solution and purged with N_2 (30 min) at RT. The CS solution was heated to 35ºC and the amount of NiPAam (0.8 g) dissolved in degassed water (48 mL, see above) and added. Finally, a CAN solution (0.66 g in 2 mL of degassed water) was added and the reaction conducted (6 h, 35ºC) under magnetic stirring and N_2 atmosphere. The product was purified by dialysis in water (48 h, regenerated cellulose dialysis membranes; MWCO of 12-14 kDa, Spectra/Por® 4 nominal flat width of 75 mm, diameter of 48 mm, and volume/length ratio of 18 mL/cm; Spectrum Laboratories, Inc.), frozen and freeze-dried to result in a yellowish powder that was stored at -24ºC until use.

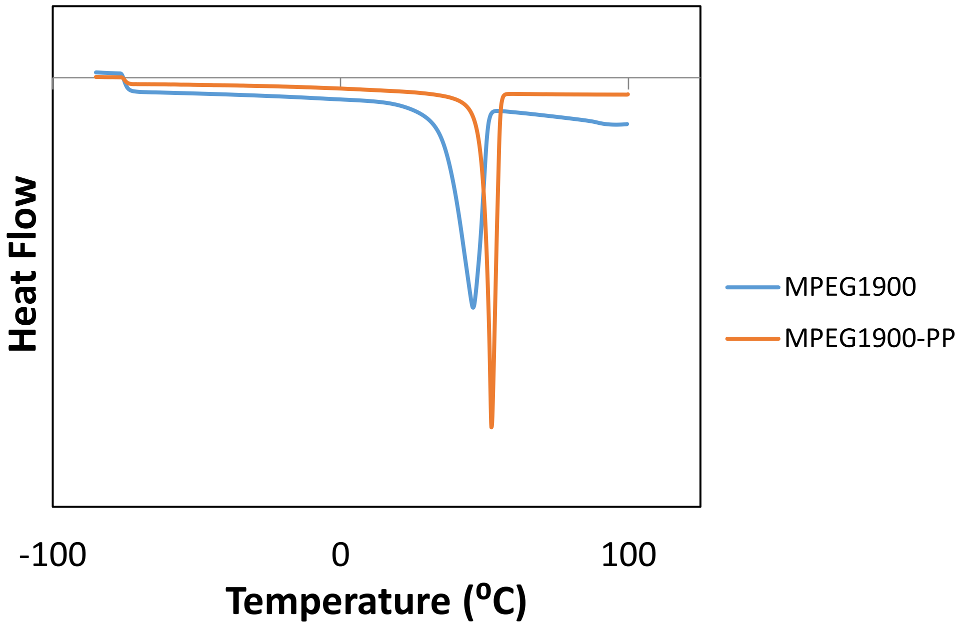
Supplementary Figures



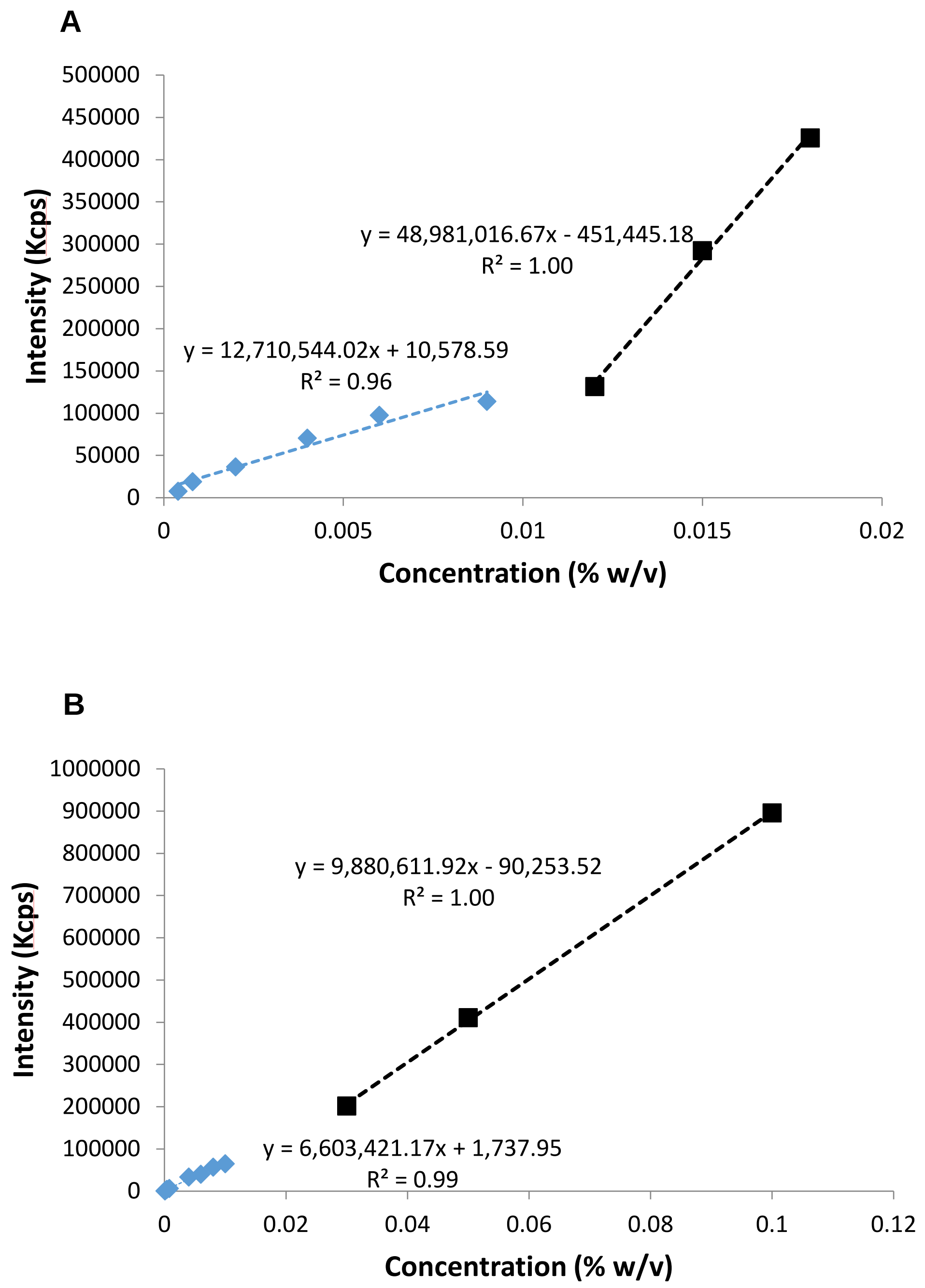
Supplementary Figure S1. ^{1}H-NMR spectra of pristine PP, MPEG 1900 and the conjugate.



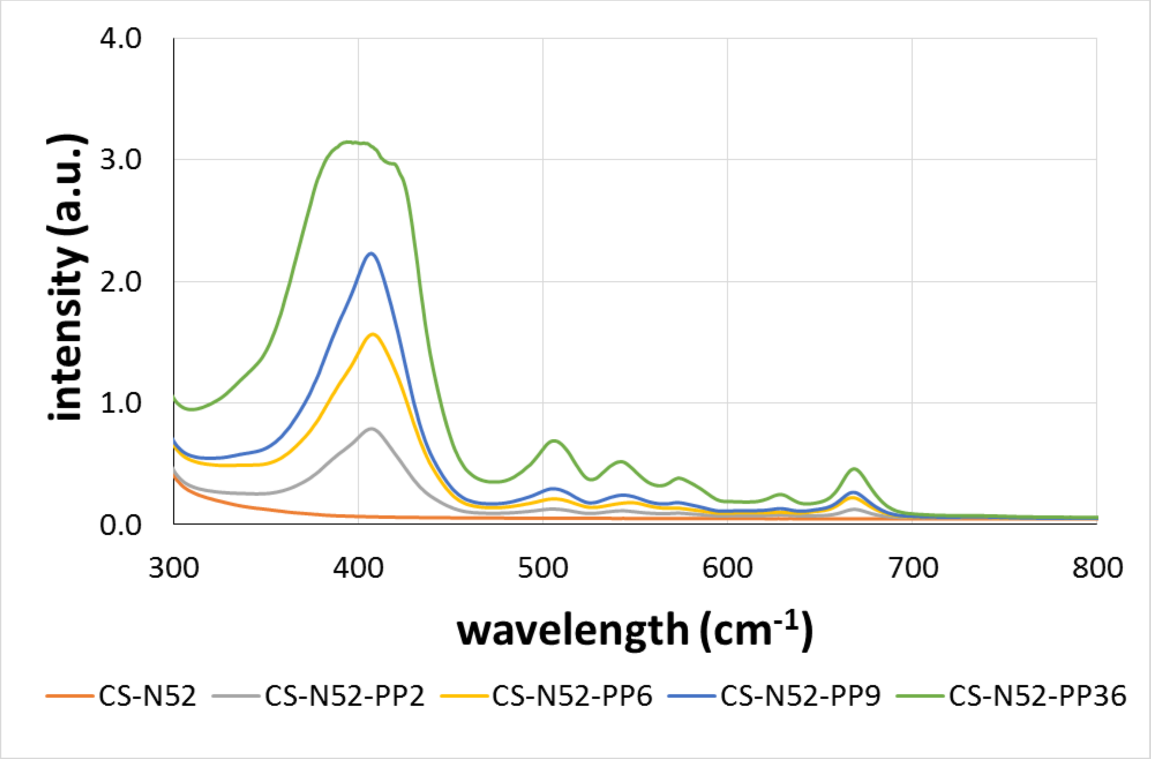
Supplementary Figure S2. FTIR spectra of PP, MPEG1900 and MPEG1900-PP.



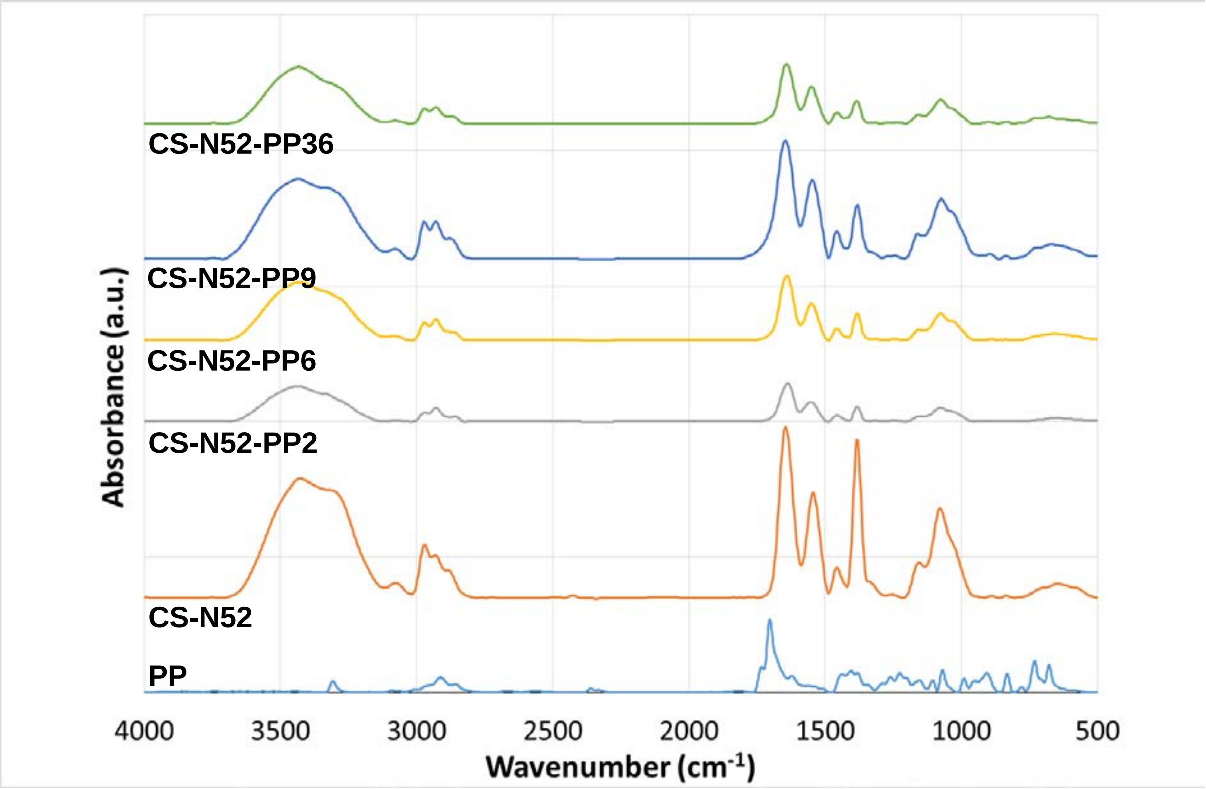
Supplementary Figure S3. Thermal behavior of MPEG 1900 and MPEG1900-PP, as measured by DSC.



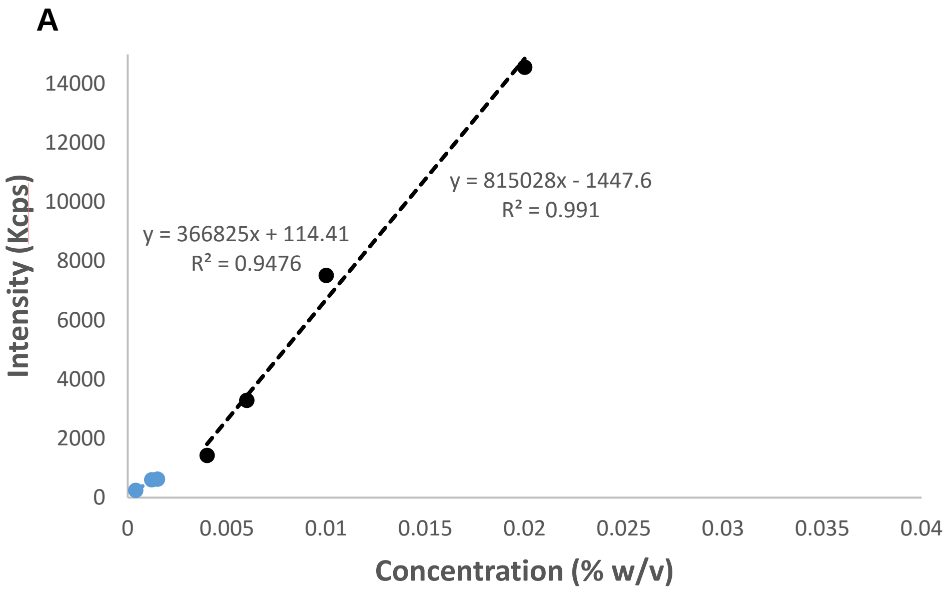
Supplementary Figure S4. Micellar concentration versus intensity of MPEG1900-PP at (A) 25°C and (B) 37°C, as determined by DLS.

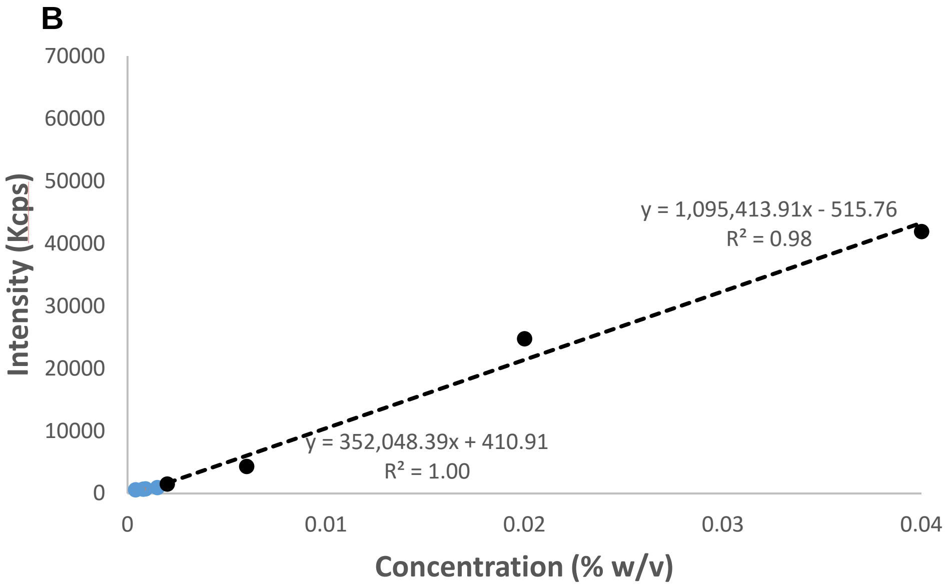


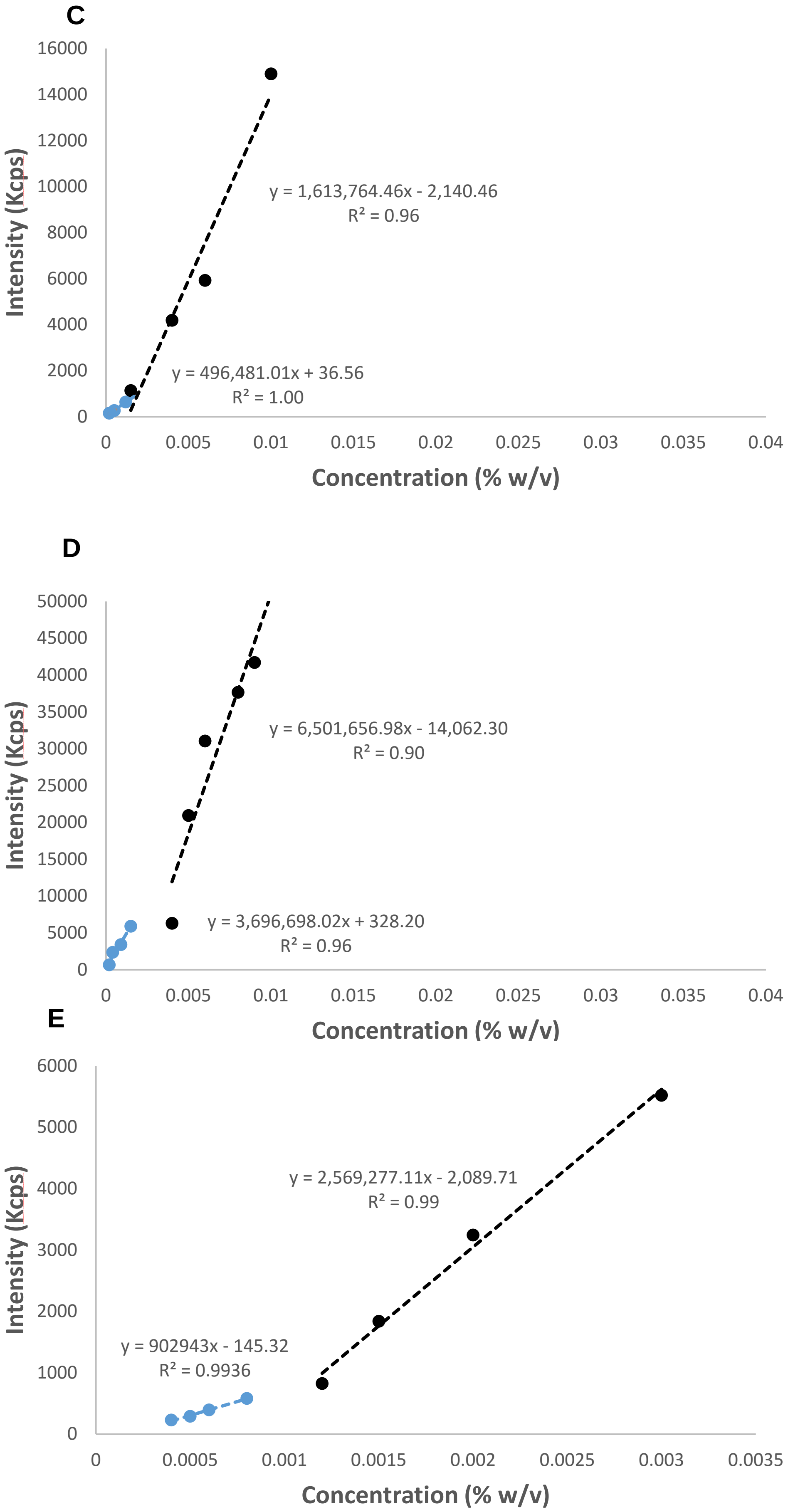
Supplementary Figure S5. UV-Vis spectra of 0.1% w/v CS-N52 and CS-N52-PPX derivatives with growing PP content. The concentration of CS-N52-PP36 was 0.05 %w/v.



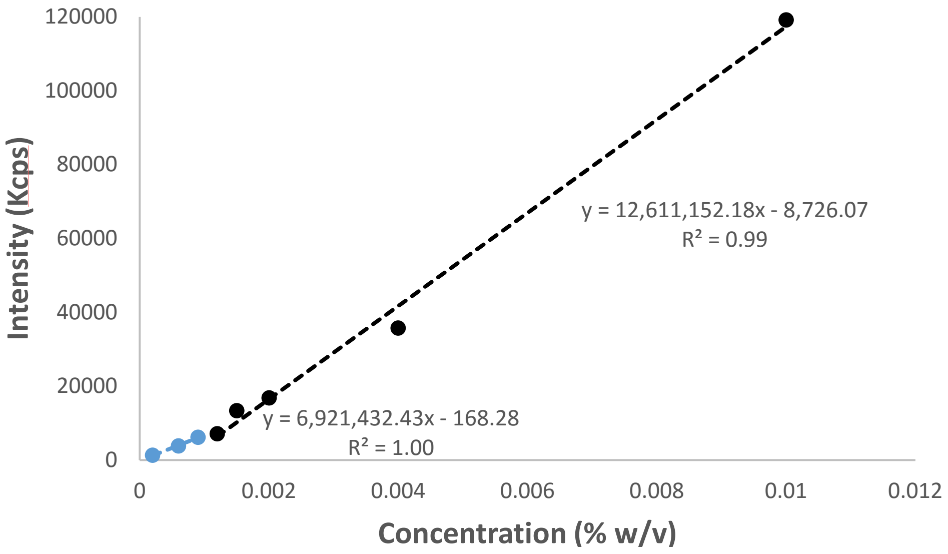
Supplementary Figure S6. FTIR spectra of PP, CS-N52 and CS-N52-PPX derivatives with growing PP content.


A
Intensity (Kcps)
14000
12000
10000
8000
6000
4000
2000
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
Concentration (% w/v)
y = 815028x - 1447.6
R² = 0.991
y = 366825x + 114.41
R² = 0.9476


B
Intensity (Kcps)
70000
60000
50000
40000
30000
20000
10000
0
0
0.01
0.02
0.03
0.04
Concentration (% w/v)
y = 1,095,413.91x - 515.76
R² = 0.98
y = 352,048.39x + 410.91
R² = 1.00

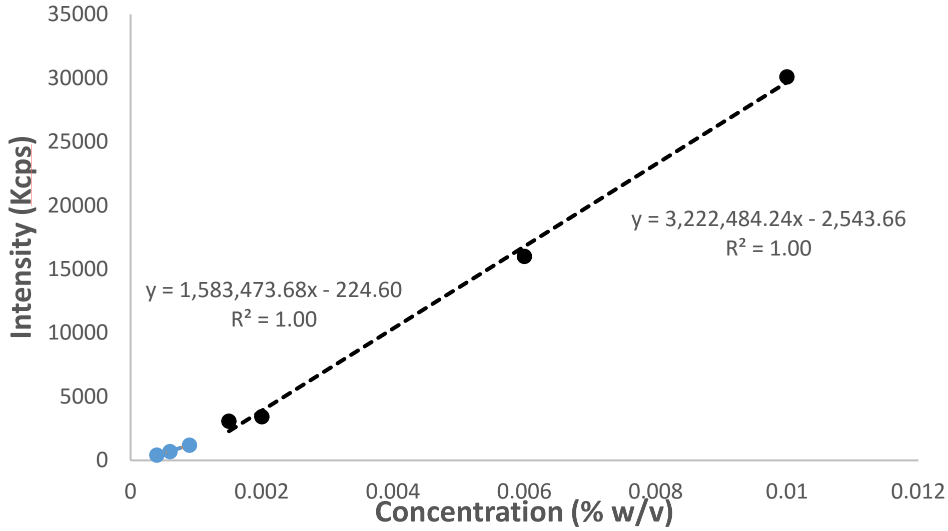

C
Intensity (Kcps)
16000
14000
12000
10000
8000
6000
4000
2000
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
Concentration (% w/v)
y = 1,613,764.46x - 2,140.46
R² = 0.96
y = 496,481.01x + 36.56
R² = 1.00
D
Intensity (Kcps)
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
Concentration (% w/v)
y = 6,501,656.98x - 14,062.30
R² = 0.90
y = 3,696,698.02x + 328.20
R² = 0.96
E
Intensity (Kcps)
6000
5000
4000
3000
2000
1000
0
0
0.0005
0.001
0.0015
0.002
0.0025
0.003
0.0035
Concentration (% w/v)
y = 2,569,277.11x - 2,089.71
R² = 0.99
y = 902943x - 145.32
R² = 0.9936

F



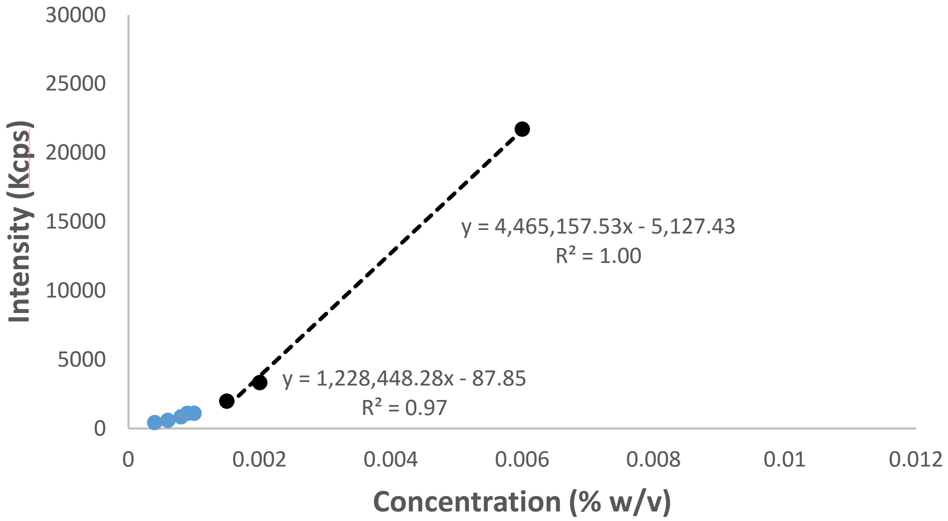
Intensity (Kcps)
120000
100000
80000
60000
40000
20000
0
0
0.002
0.004
0.006
0.008
0.01
0.012
Concentration (% w/v)
y = 12,611,152.18x - 8,726.07
R² = 0.99
y = 6,921,432.43x - 168.28
R² = 1.00

G

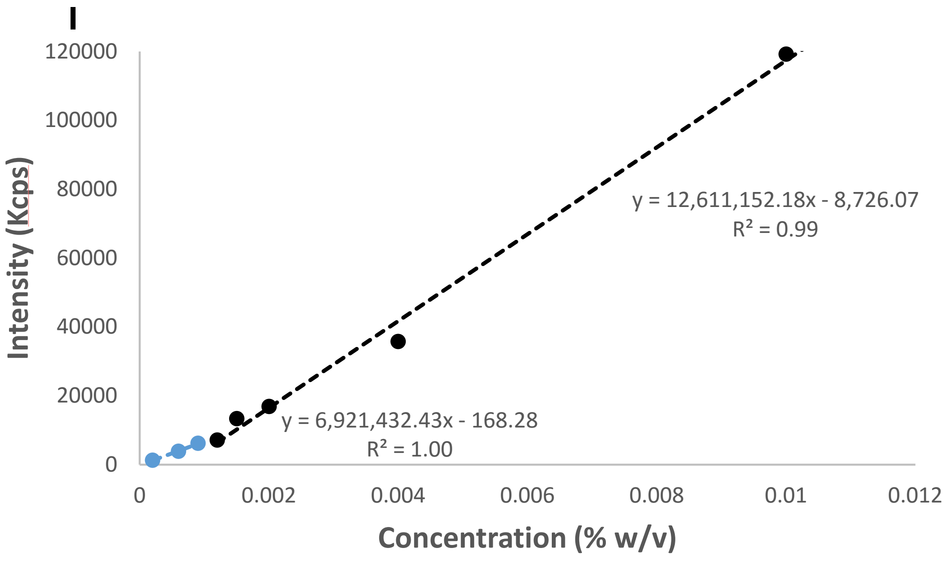


Intensity (Kcps)
35000
30000
25000
20000
15000
10000
5000
0
0
0.002
0.004
0.006
0.008
0.01
0.012
Concentration (% w/v)
y = 3,222,484.24x - 2,543.66
R² = 1.00
y = 1,583,473.68x - 224.60
R² = 1.00

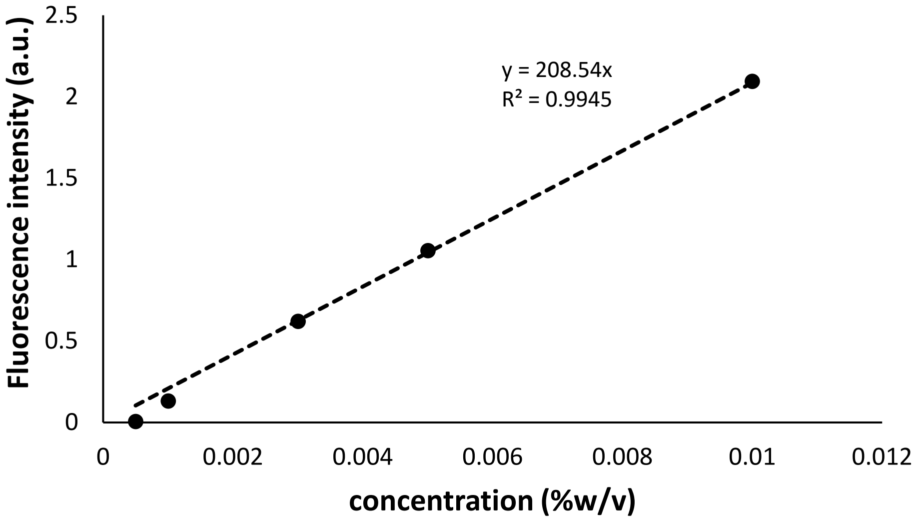
H



Intensity (Kcps)
30000
25000
20000
15000
10000
5000
0
0
0.002
0.004
0.006
0.008
0.01
0.012
Concentration (% w/v)
y = 4,465,157.53x - 5,127.43
R² = 1.00
y = 1,228,448.28x - 87.85
R² = 0.97



Supplementary Figure S7. Micellar concentration versus intensity of (A) CS-N52-PP2, (B) CS-N52-PP6, (C) CS-N52-PP9, (D) CS-N52-PP36 at 25^{o}C and (E) CS-N52, (F) CS-N52-PP2, (G) CS-N52-PP6, (H) CS-N52-PP9 and (I) CS-N52-PP36 at 37^{o}C, as determined by DLS.



Supplementary Figure S8. Calibration curve of CS-N52-PP2 in HBSS measured by fluorescence spectrophotometry.