

Supporting Information

1. Elemental analysis

The elemental analysis was carried out with a CHN. Corder (MT-5, YANACO). The SQ contents were calculated from the nitrogen contents obtained by elemental analysis. The results are listed in Table S1.

Table S1 Elemental Analysis

Code	SQ (mol%)	C		H		N	
		found (%)	calcd. (%)	found (%)	calcd. (%)	found (%)	calcd. (%)
p(DDA/SQF3)	2.7	69.29	69.27	11.05	11.07	5.12	5.12
p(DDA/SQF7)	7.0	61.65	62.26	9.12	9.73	4.26	4.26
p(DDA/SQPh6)	6.0	70.69	70.58	10.29	10.41	4.65	4.54
p(DDA/SQPh10)	10.2	68.21	68.27	9.49	9.55	3.87	3.87
p(DDA/SQPh22)	22.2	62.91	63.48	7.78	7.69	2.56	2.56

2. $\pi - A$ isotherms

We measured $\pi - A$ isotherms of p(DDA/SQ)s varying the temperature of the water subphase. Figure S1 shows $\pi - A$ isotherms of p(DDA/SQPh)s. All figures show steeper rise in surface pressure and higher collapse pressure at 15°C, indicating that p(DDA/SQ)s form more stable monolayers at 15°C.

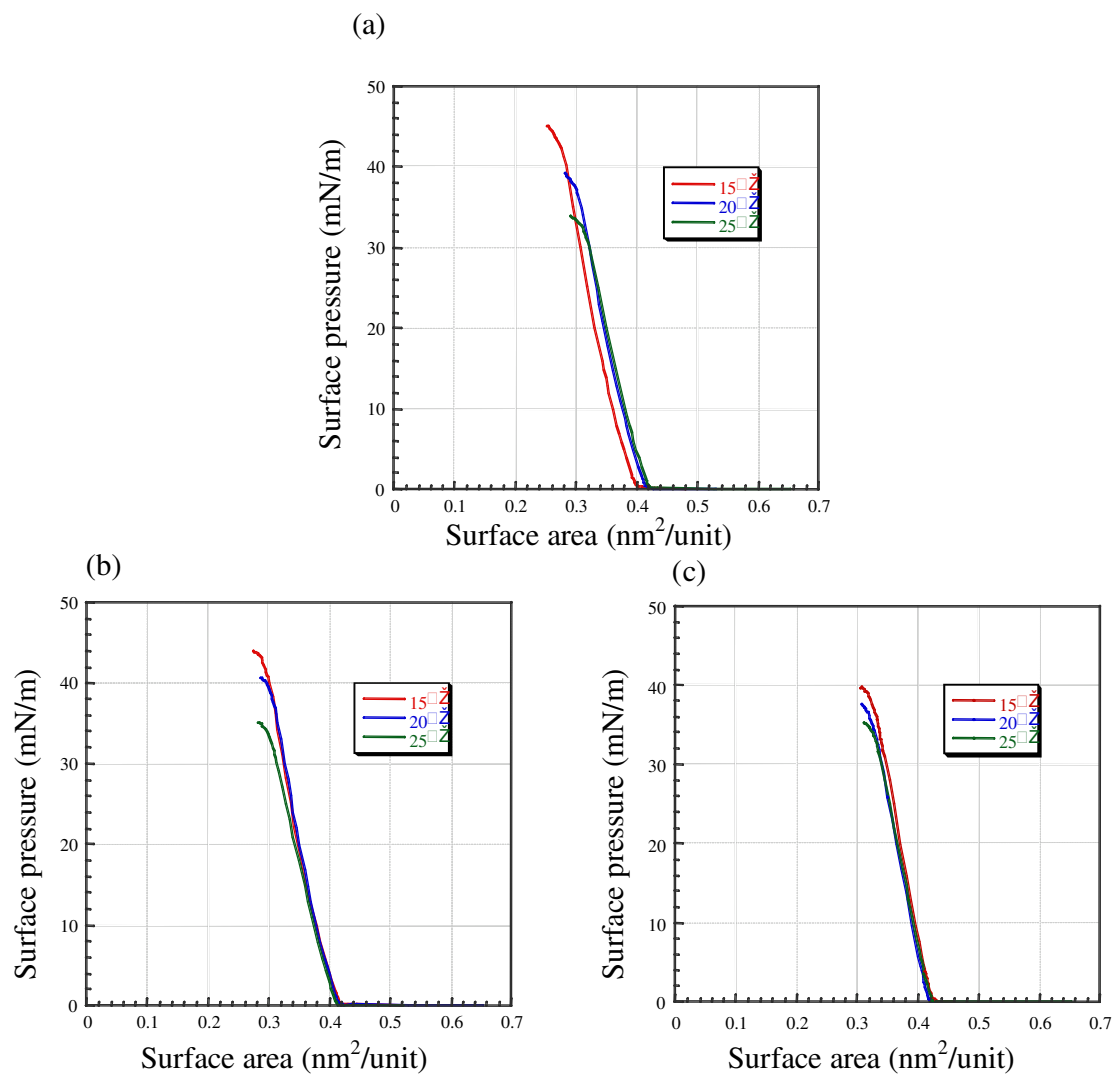


Figure S1. $\pi - A$ isotherms of p(DDA/SQPh)s as a function of temperature; (a) p(DDA/SQPh6), (b) p(DDA/SQPh10), and (c) p(DDA/SQPh22).

3. Thermal Analysis

The thermogravimetric differential thermal analysis (TG-DTA) was carried out using a thermogravimetric analyzer (Model Thermo Plus TG8120, RIGAKU) in the temperature range of 25-600 °C under argon atmosphere at a heating rate of 5 °C/min. The mass of sample used was between 4 and 6 mg. Figure S2 shows the results. The mass loss was listed in Table S2. The calculated values were obtained assuming that only pDDA comonomer was decomposed.

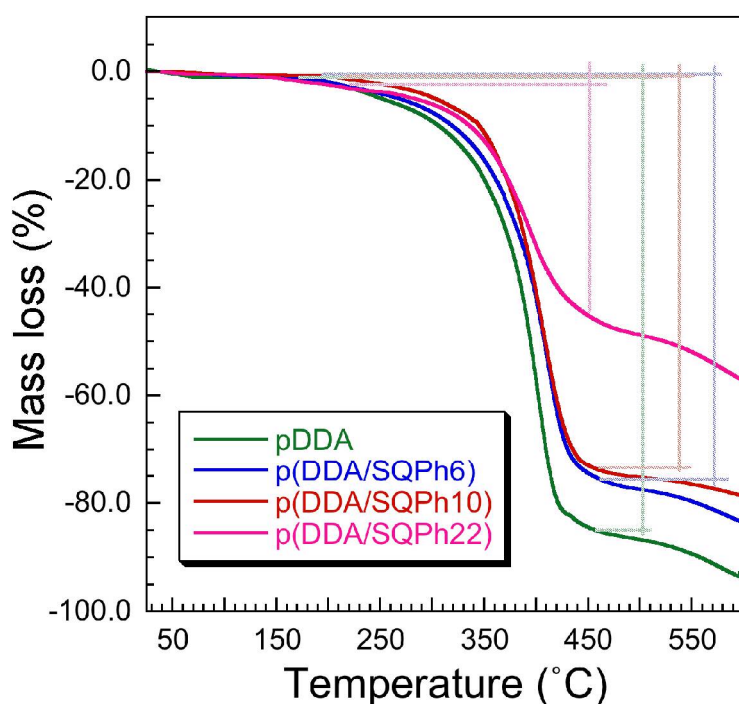


Figure S2 TG-DTA traces of p(DDA/SQPh)s under argon atmosphere.

Table S2 Mass loss of p(DDA/SQ)s.

Code	calculated (%)	experimental (%)
pDDA	-100	-84.6
p(DDA/XQPh6)	-77.8	-75.5
p(DDA/XQPh10)	-66.5	-70.1
p(DDA/XQPh22)	-43.9	-44.3