Supplementary Material (ESI) for Polymer Chemistry

Dual hydrophilic and salt responsive schizophrenic block copolymers – synthesis and study of self-assembly behaviour

Vivek Arjunan Vasantha,*[a] Satyasankar Jana,[a] Serina Siew-Chen Lee,[b] Chin-Sing Lim,[b] Serena Lay-Ming Teo,[b] Anbanandam Parthiban*[a] and Julius G. Vancso[a,c]

[a]*Institute of Chemical and Engineering Sciences (ICES), Agency for Science, Technology and Research (A*STAR), 1 Pesek Road, Jurong Island, Singapore 627833.*

[b]*Tropical Marine Science Institute, National University of Singapore, 18 Kent Ridge Road, Singapore 119227*

[c]*MESA+ Research Institute for Nanotechnology, Faculty of Science and Technology, University of Twente, P. O. Box 217, 7500 AE Enschede, The Netherlands.*

E-mail: vivek_vasantha@ices.a-star.edu.sg; aparthiban@ices.a-star.edu.sg

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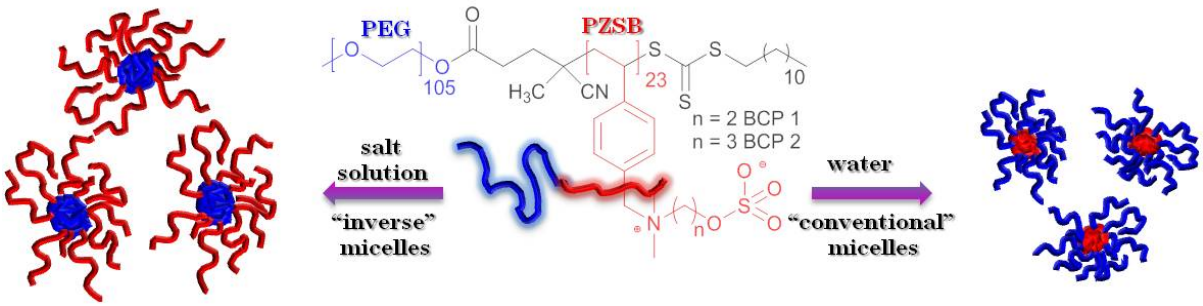
Graphical Abstract



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Supporting Information

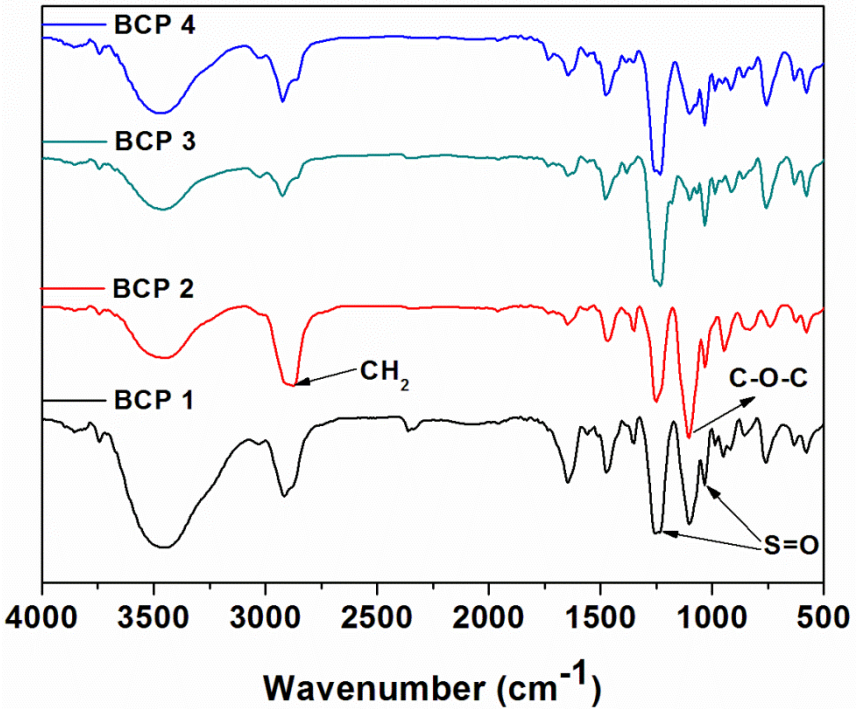

Fig. S1 FT-IR of polysulfabetaine block copolymers.

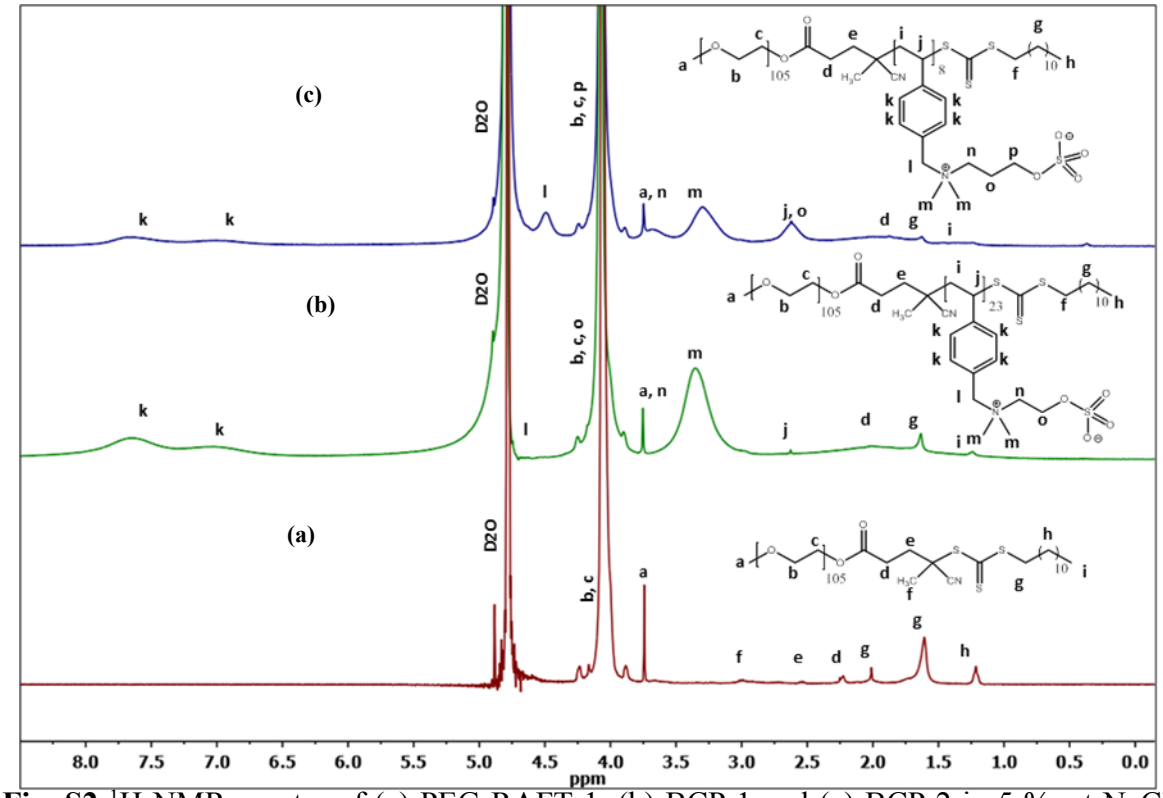

Fig. S2 ^{1}H NMR spectra of (a) PEG-RAFT 1, (b) BCP 1 and (c) BCP 2 in 5 % wt NaCl in D_2O.

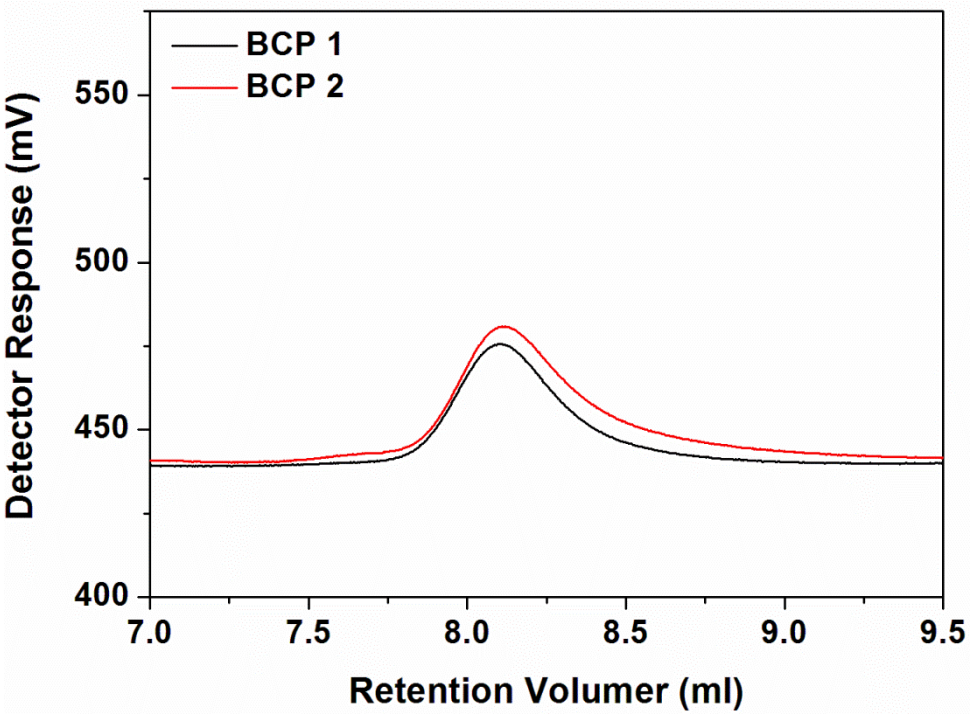

Fig. S3 GPC chromatograms of polysulfabetaine block copolymers.

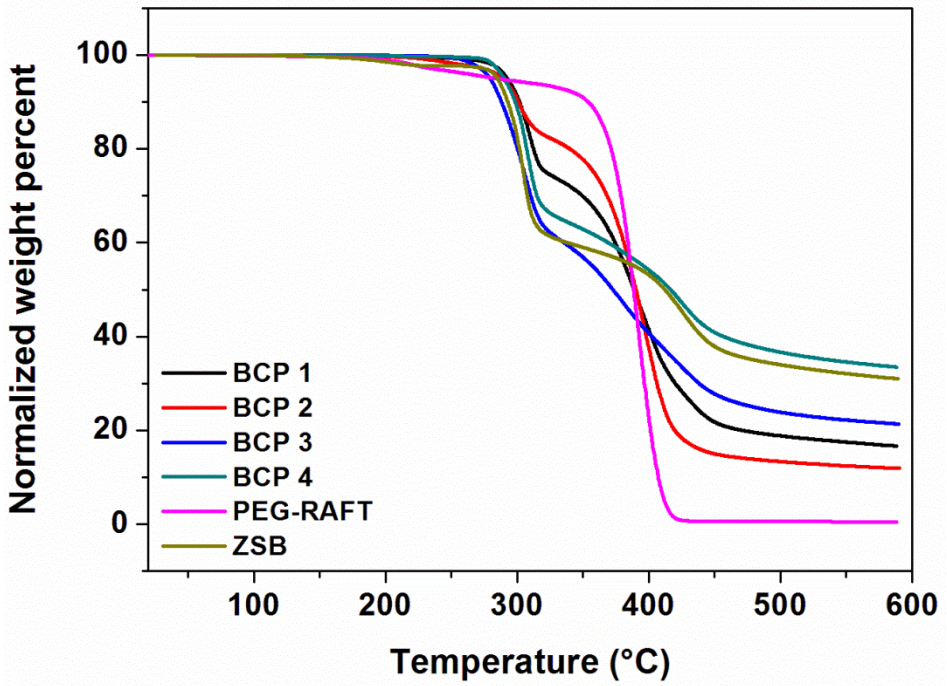

Fig. S4 Thermogravimetric analysis of BCP 1-4, PEG-RAFT 1 and ZSB.

Table S1. Melting temperature of PEG blocks in BCPs

Polymers	Composition from ^{1}H NMR[b]	[c] T_m (°C)
[a]PEG-RAFT 1	$(EG)_{105}$	59
BCP 1	$(EG)_{105}$-*b*-$(ZSB\ 1)_{23}$	59
BCP 2	$(EG)_{105}$-*b*-$(PZSB\ 2)_{8}$	62
BCP 3	$(EG)_{19}$-*b*-$(ZSB\ 1)_{10}$	41
BCP 4	$(EG)_{19}$-*b*-$(ZSB\ 1)_{24}$	43

[a] PEG-RAFT 2 with $(EG)_{19}$ did not show any melting transition in the DSC analysis; [b] refer to experimental section for details on the molecular determination by ^{1}H-NMR analysis; [c] melting of PEG block as determined by DSC(heating rate 10 °C/min, N_2 atm.).

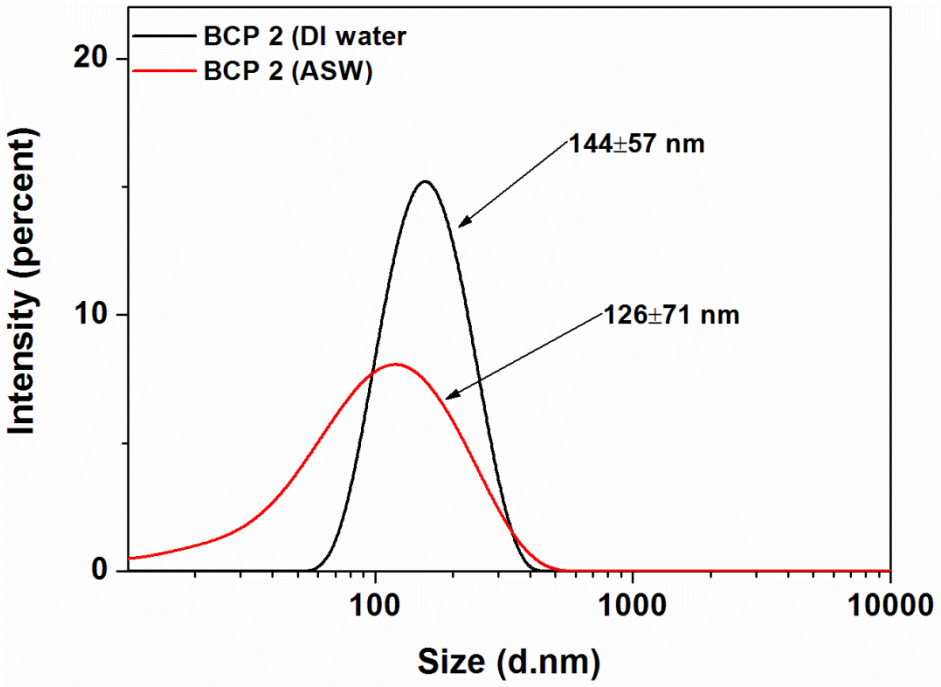

Fig S5 Size (Z-Average) distribution of micelles of BCP 2 in DI water and ASW.

Table S2 Summary of particle sizes for BCPs by DLS in water and ASW after two months

Polymer	Solvents			After two months	
		[a]DLS (D_z, nm)	PDI (DLS)	[a]DLS (D_z, nm)	PDI (DLS)
BCP 2	DI water	45	0.09	82	0.2
	ASW	149	0.1	126	0.5
BCP 2	DI water	144	0.13	97	0.4
	ASW	126	0.6	116	0.6

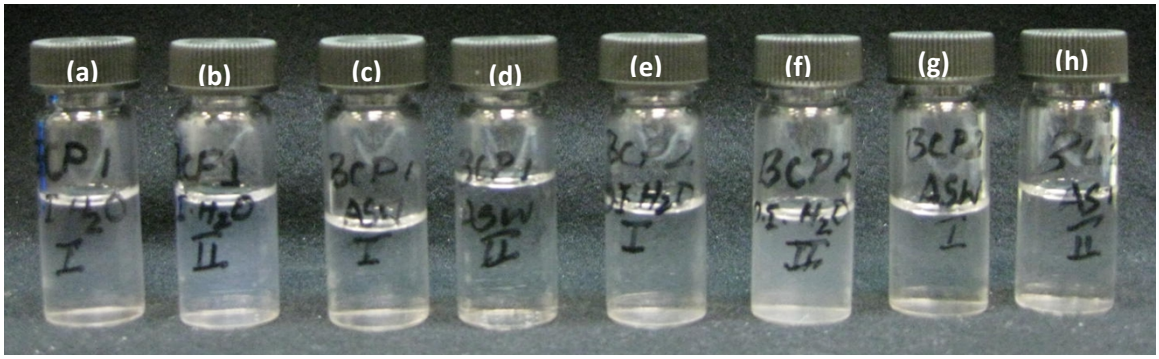

Fig S6. Photograph of zwitterionic "conventional" micelles in water BCP 1 (a and b) and BCP 2 (e and f)) and "inverse micelles" in ASW (BCP 1 (c and d) and BCP 2 (g and h) (I) as prepared sample and (II) after storing for two months

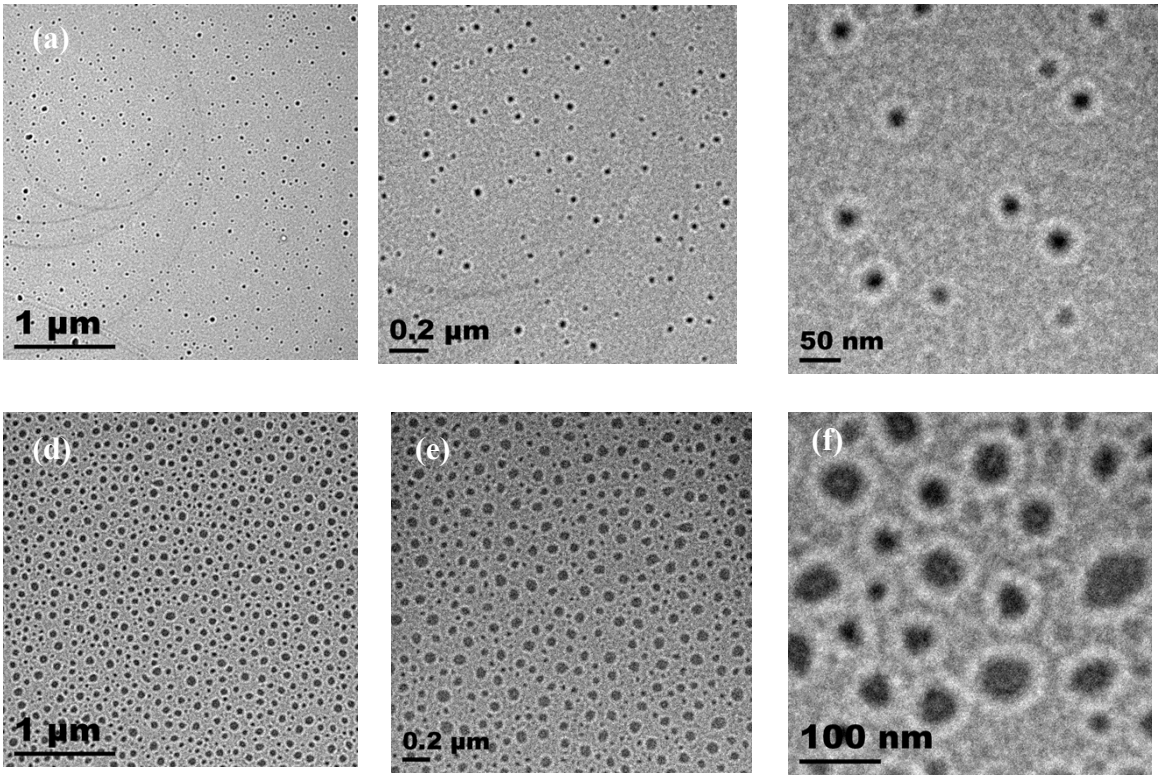

Fig. S7 TEM of BCP 1 (a, b and c) and BCP 2(c, d and e) in DI water (1mg/mL)

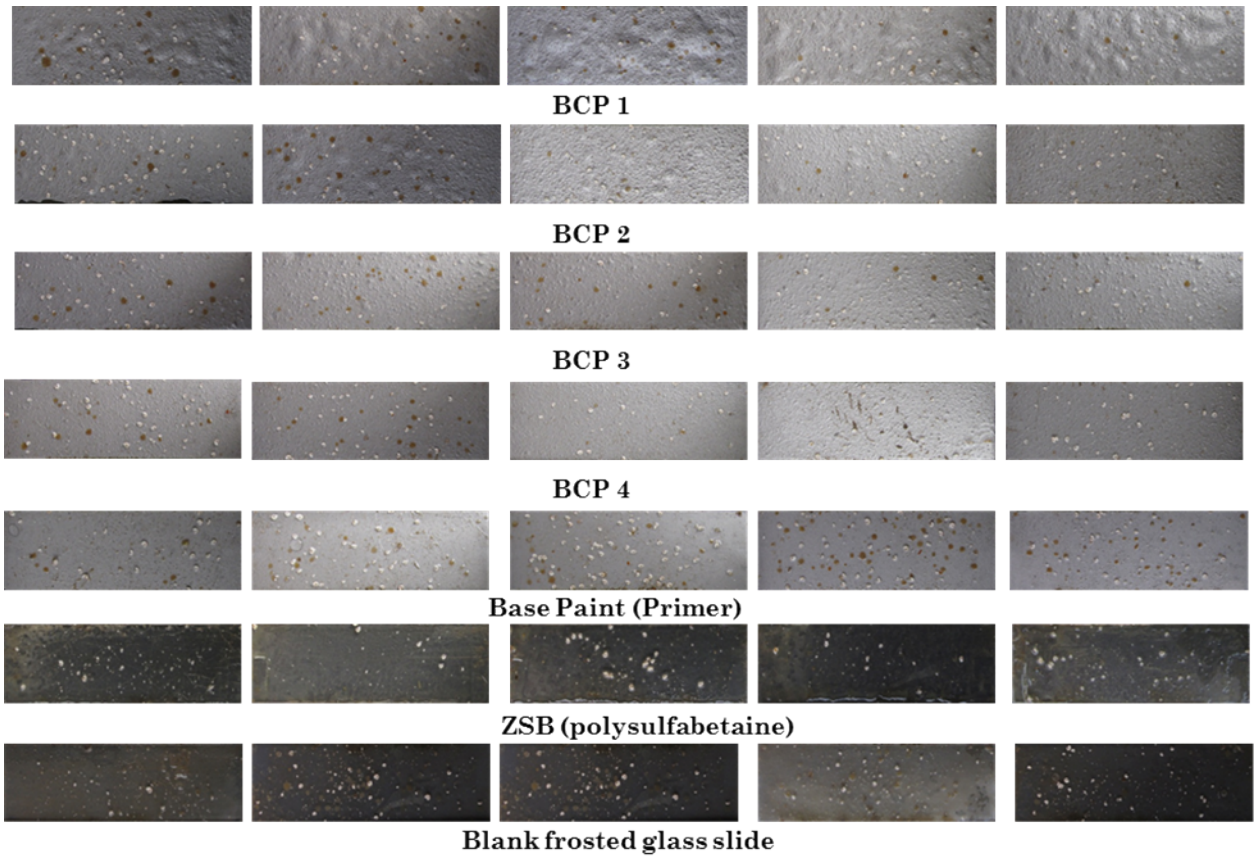

Fig. S8 Photographs of glass slides after two weeks of immersion in the sea.