Electronic Supplementary Material (ESI) for RSC Advances.

Synthesis and characterization of a novel antibacterial material containing poly (sulfobetaine) using reverse atom transfer radical polymerization

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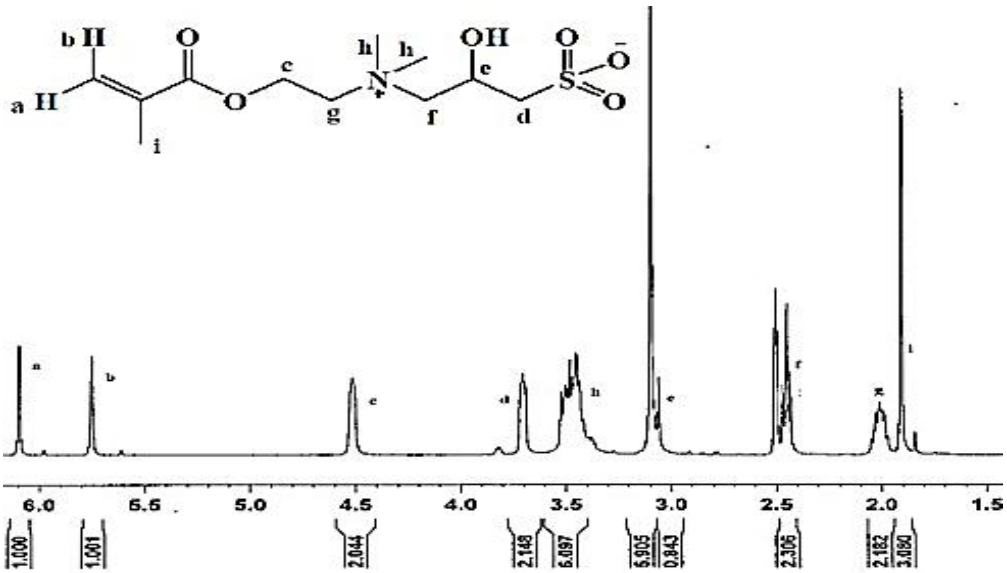


Fig. S1. ^{1}H NMR spectra of DMCHPS in DMSO.

Table S1. Elemental surface composition of PU-Si substrates determined from XPS.

Sample	Element (atom %)						Atomic ratio
	C	O	N	Si	Cl	S	O/C
DMCHPS	49.87	31.66	3.96	-	10.02	9.06	0.63
PU-Si	79.88	12.87	1.03	4.55	1.68	<0.1	0.16
PU-Si-g-P(DMCHPS)-12h	70.43	23.97	2.80	1.95	0.86	<0.1	0.34
PU-Si-g-P(DMCHPS)-24h	69.66	24.98	2.71	2.20	0.29	0.16	0.36
PU-Si-g-P(DMCHPS)-36h	68.15	25.99	3.11	1.98	0.78	<0.1	0.38
PU-Si-g-P(DMCHPS)-48h	68.36	25.91	3.29	1.81	0.63	<0.1	0.38

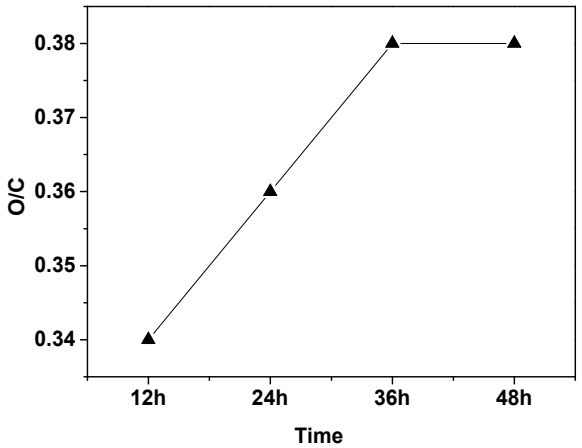


Fig. S2. Total atomic ratio of O/C of PU-Si-g-P(DMSCH)-12h, PU-Si-g-P(DMSCH)-24h, PU-Si-g-P(DMSCH)-36h, PU-Si-g-P(DMSCH)-48h.

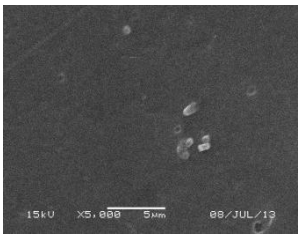
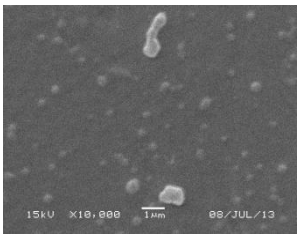
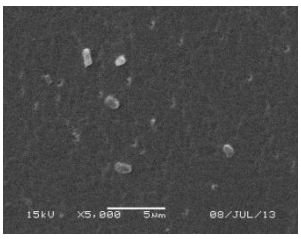
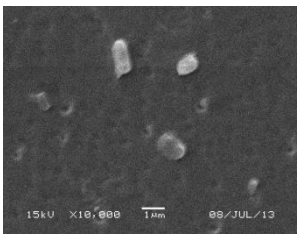
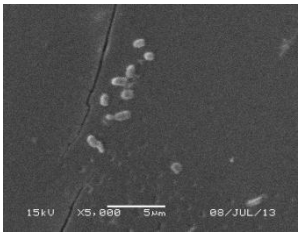
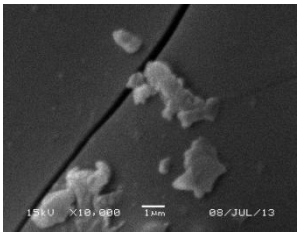
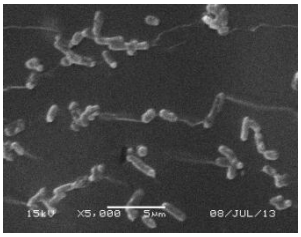
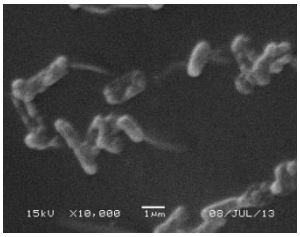
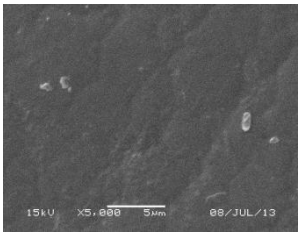
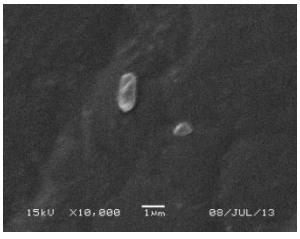
(a) PU-Si-g-P(DMCHPS)-12h(×5000)	(a') PU-Si-g-P(DMCHPS)-12h(×10000)
	
(b) PU-Si-g-P(DMCHPS)-24h(×5000)	(b') PU-Si-g-P(DMCHPS)-24h(×10000)
	
(c) PU-Si-g-P(DMCHPS)-36h(×5000)	(c') PU-Si-g-P(DMCHPS)-36h(×10000)
	
(d) PU-Si-g-P(DMCHPS)-48h(×5000)	(d') PU-Si-g-P(DMCHPS)-48h(×10000)
	
(e) PU-Si(×5000)	(e') PU-Si(×10000)
	

Fig. S3. SEM pictures of bacterial adhesion for (a, a') PU-Si-g-P(DMSCH)-12h, (b, b') PU-Si-g-P(DMSCH)-24h, (c, c') PU-Si-g-P(DMSCH)-36h, (d, d') PU-Si-g-P(DMSCH)-48h, (e, e') PU-Si against *E. coli.*

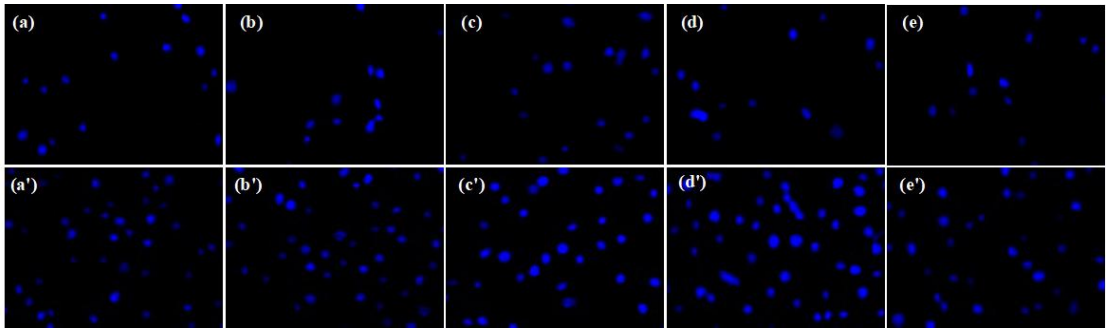


Fig. S4. Fluorescent images of HEK293 cells for (a, a') PU, (b, b') PU-Si-g-P(DMCHPS)-12 h, (c, c') PU-Si-g-P(DMCHPS)-24 h, (d, d') PU-Si-g-P(DMCHPS)-36 h, (e, e') PU-Si-g-P(DMCHPS)-48 h, which a-e) and a'-e') are HEK293 cells culture on modified PU films for 24 h and 48 h.