

Supplementary information

Hybrid PET Track-Etched Membranes Grafted by Well-Defined Poly(2-(Dimethylamino)Ethyl Methacrylate) Brushes and Loaded With Silver Nanoparticles for the Removal of As(III)

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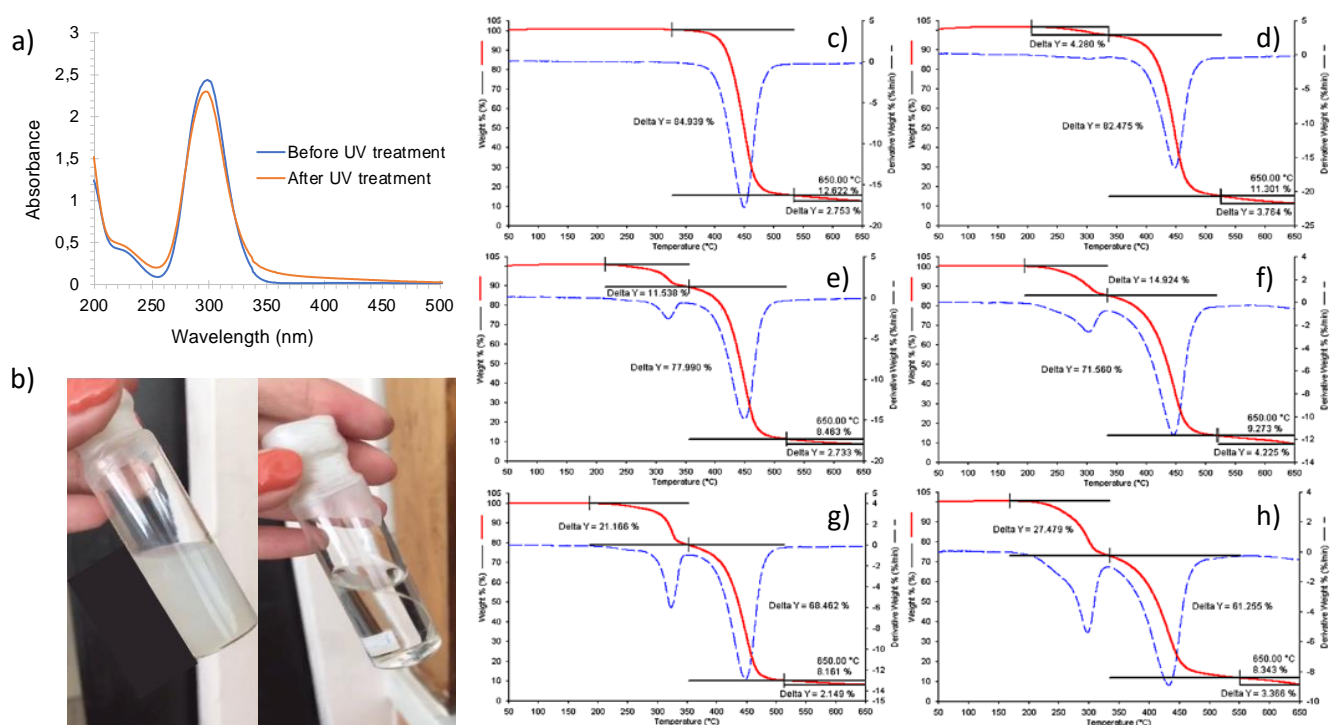


Figure S1. UV-Vis spectra of RA1 RAFT agent before and after to exposure to UV-irradiation (a). Pictures taken at the 30th min of UV-initiated, RAFT-mediated grafting of PDMAEMA from PET-TEMs in water (left) and acetone:water (right) (b). Thermal degradation profiles of pristine PET TeM (c) and PDMAEMA grafted PET TeMs with different degrees of grafting of 12% DG (d), 22% DG (e), 29% DG (f), 35% DG (g), and 43% DG (h).

Table S1. UV-initiated, RAFT-mediated grafting of DMAEMA from PET-TEMs in water, ethanol, ethanol:water (1:1. v/v) and acetone:water (1:1. v/v), [DMAEMA]/[RA1]=500.

Entry No.	DMAEMA /RA1	DMAEMA, v/v %	Solvent	Time (min)	Degree of Grafting (%)
1	500	20	water	30	5.5
2	500	20	water	35	6.1
3	500	20	water	40	6.8
4	500	20	water	45	7.9
5	500	20	water	50	9.5
6	500	20	water	55	11.8
7	500	20	water	60	14.1
8	500	20	water	65	16.2
9	500	20	water	135	19.7
10	500	5	water	30	2.0
11	500	10	water	30	3.8
12	500	30	water	30	9.3
13	500	40	water	30	12.0
14	500	10	water	45	8.3
15	500	10	water	60	8.1
16	500	10	water	90	7.0
17	500	10	water	120	9.7
18	500	10	water	180	6.1
19	500	10	water	240	5.8
20	500	20	ethanol	50	3.0
21	500	20	ethanol:water	50	3.3
22	500	20	acetone:water	50	12.2
23	1000	20	water	45	15.8
24	1000	20	water	75	17.8
25	1000	20	water	135	29.4
26	1000	20	water	195	31.2
27	1000	20	water	255	35.8
28	1000	20	acetone	45	6.0
29	1000	20	acetone:water	45	11.7
30	1000	20	acetone:water	75	29.3
31	1000	20	acetone:water	135	42.9
32	1000	20	acetone:water	195	66.1
33	1000	20	acetone:water	255	81.7
34	1000	20	acetone:water	375	130.8
35	-	10	acetone:water	30	22.0
36	-	20	acetone:water	30	34.9
37	-	20	acetone:water	60	61.9
38	-	20	acetone:water	120	98.7

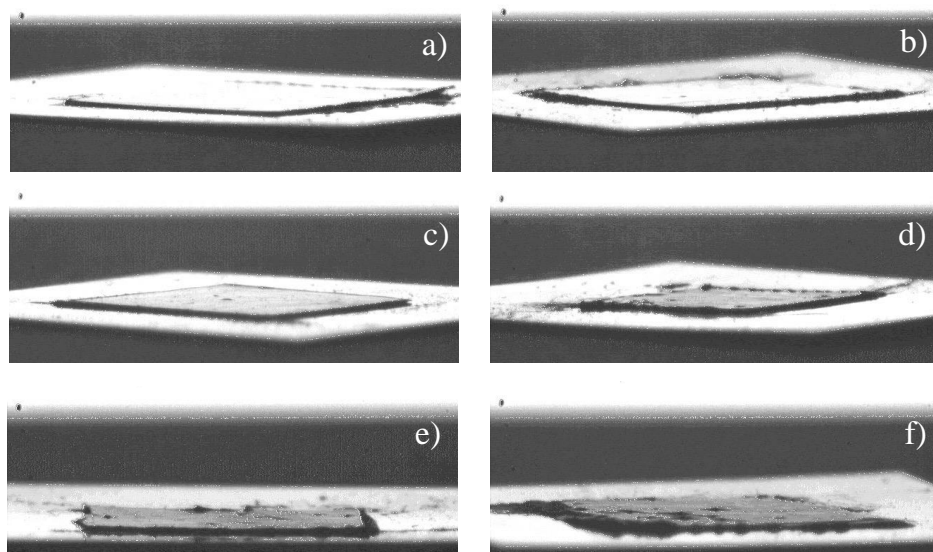


Figure S2. Digital camera images of pristine PET TeM (a) and PDMAEMA grafted PET TeMs with degrees of grafting of 12% DG (b), 22% DG(c), 29% DG (d), 35% DG (e), and %43 DG (f).

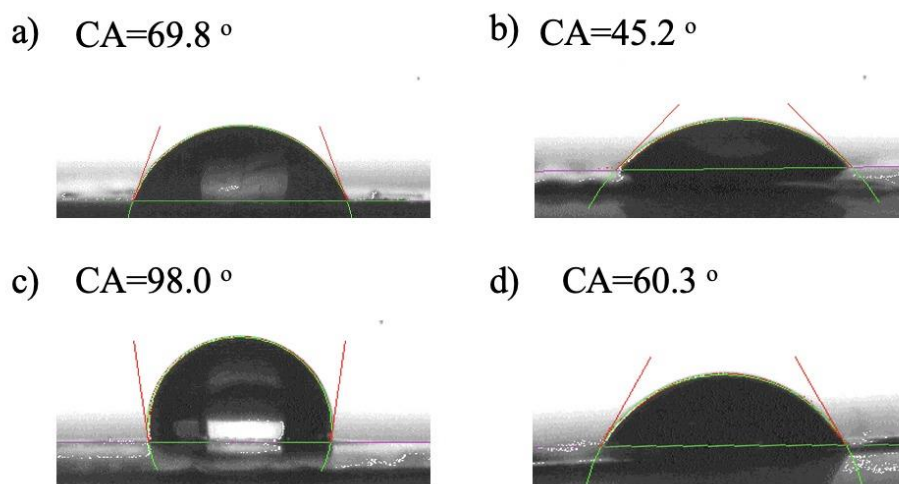


Figure S3. Contact angle (CA) measurements of (a) PDMAEMA grafted TeMs with DG of 22%, its quaternized membrane (b), PDMAEMA grafted TeMs (DG: 22%) with loaded Ag NPs (c), Q-PDMAEMA grafted TeMs (DG: 22%) with loaded Ag NPs (d).