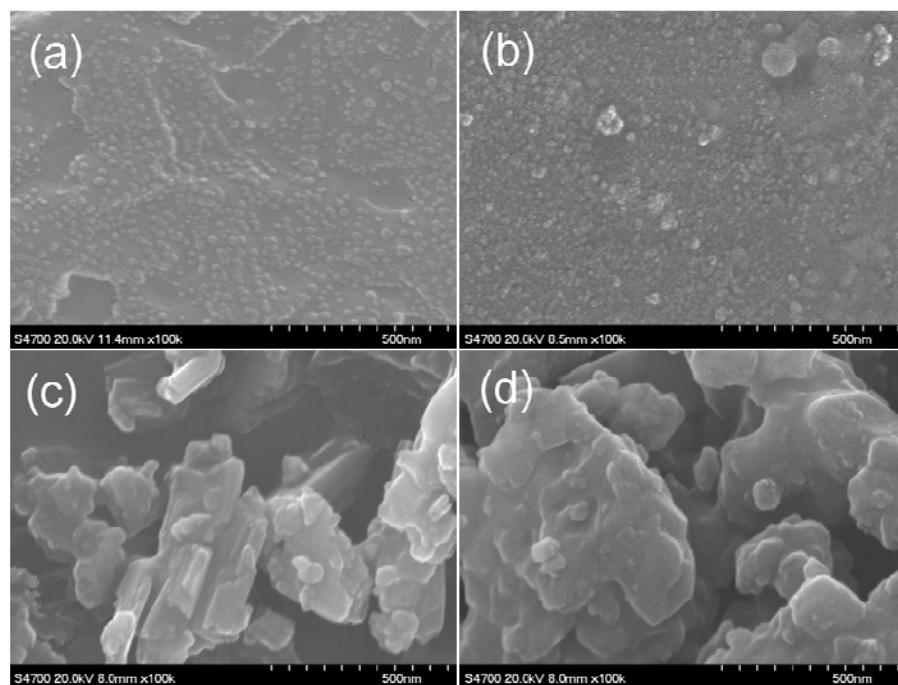
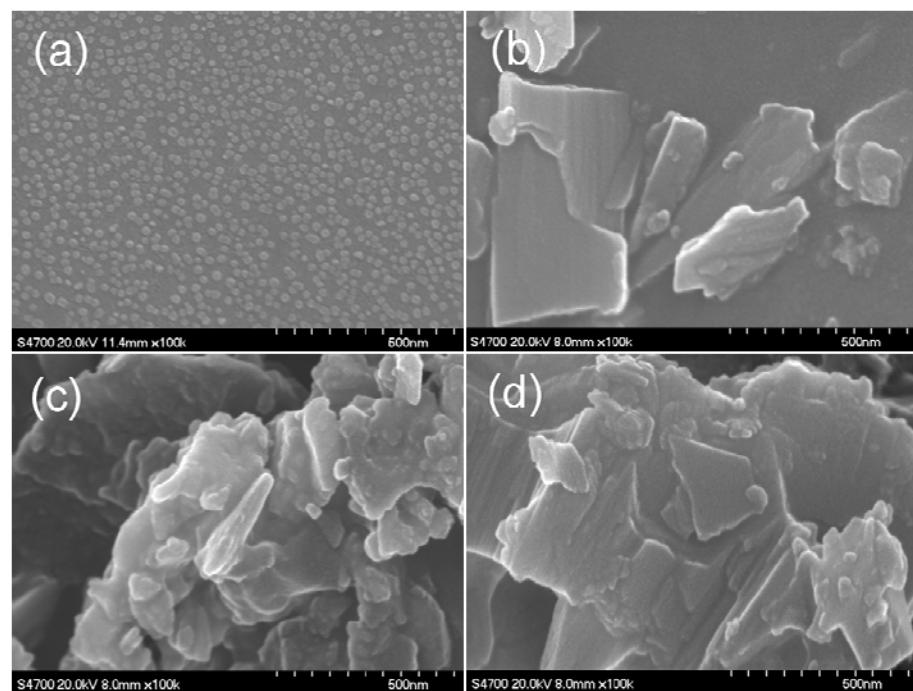


**Table S1.** The contact angle and the dispersion surface energy ( $\gamma_s^d$ ) of the gradient polymer film (PTPGDA) initiated by HBP-Si-B/C

Team	$\theta (\text{H}_2\text{O})^\circ$	$\gamma_s^d (\text{H}_2\text{O}) / (\text{mN/m})$
HBP-Si-B ( $1.0 \times 10^{-3}$ mol/L)	72.96	92.43
HBP-Si-B ( $4.0 \times 10^{-3}$ mol/L)	79.91	76.35
HBP-Si-B ( $8.0 \times 10^{-3}$ mol/L)	87.86	59.49
HBP-Si-B ( $2.5 \times 10^{-2}$ mol/L)	96.24	43.92
HBP-Si-C ( $1.0 \times 10^{-3}$ mol/L)	74.32	89.21
HBP-Si-C ( $4.0 \times 10^{-3}$ mol/L)	82.67	70.29
HBP-Si-C ( $8.0 \times 10^{-3}$ mol/L)	90.03	55.23
HBP-Si-C ( $2.5 \times 10^{-2}$ mol/L)	99.69	38.24



**Fig. S1** SEM images of the polymer films (PTPGDA) initiated by different concentration of HBP-Si-B ((a)  $1.0 \times 10^{-3}$  mol/L (b)  $4.0 \times 10^{-3}$  mol/L (c)  $8.0 \times 10^{-3}$  mol/L (d)  $2.5 \times 10^{-2}$  mol/L) and TEOA ( $3.3 \times 10^{-2}$  mol/L)



**Fig. S2** SEM images of the polymer films (PTPGDA) initiated by different concentration of HBP-Si-C ((a)  $1.0 \times 10^{-3}$  mol/L (b)  $4.0 \times 10^{-3}$  mol/L (c)  $8.0 \times 10^{-3}$  mol/L (d)  $2.5 \times 10^{-2}$  mol/L) and TEOA ( $3.3 \times 10^{-2}$  mol/L)