Electronic Supplementary Material (ESI) for Materials Chemistry Frontiers.

Electronic Supplementary Information

Self-Assembly of Positively Charged Polymer Patchy Micelles in Organic Solutions and the Reversible Ultrasound Responsivity of the Assemblies

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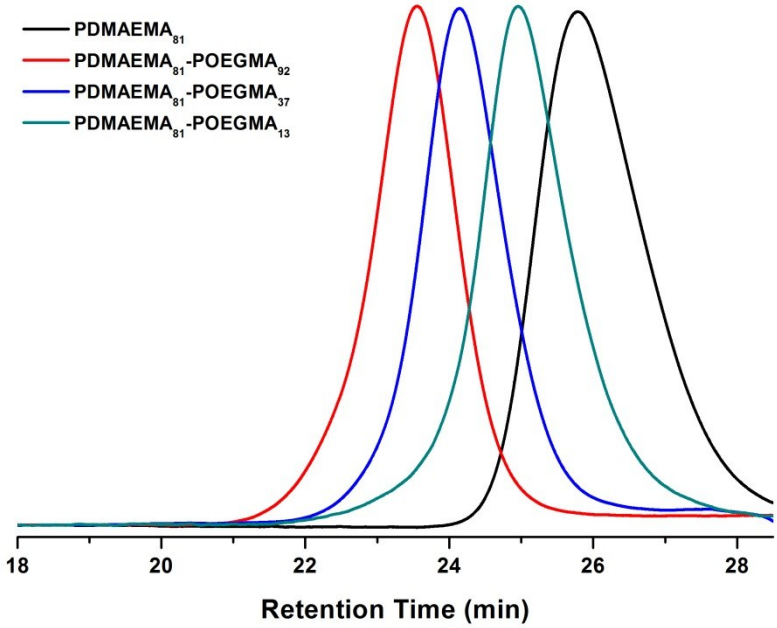

Figure S1. SEC traces of PDMAEMA and PDMAEMA-b-POEGMA block copolymers.

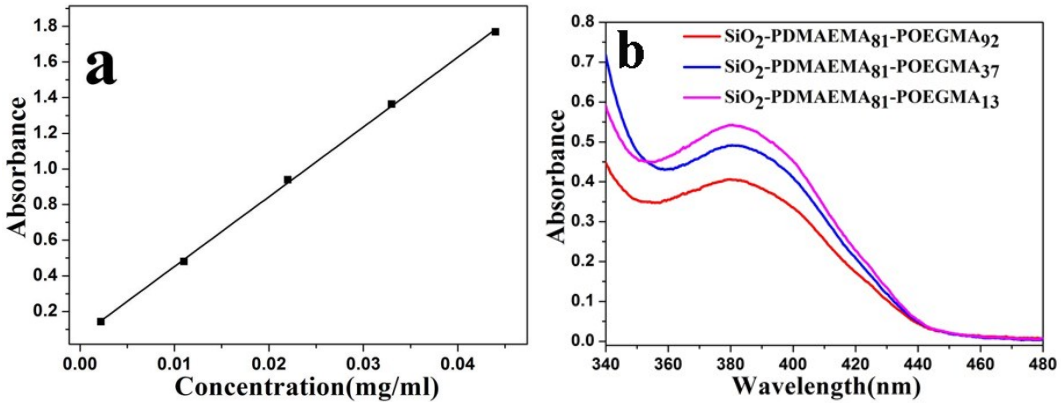

Figure S2. (a) Calibration curve for pyridine-2-thione determined by plotting the UV-vis absorbance of 2-mercaptopyridine in DMF against concentration, (b) UV-vis spectra of pyridine-2-thione produced in the thiol-disulfide exchange reaction between pyridyl disulfide groups on silica particles and thiol groups at the ends of block copolymer chains in DMF solutions.

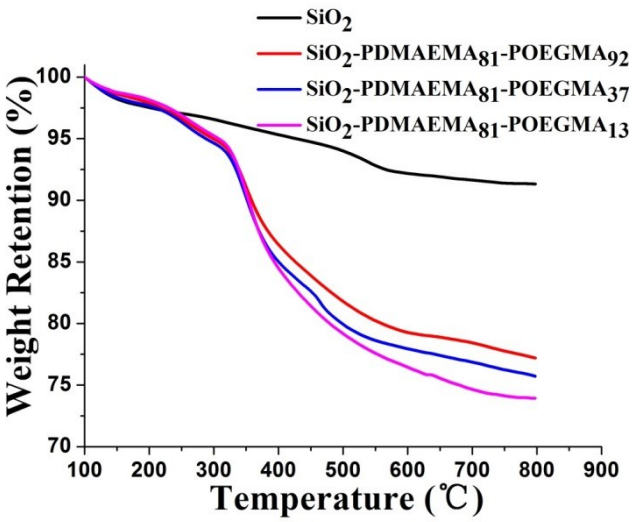

Figure S3. Thermogravimetric analysis of native silica particles, and silica particles with $PDMAEMA_{81}$-b-$POEGMA_{13}$, $PDMAEMA_{81}$-b-$POEGMA_{37}$ and $PDMAEMA_{81}$-b-$POEGMA_{92}$ block copolymer brushes.

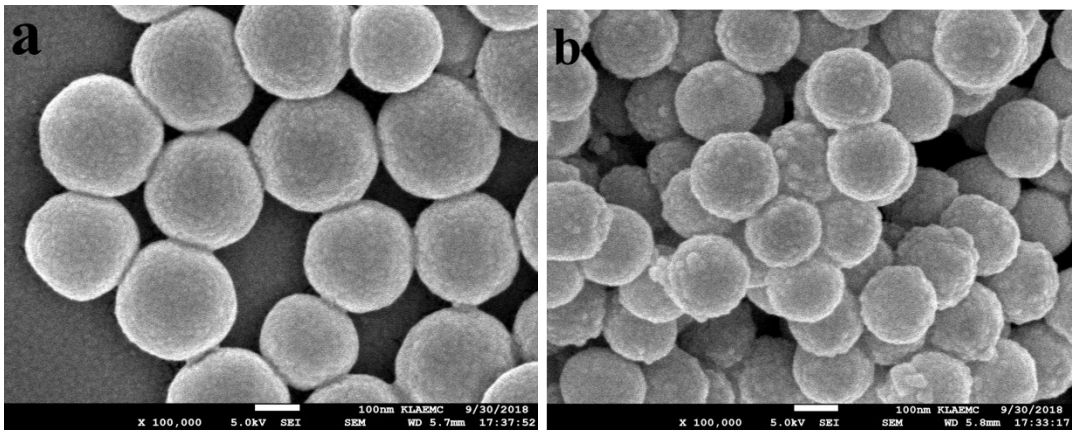

Figure S4. SEM images of silica particles with s-micelles formed by quaternization of (a) $PDMAEMA_{81}$-b-$POEGMA_{37}$ and (b) $PDMAEMA_{81}$-b-$POEGMA_{92}$ on the surfaces. The scale bars represent 100 nm.

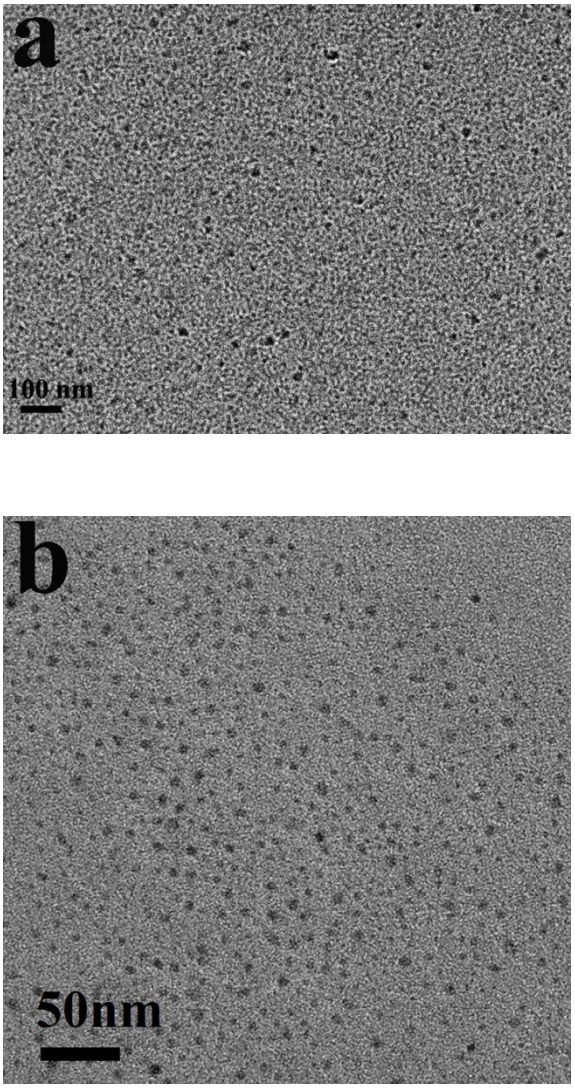

Figure S5. TEM images of cleaved s-micelles prepared from (a) quaternized $PDMAEMA_{81}$-b-$POEGMA_{37}$, and (b) $PDMAEMA_{81}$-b-$POEGMA_{92}$.

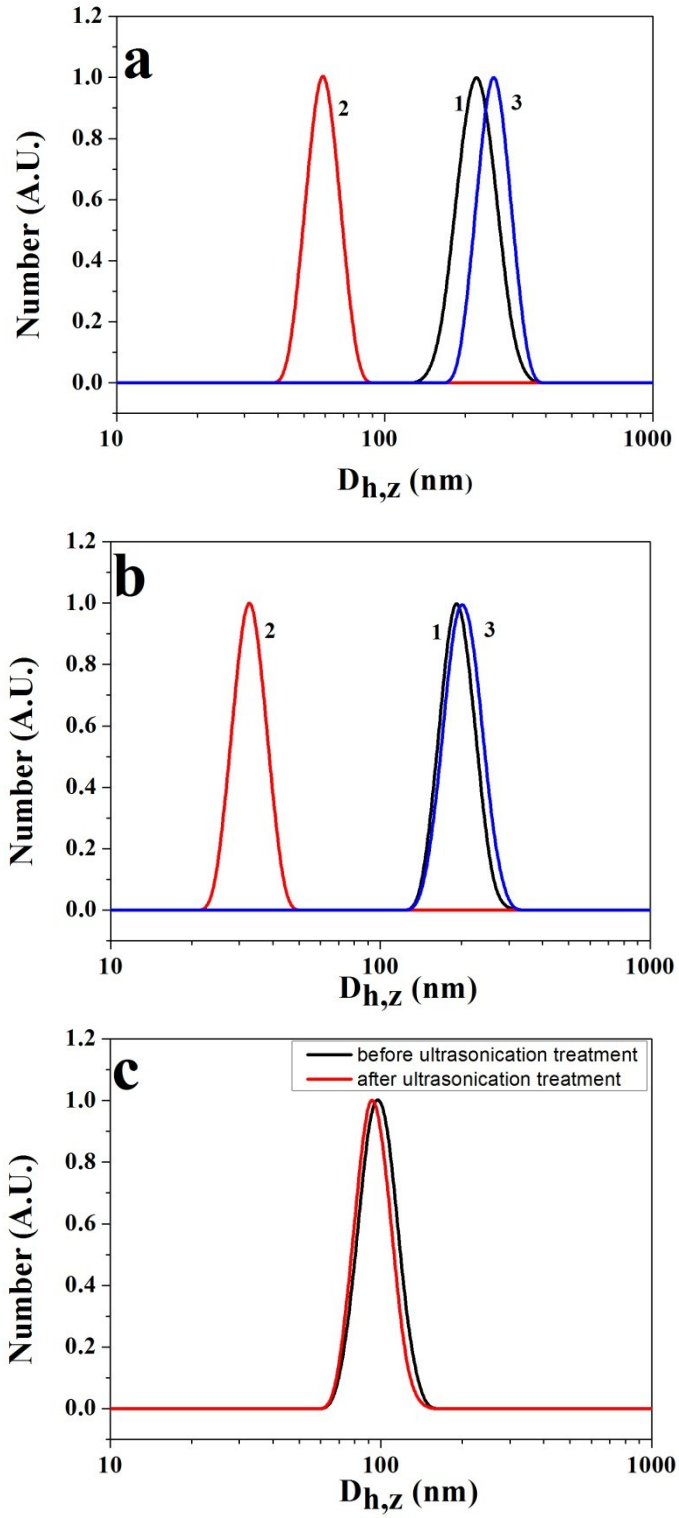

Figure S6. DLS curves of assemblies formed by (a) PM2 and (b) PM3 particles before (curve 1) and after (curve 2) 15 minutes ultrasound exposure and when the ultrasound is off (curve 3), and (c) DLS curves of assemblies formed by quaternized $PDMAEMA_{81}$-b-$POEGMA_{13}$ before and after ultrasonication treatment.