Supplementary Information for:

Fabrication and Photoactivity of a Tunable-Void SiO$_2$-TiO$_2$ Core–Shell Structure on Modified SiO$_2$ Nanospheres by Grafting an Amphiphilic Diblock Copolymer Using ARGET ATRP

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Supplementary data:

**Fig. S1.** FT-IR spectra of (a) SiO₂, (b) SiO₂-NH₂, and (c) SiO₂-Br

**Fig. S2.** TEM of (a) SiO₂, (c) SME8, (e) SME2, and FESEM of (b) SiO₂, (d) SME8, (f) SME2.
**Fig. S3.** TGA results of (a) SiO$_2$, (b) SiO$_2$-NH$_2$, and (c) SiO$_2$-Br.

**Fig. S4.** HRTEM of (a) lattice image of SiO$_2$-TiO$_2$ ($n=5$, 450 °C) and (b) SAED of SiO$_2$-TiO$_2$ ($n=5$, 450 °C).