Supporting Information

Fabrication of Polymer Nanopeapods in the Nanopores of Anodic Aluminum Oxide Templates Using a Double-Solution Wetting Method

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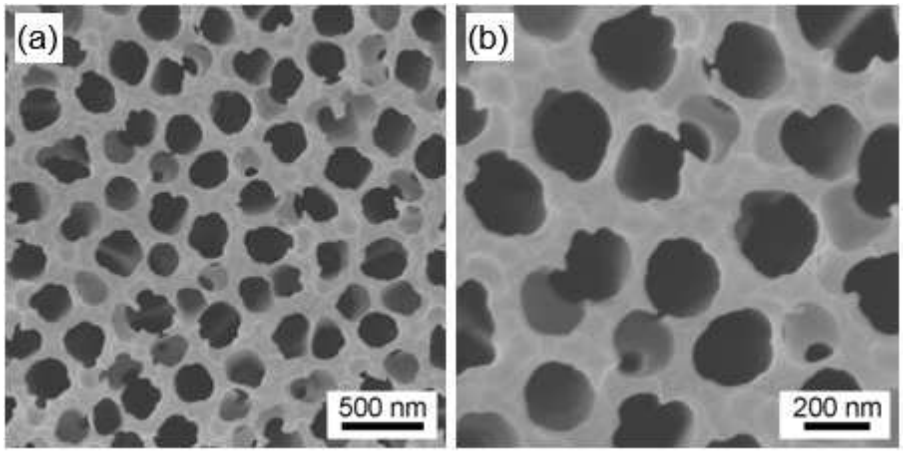

Figure S1. SEM images of commercial AAO templates with pore sizes ~150–400 nm: (a) lower magnification and (b) higher magnification.

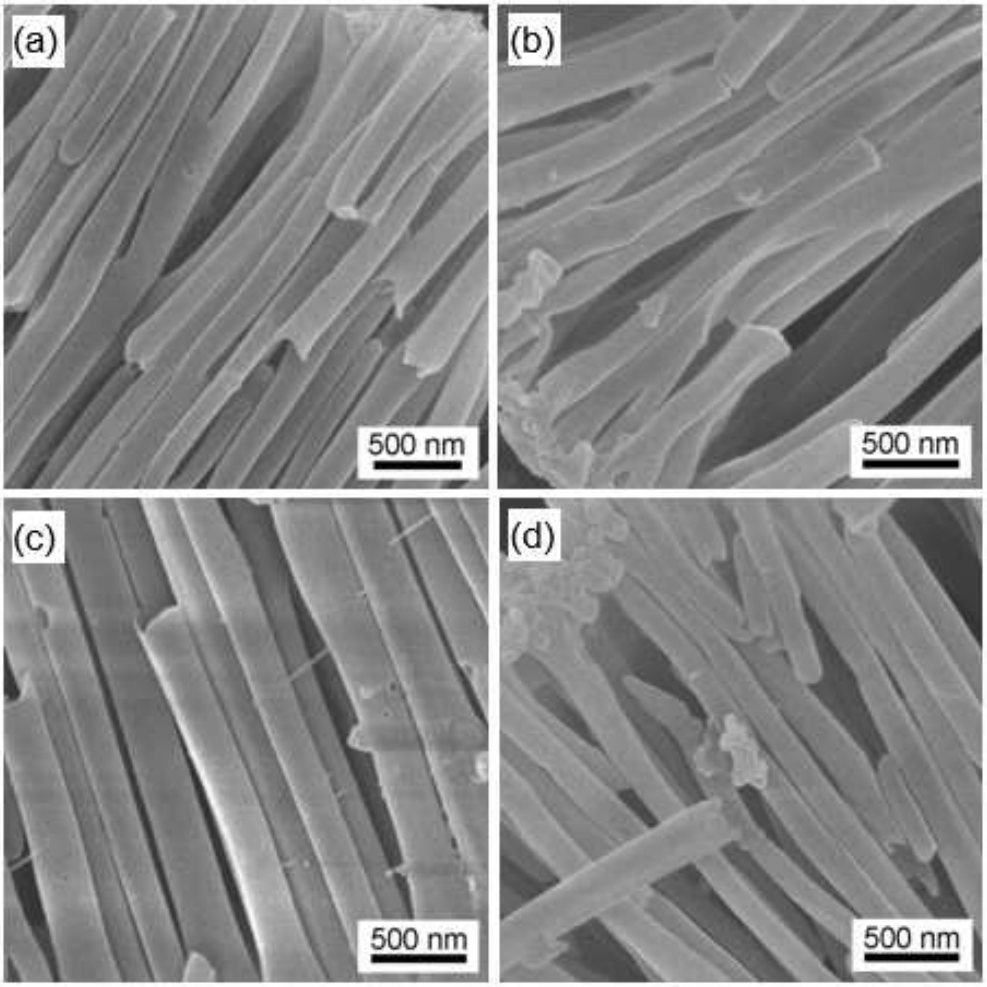

Figure S2. SEM images of polymer nanomaterials: (a) PMMA (M_w: 97 kg/mol) nanotubes prepared from a 5 wt % PMMA solution in acetic acid, (b) PMMA nanotubes after the PMMA sample is immersed in cyclohexane for 24 h, (c) PS (M_w: 35 kg/mol) nanotubes prepared from a 5 wt % PS solution in DMF, and (d) PS nanotubes after the PS sample is immersed in acetic acid for 24 h.

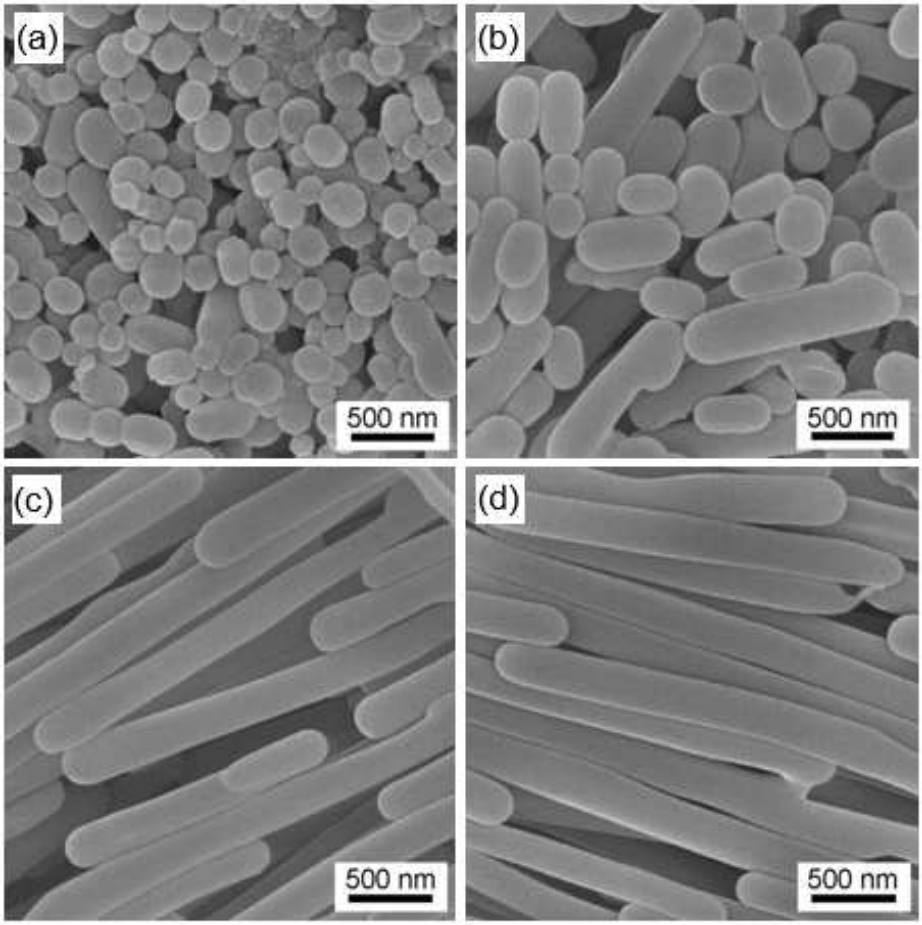

Figure S3. SEM images of PS (M_w: 78.5 kg/mol) nanospheres and nanorods. The samples are first prepared by dipping AAO templates in PS solutions in DMF with different concentrations, followed by immersing the samples in 10 wt % PMMA solutions in acetic acid. After the samples are dried, PMMA is removed selectively by acetic acid. The AAO templates are then dissolved by $NaOH_{(aq)}$ to release the polymer nanostructures. The concentrations of the PS solutions are (a) 5, (b) 10, (c) 20, and (d) 30 wt %.

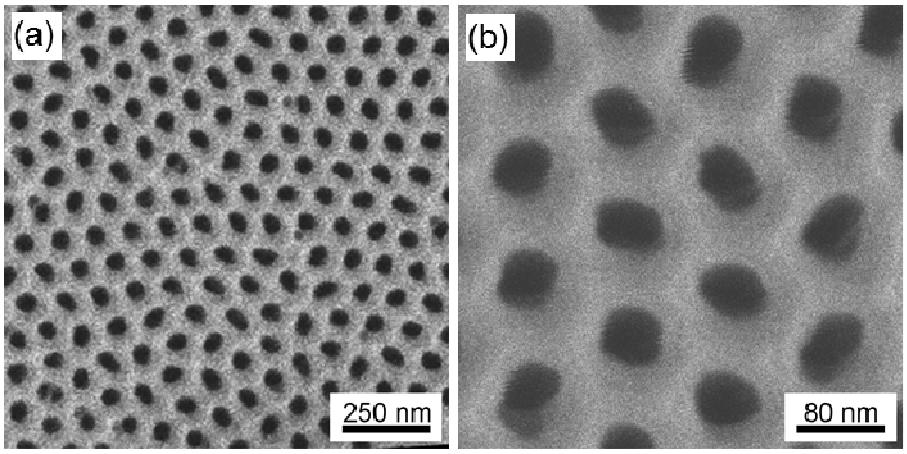

Figure S4. SEM images of synthesized AAO templates with pore sizes ~50 nm: (a) lower magnification and (b) higher magnification.

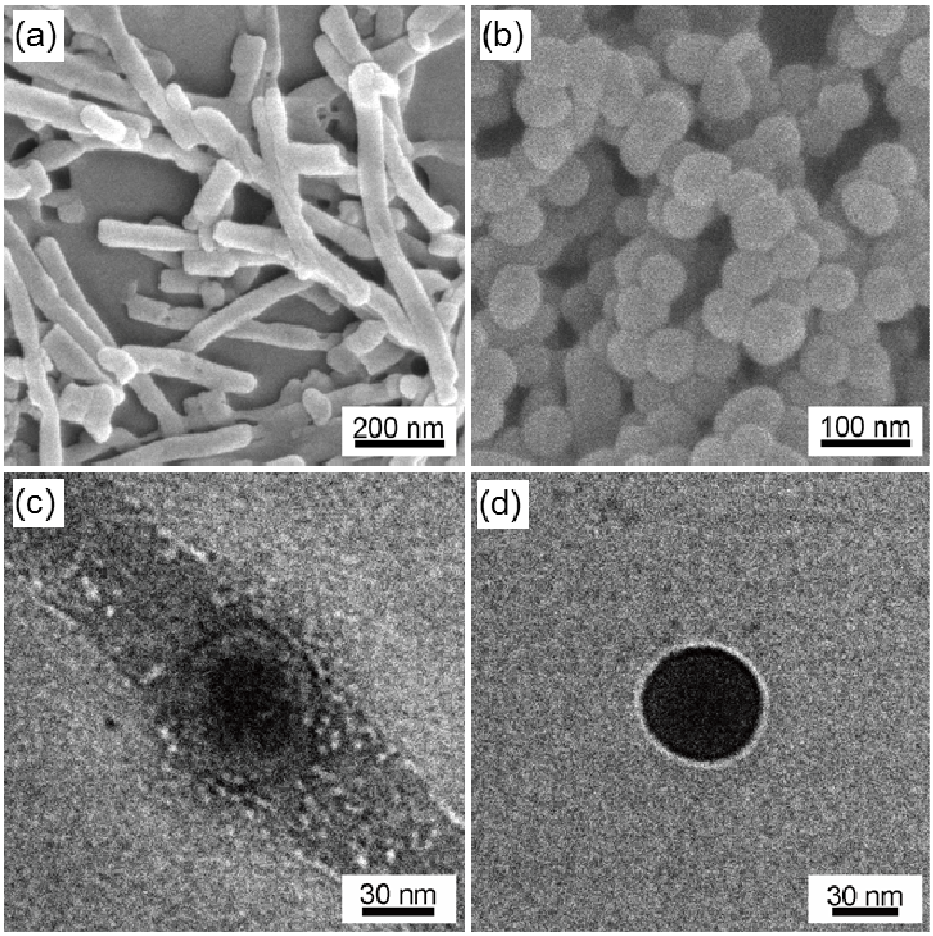

Figure S5. (a) SEM image of peapod-like PS (M_w: 35 kg/mol) /PMMA (M_w: 97 kg/mol) nanostructures. (b) SEM image of the PS nanospheres after the PMMA is removed selectively by acetic acid. (c) TEM image of a peapod-like PS/PMMA nanostructure. (d) TEM image of a PS nanosphere after the PMMA is removed selectively by acetic acid. The samples are obtained using synthesized AAO templates with pore diameters ~50 nm.