Three-dimensional PtNi Hollow Nanochains with Porous Structures as Enhanced Electrocatalyst for Oxygen Reduction Reaction

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Figure S1. TEM image of Ni nanosponges.

Figure S2. TEM image of PtNi without addition of F-127.
Figure S3. XPS spectra of 3D Pt$_{77}$Ni$_{23}$ (A), Pt$_{85}$Ni$_{15}$ (B), and Pt$_{91}$Ni$_{9}$ (C) HNCs. (D) High resolution XPS spectrum of Ni for 3D Pt$_{77}$Ni$_{23}$ HNCs.

Figure S4. (A) CV curves of Pt/C after prolonged cycles of CV with a scan rate of 100
mV/s. (B) LSV curves of Pt/C after potential sweep cycles.