

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

Shaofang Fu,^a Chengzhou Zhu,^{a*} Junhua Song,^a Mark Engelhard,^b Yang He,^c Dan

Du,^a Chongmin Wang,^b Yuehe Lin^{a*}

^a The School of Mechanical and Materials Engineering, Washington State University, Pullman, WA 99164, USA.

^b Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory, Richland, WA 99352, USA.

^c Department of Mechanical Engineering and Materials Science, University of Pittsburgh, PA 15261, USA.

Email: chengzhou.zhu@wsu.edu; yuehe.lin@wsu.edu

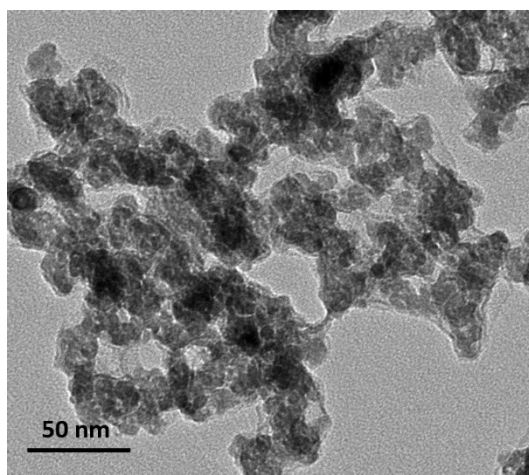


Figure S1. TEM image of Ni nanosponges.

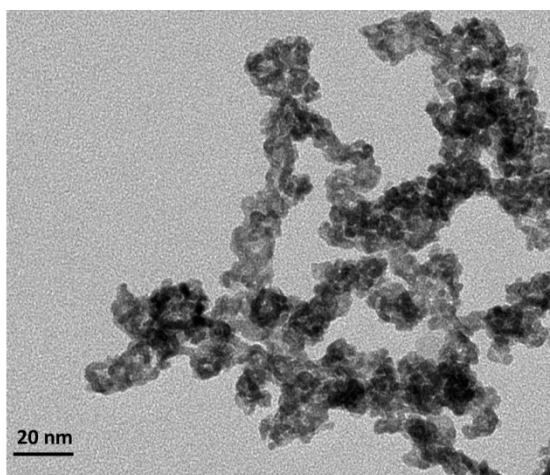


Figure S2. TEM image of PtNi without addition of F-127.

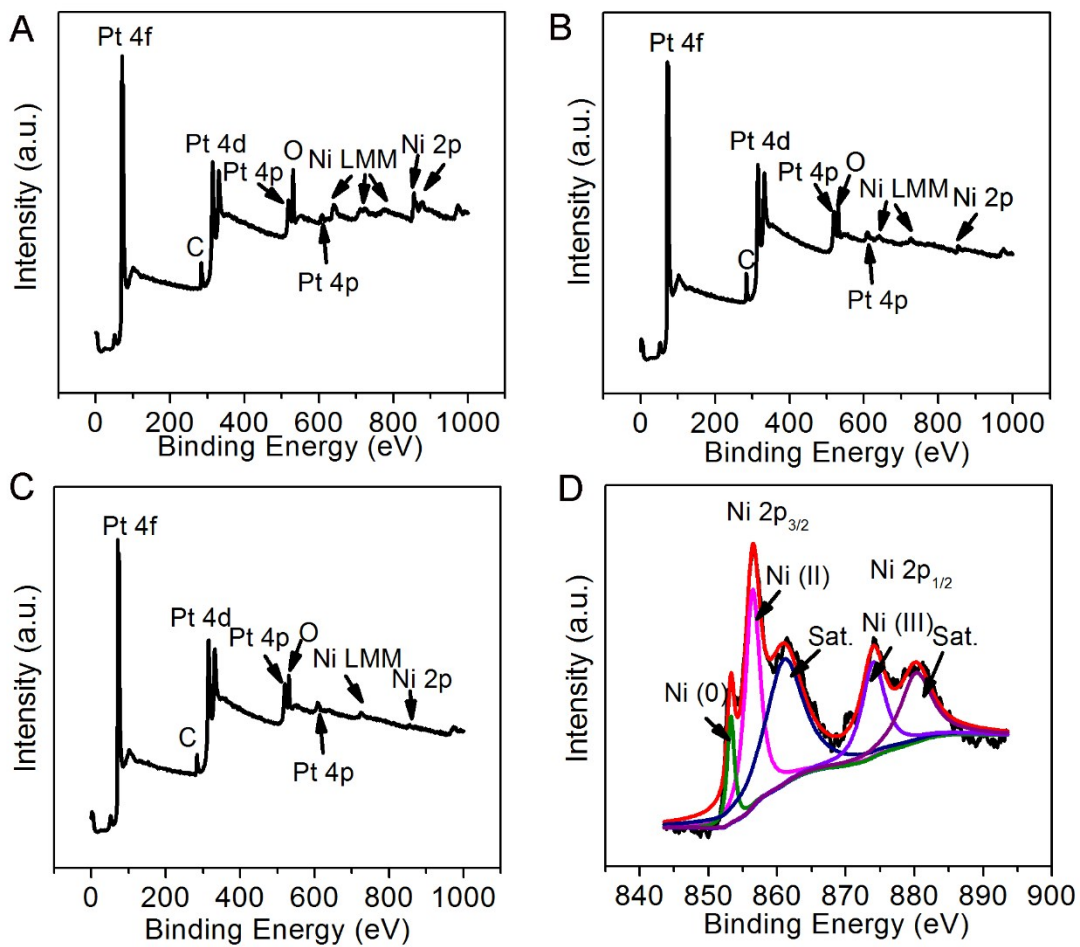


Figure S3. XPS spectra of 3D Pt₇₇Ni₂₃ (A), Pt₈₅Ni₁₅ (B), and Pt₉₁Ni₉ (C) HNCs. (D)

High resolution XPS spectrum of Ni for 3D Pt₇₇Ni₂₃ HNCs.

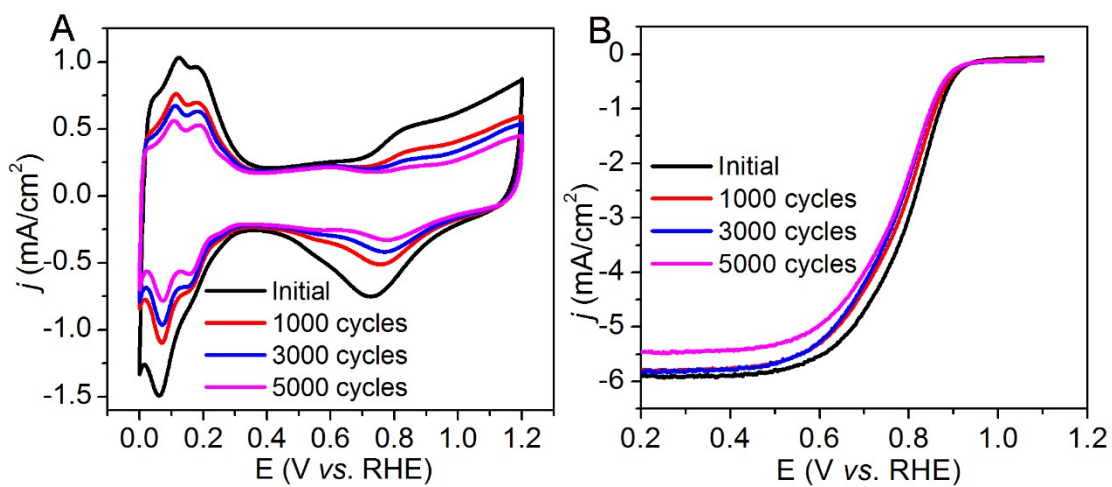


Figure S4. (A) CV curves of Pt/C after prolonged cycles of CV with a scan rate of 100

mV/s. (B) LSV curves of Pt/C after potential sweep cycles.