Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary material

Preparation of Octahedral PtNi/CNTs Catalyst and Application in High Durability for PEMFC Cathode

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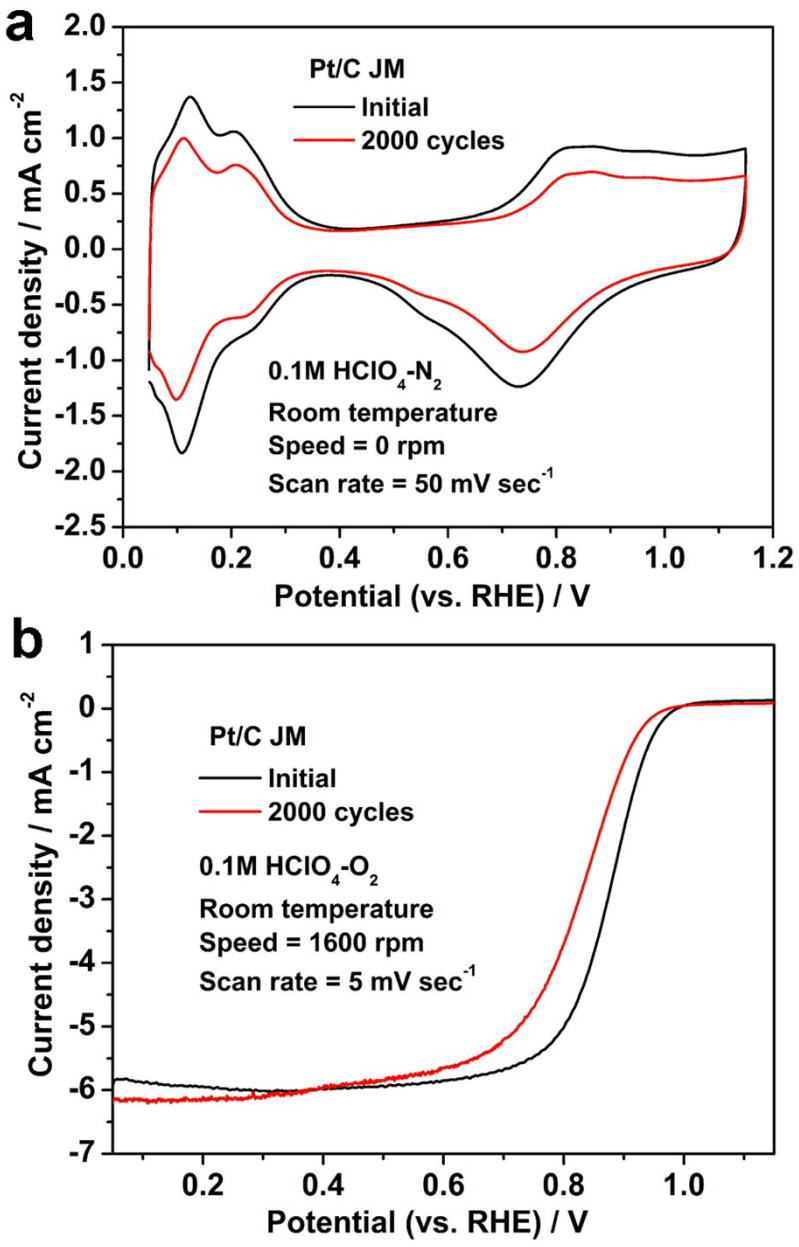

Fig. S1. (a) CV and (b) LSV curves of Pt/C (JM) before and after ADT.

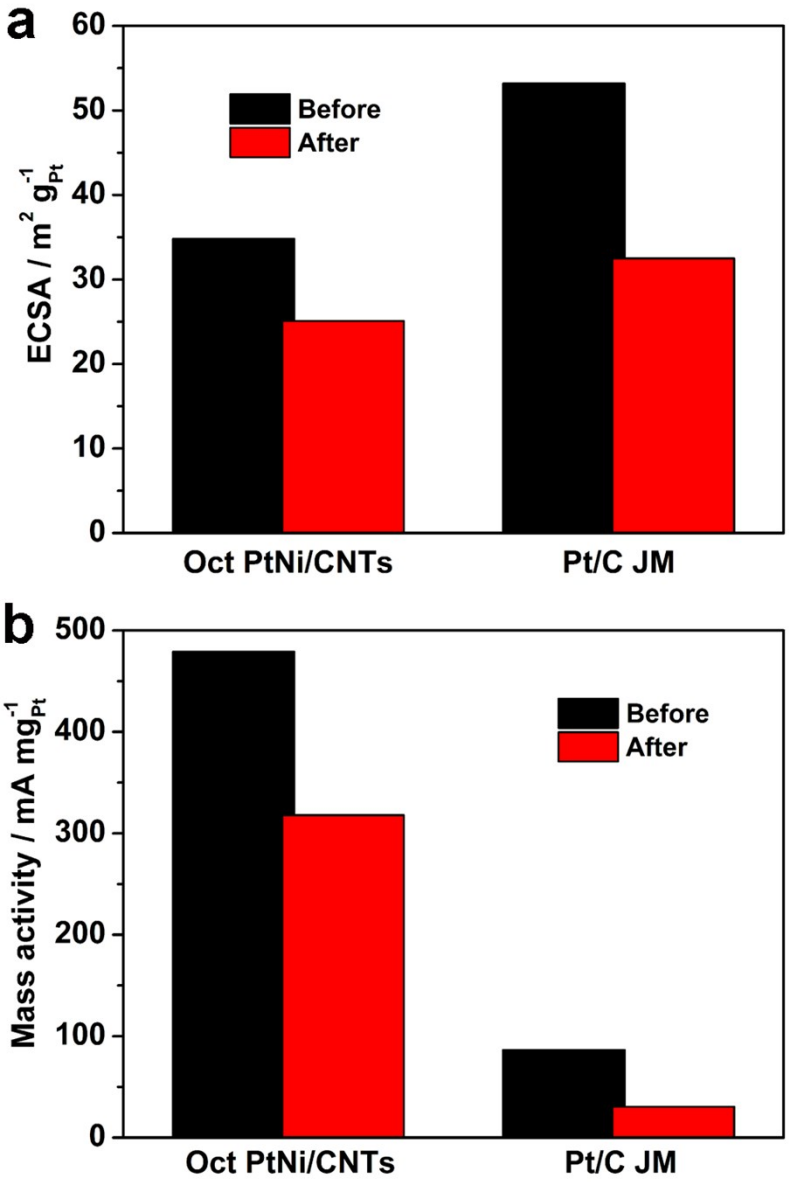

Fig. S2. Comparison of (a) ECSAs and (b) mass activities of octahedral PtNi/CNTs catalyst and Pt/C (JM) before and after ADT.

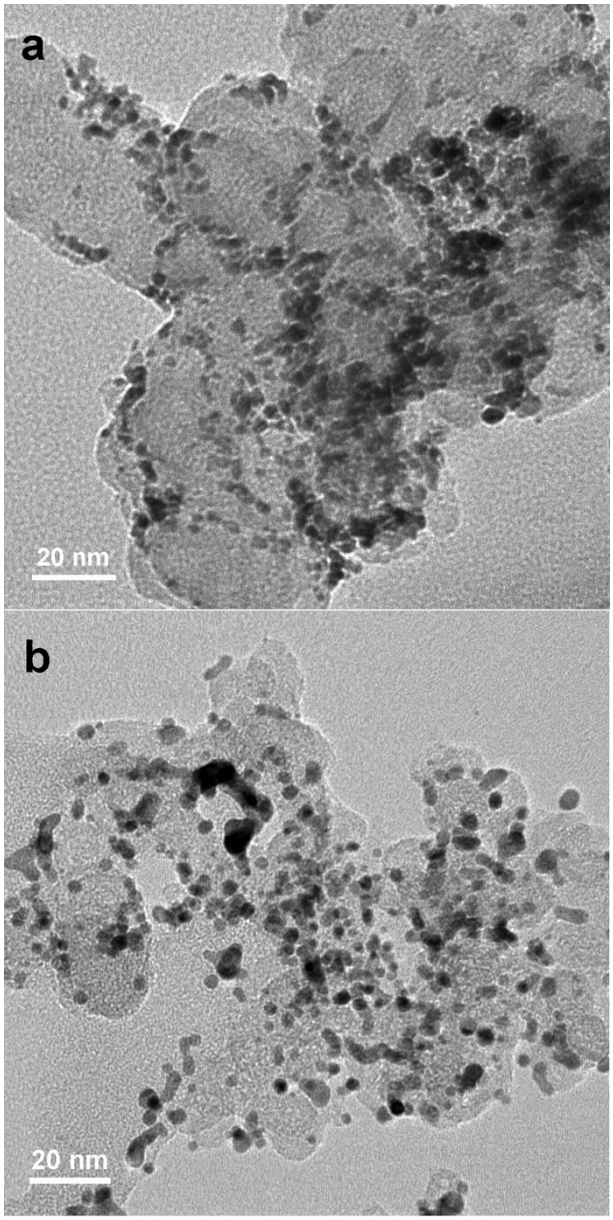

Fig. S3. TEM images of Pt/C (JM) (a) before and (b) after ADT.

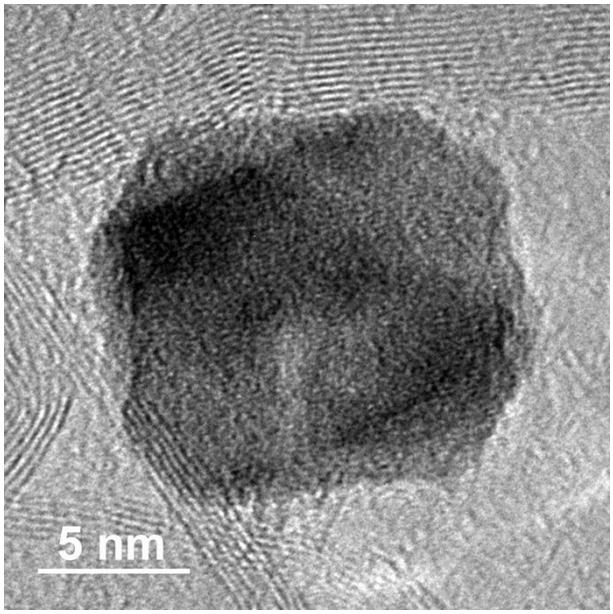

Fig. S4. HRTEM image of an individual PtNi octahedral nanocrystal after ADT.

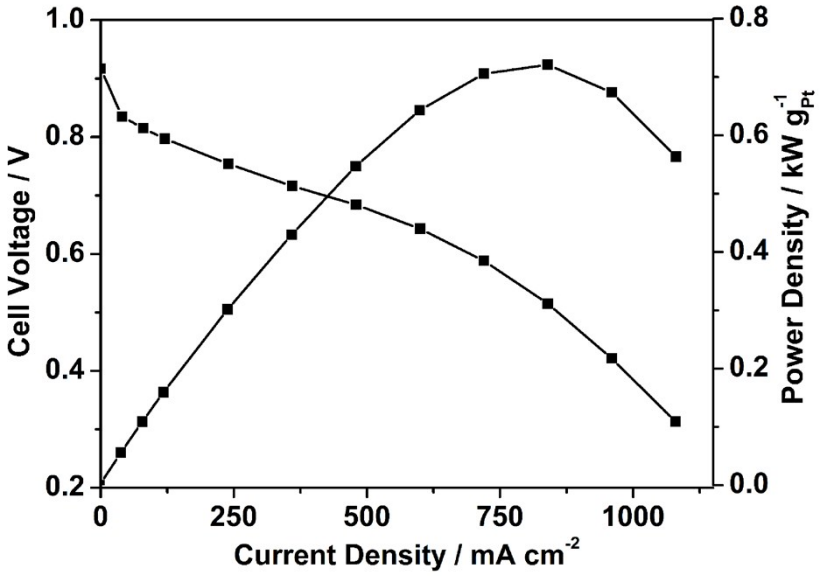

Fig. S5. The polarization curve of the MEA fabricated using octahedral PtNi/CNTs catalyst in cathode measured by the total Pt loading in both electrodes.

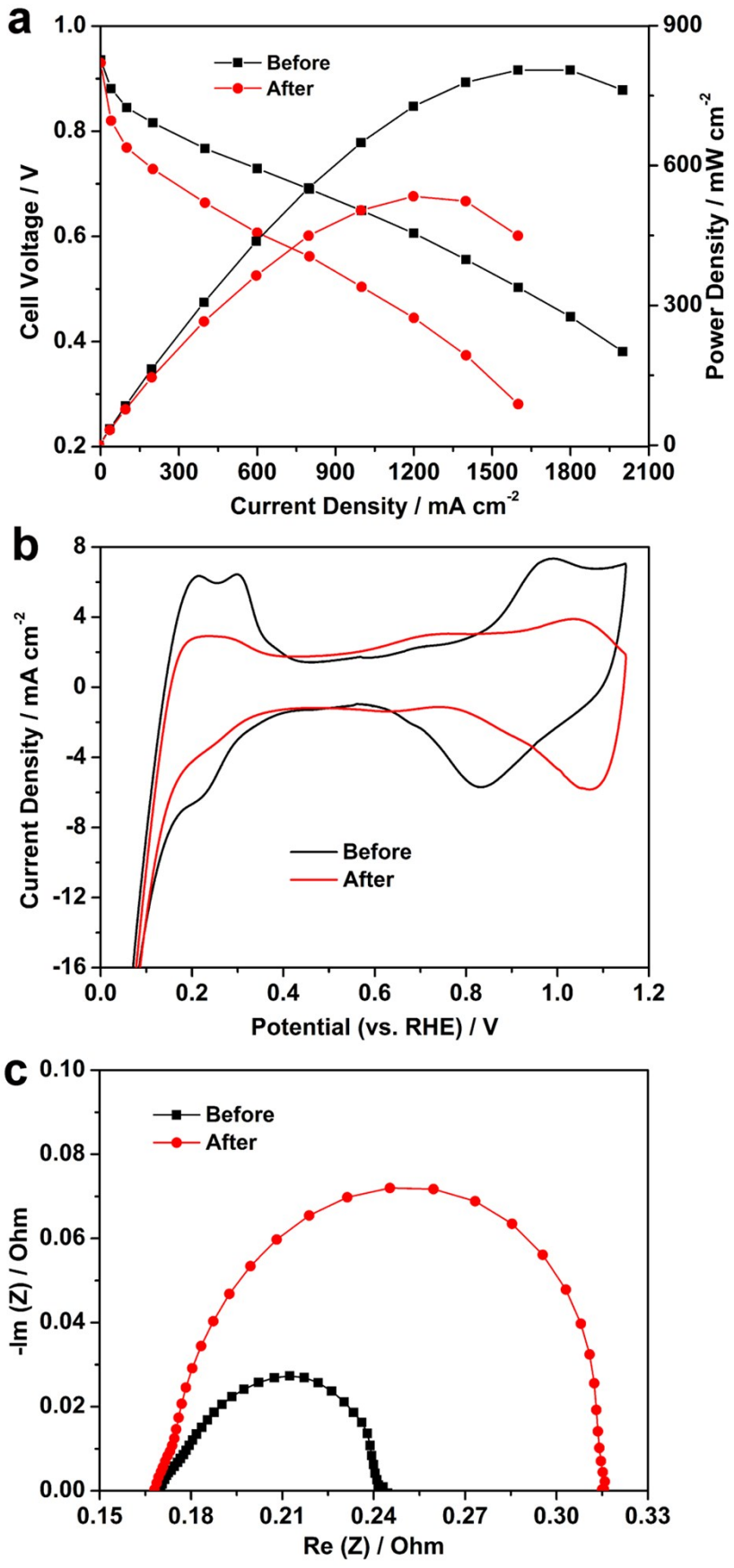

Fig. S6. (a) The polarization curves, (b) in-situ CV curves and (c) EIS of the MEA fabricated using Pt/C (JM)

before and after high potential durability test.

Table S1. Crystal sizes and lattice parameters of octahedral PtNi/CNTs catalyst and Pt/C (JM) calculated from XRD data

Catalyst	crystal size (nm)	Lattice parameter (Å)
Oct PtNi/CNTs	11.6	3.726
Pt/C (JM)	3.9	3.912