

Supporting Information

Facile Synthesis of Nitrogen-Doped Carbon-Supported Rhodium–Cobalt Alloy Electrocatalyst for Oxygen Reduction Reaction

Sujung Park ^{1,†}, NaHyun Park ^{1,†}, Muthuchamy Nallal ^{1,2}, Mohammad Yusuf ¹, Sungkyun Park ³, Jae-Myung Lee ^{4,*} and Kang Hyun Park ^{1,*}

¹ Department of Chemistry, Pusan National University, Busan 46241, Korea

² Department of Physics and Institute of High Pressure, Hanyang University, Seoul 04763, Korea

³ Department of Physics, Pusan National University, Busan 46241, Korea

⁴ Department of Naval Architecture and Ocean Engineering, Pusan National University, Busan 46241, Korea

* Correspondence: jaemlee@pusan.ac.kr (J.-M.L.), chemistry@pusan.ac.kr (K.H.P.); Tel.: +82-51-510-2238 (K.H.P.)

† These authors contributed equally to this work.

SI-1. Characterizations

The transmission electron microscopy (TEM) images and high-angle annular dark-field scanning transmission electron microscopy (HAADF-STEM) images were collected on the Talos F200X operated at 200 kV with energy-disperse X-ray spectroscopy (EDS) mapping process system. To research the crystal structure of the composites, X-ray powder diffraction (XRD) patterns were recorded on a Rigaku D/MAX-2500 diffractometer. X-ray photoelectron spectroscopy (XPS) performance was measured using a K-alpha (TM) with a micro-focused monochromator X-ray source. Raman spectrum was collected using a Raman microscope with a 514 nm laser.

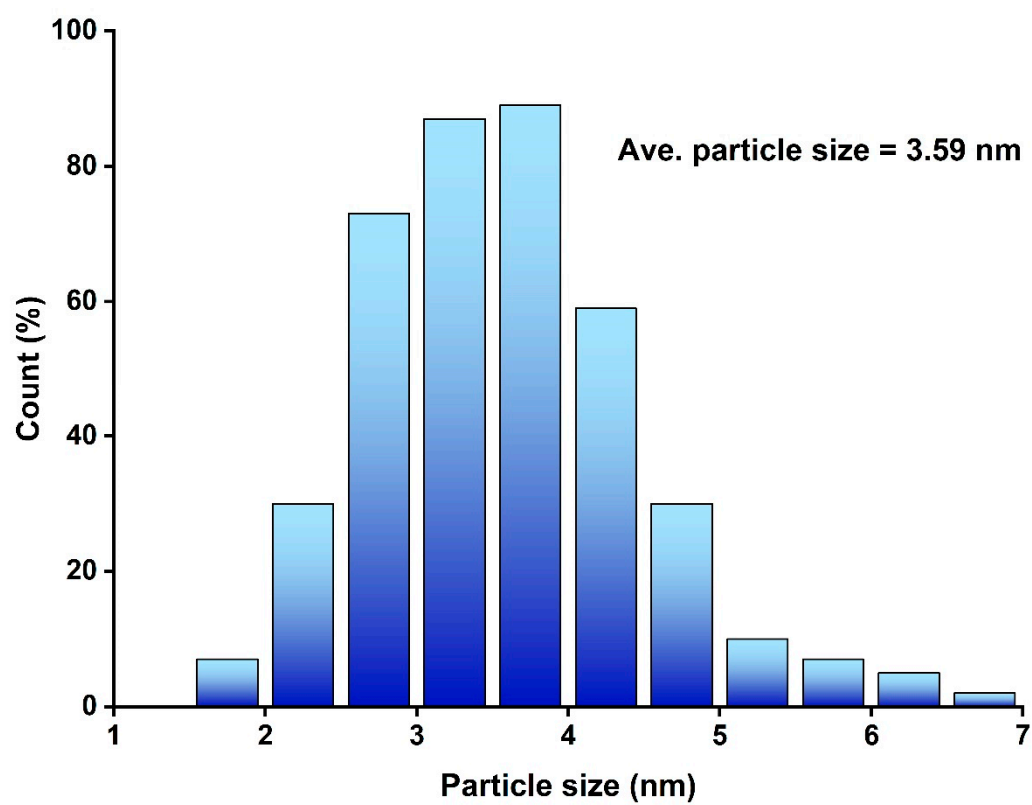


Figure S1. Histogram of particles size distribution of RhCo/NC.

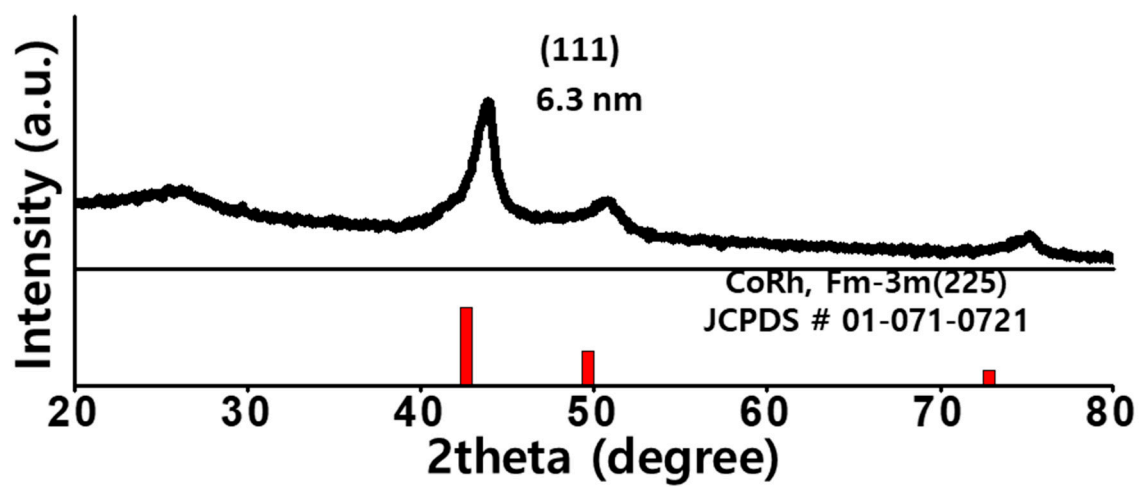


Figure S2. The XRD spectrum of RhCo/NC.

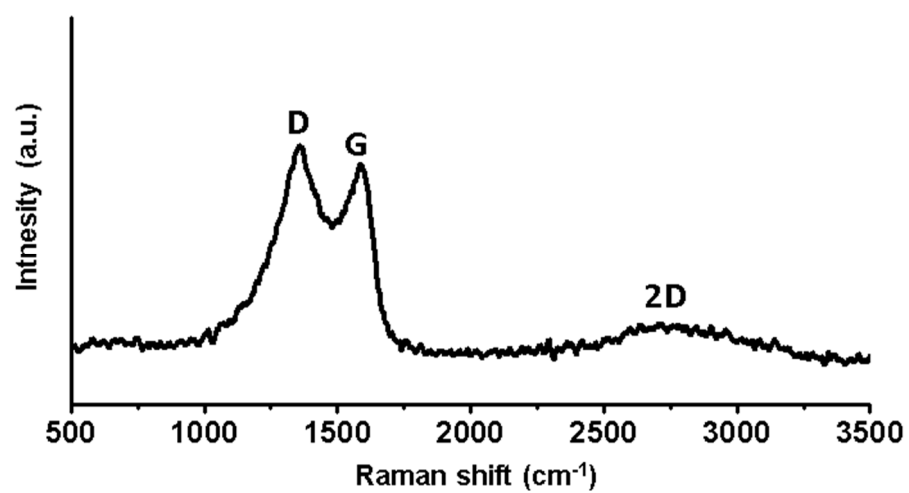


Figure S3. The Raman spectrum of RhCo/NC.

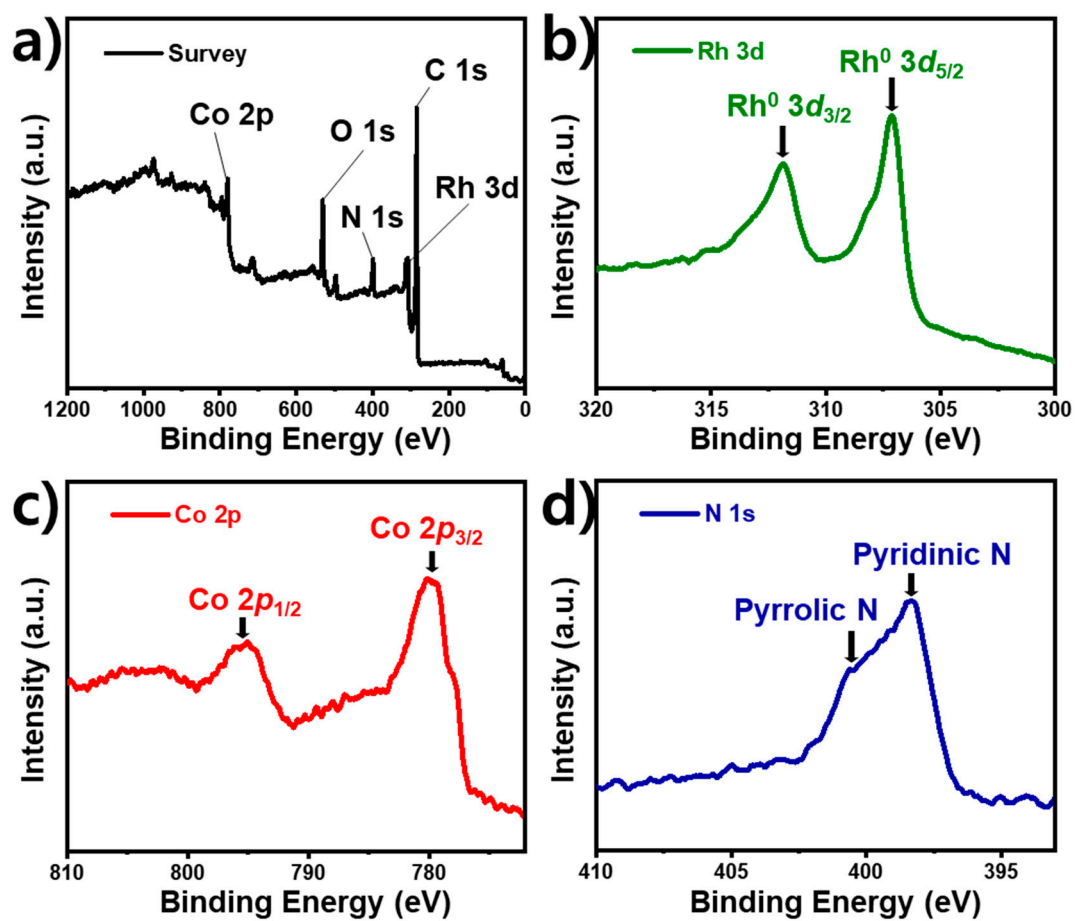


Figure S4. (a) XPS survey spectrum of RhCo/NC and XPS spectrum in the energy regions of (b) Rh 3d (c) Co 2p and (d) N 1s.

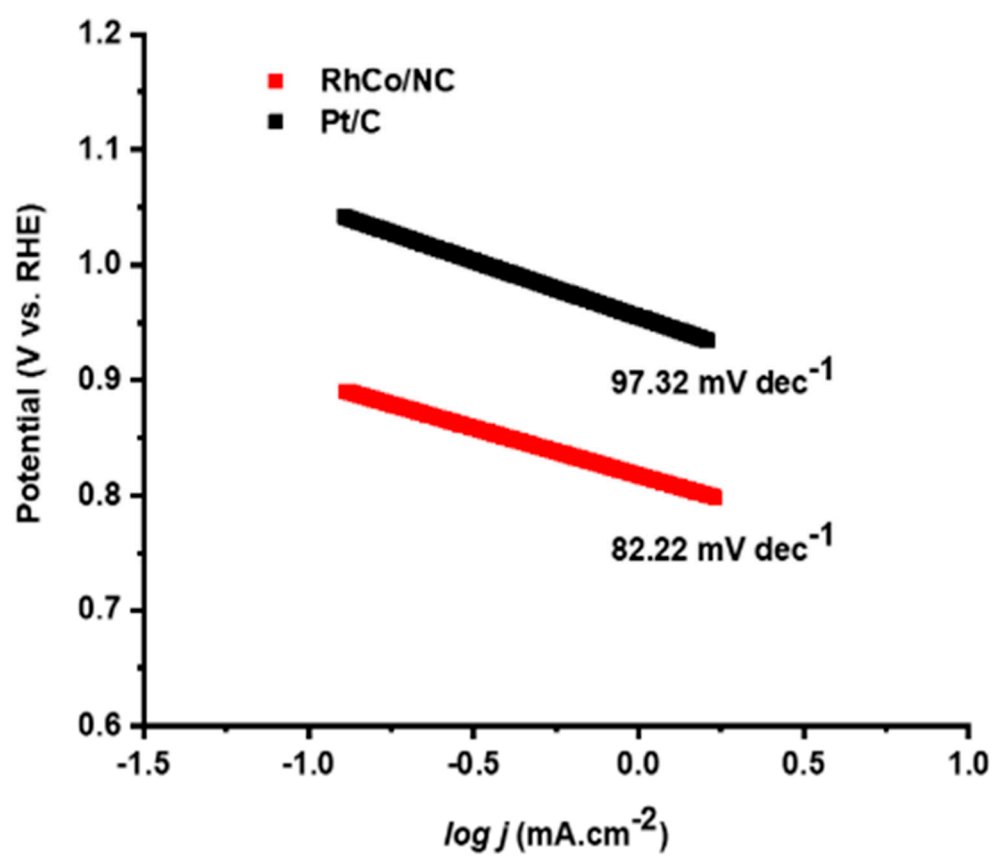


Figure S5. Tafel curves of RhCo/NC and Pt/C.

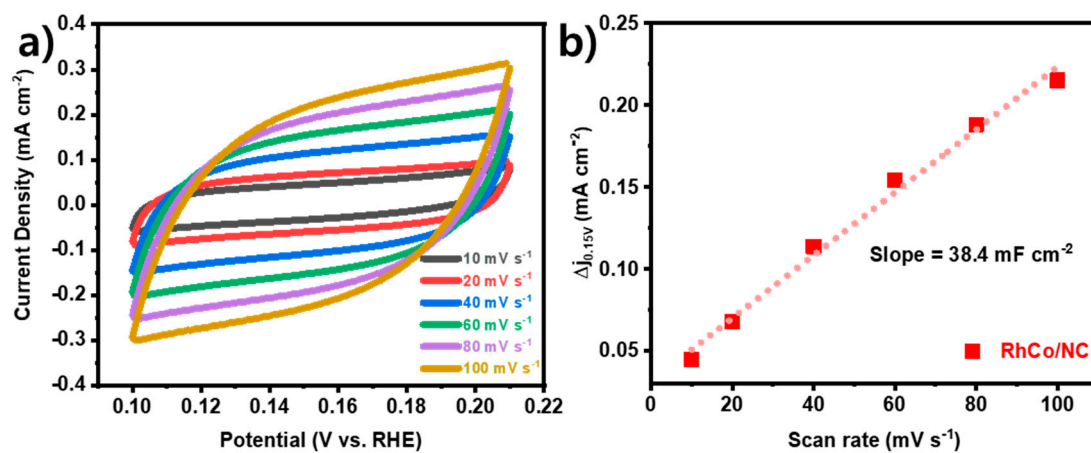


Figure S6. (a) The CV curves of RhCo/NC in 0.1 M KOH solution at different scan rates, (b) linearly fitted curve of corresponding scan rate vs capacitive currents.

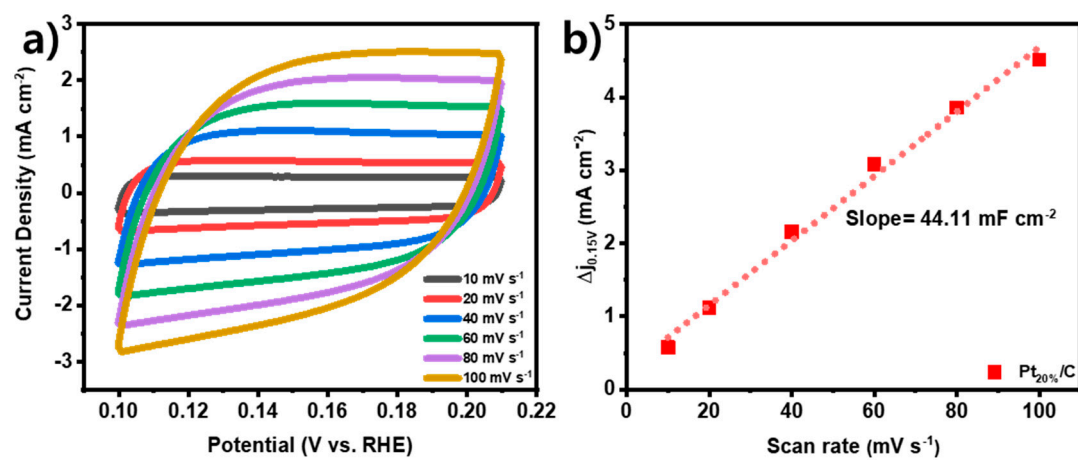


Figure S7. (a) The CV curves of Pt/C in 0.1 M KOH solution at different scan rates, (b) linearly fitted curve of corresponding scan rate vs capacitive currents.