

Supplementary Materials

Accelerating the Oxygen Reduction Reaction and Oxygen Evolution Reaction Activity of N and P co-doped Porous Activated Carbon for Li-O₂ Batteries

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Figures

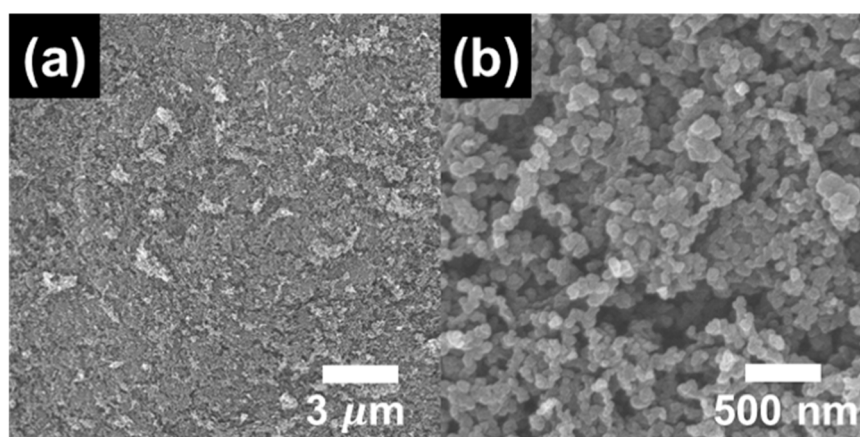


Figure S1. Low- and high-resolution FESEM images of K·B.

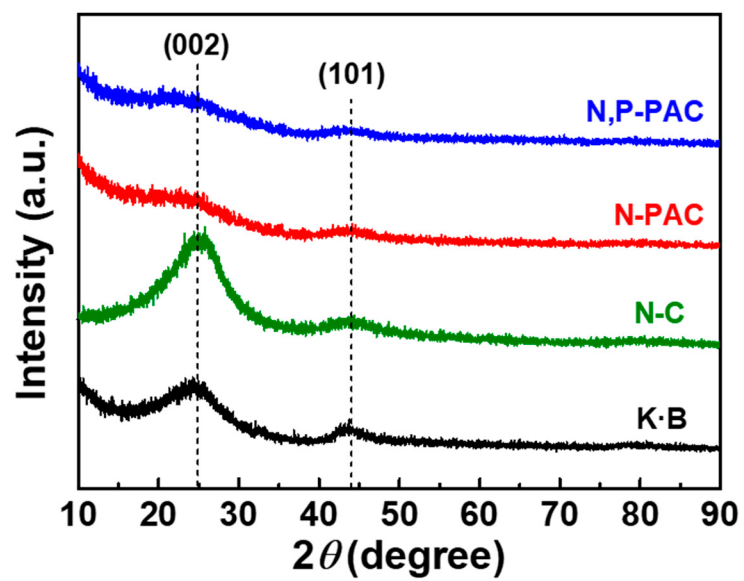


Figure S2. XRD patterns of K-B, N-C, N-PAC, and N,P-PAC.

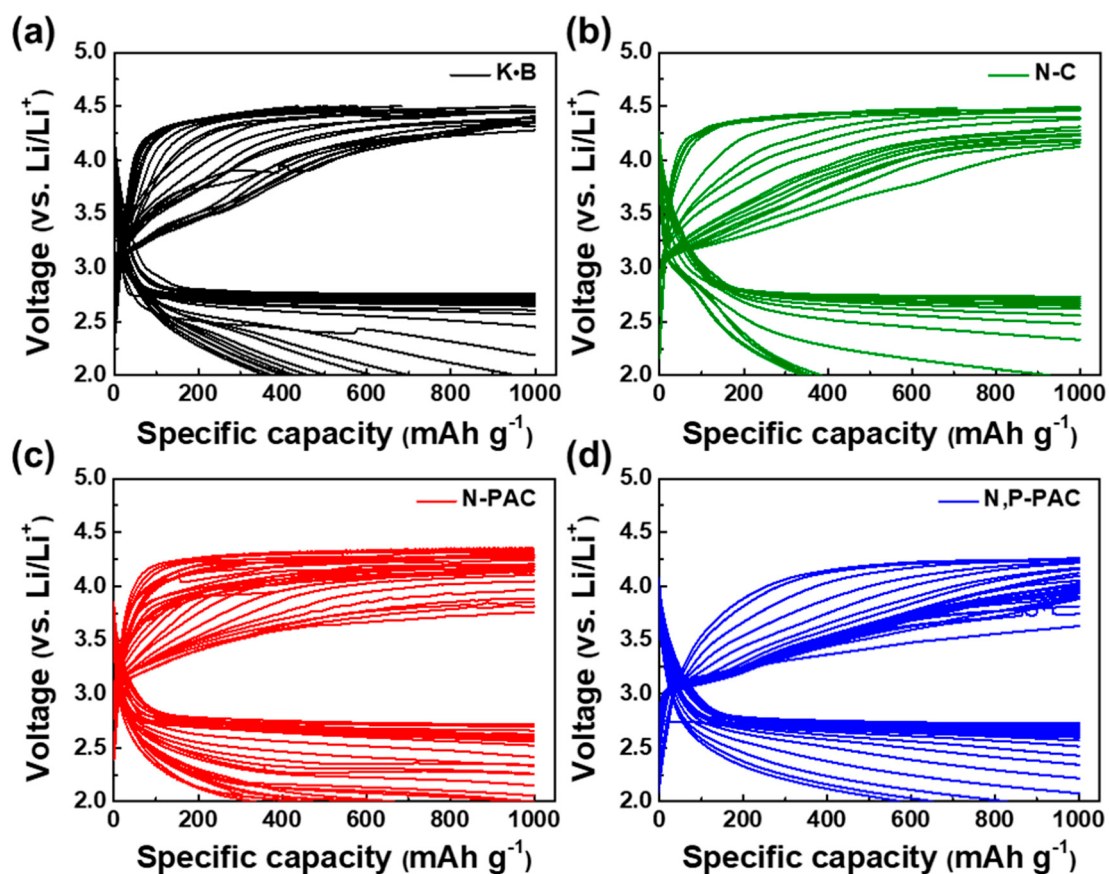


Figure S3. (a) K-B, (b) N-C, (c) N-PAC, and (d) N,P-PAC electrodes capacity-limited charge/discharge profiles for 30 cycles over the potential range of 2.0–4.5 V at a current density of 100 mA g⁻¹.

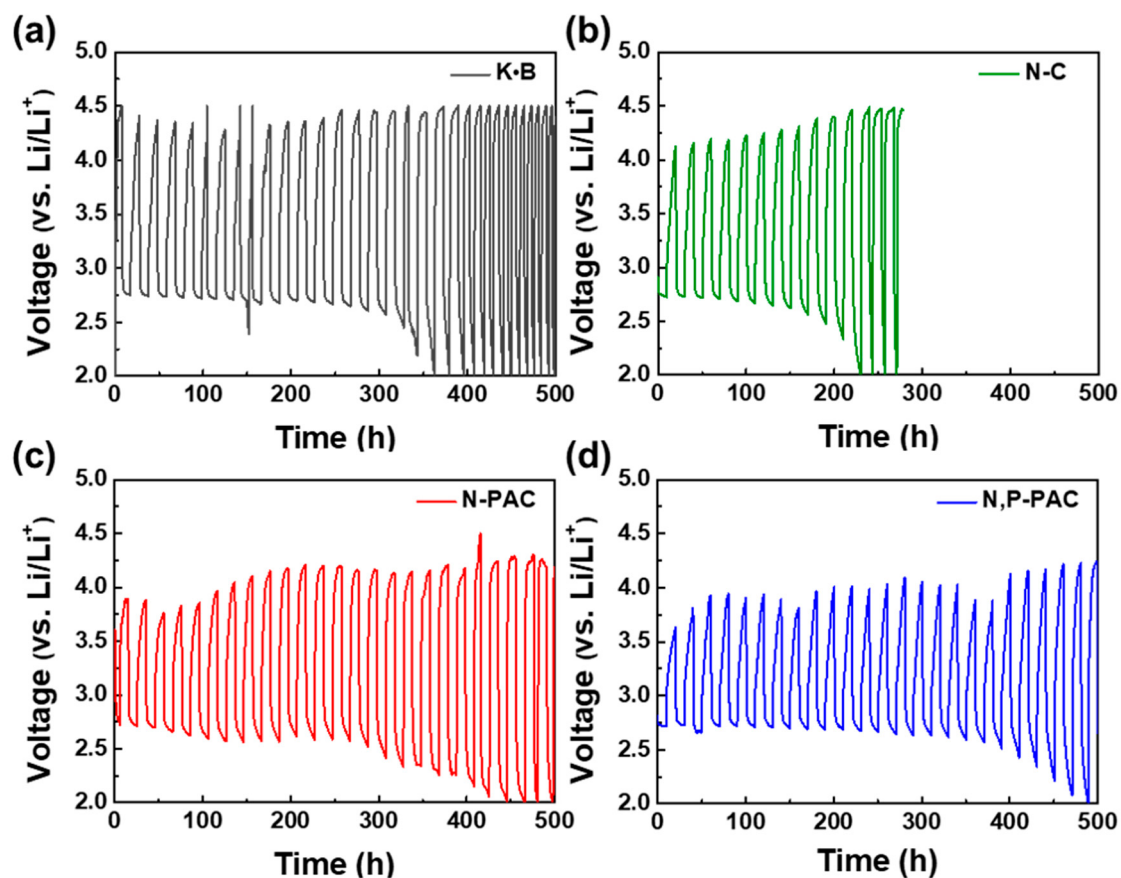


Figure S4. Ohmic resistance of the (a) K·B, (b) N-C, (c) N-PAC, and (d) N,P-PAC electrodes related to their charge/discharge reversibilities during cycling, their voltage (V) vs. time (h) profiles over the potential range of 2.0–4.5 V for up to 500 h under a specific capacity limit of 1000 mA h g⁻¹.

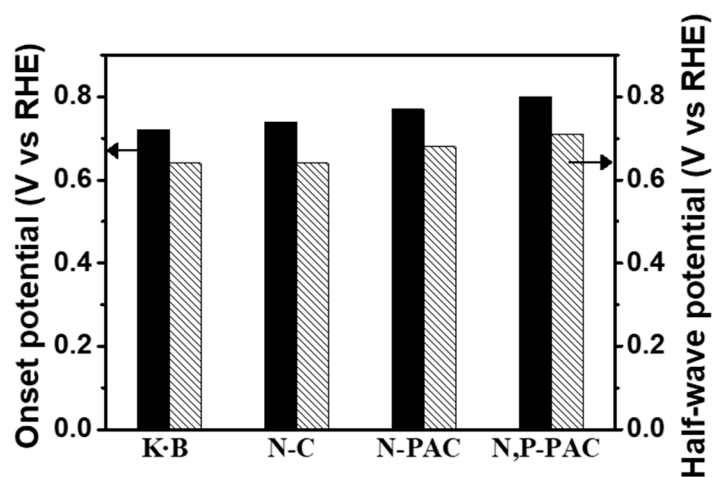


Figure S5. Comparison of Onset potential (V vs RHE) and the half-wave potential (V vs RHE) of K-B, N-C, N-PAC, and N,P-PAC.

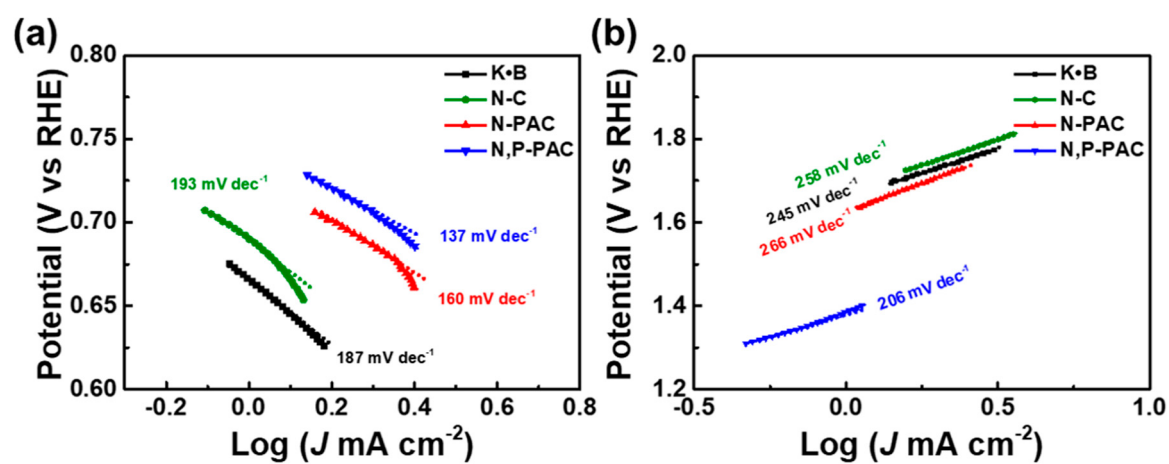


Figure S6. (a) ORR and (b) OER Tafel plots of K·B, N-C, N-PAC, and N,P-PAC.

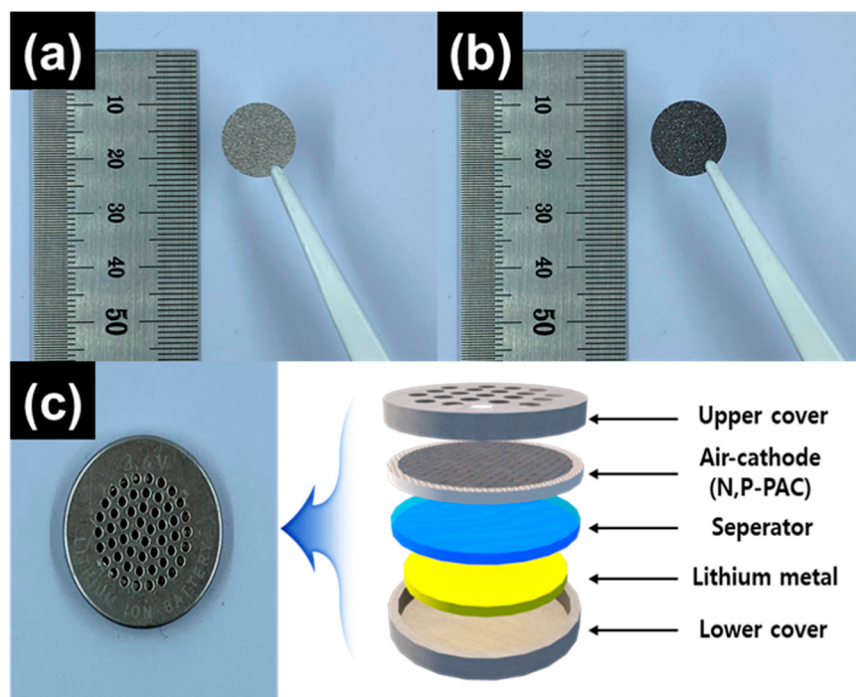


Figure S7. Photograph of (a) bare Ni substrate, (b) N,P-PAC spray-coated air-cathode by spray method on Ni substrate, and (c) photograph and structure diagram of assembled cell.

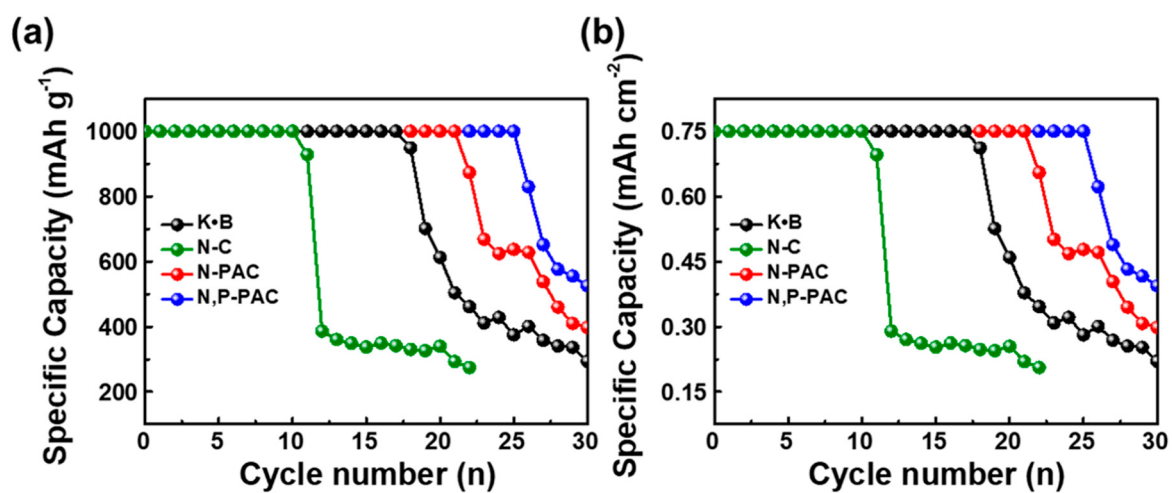


Figure S8. Cycle performances of K·B, N-C, N-PAC, and N,P-PAC electrodes measured over the potential range of 2.0–4.5 V at a current density of 100 mA g⁻¹ according to (a) gravimetric-specific capacity and (b) area-specific capacity.