

Supplementary Information

Well-dispersed Pt/RuO₂-Decorated Mesoporous N-doped Carbon as a Hybrid Electrocatalyst for Li-O₂ Batteries

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Figures

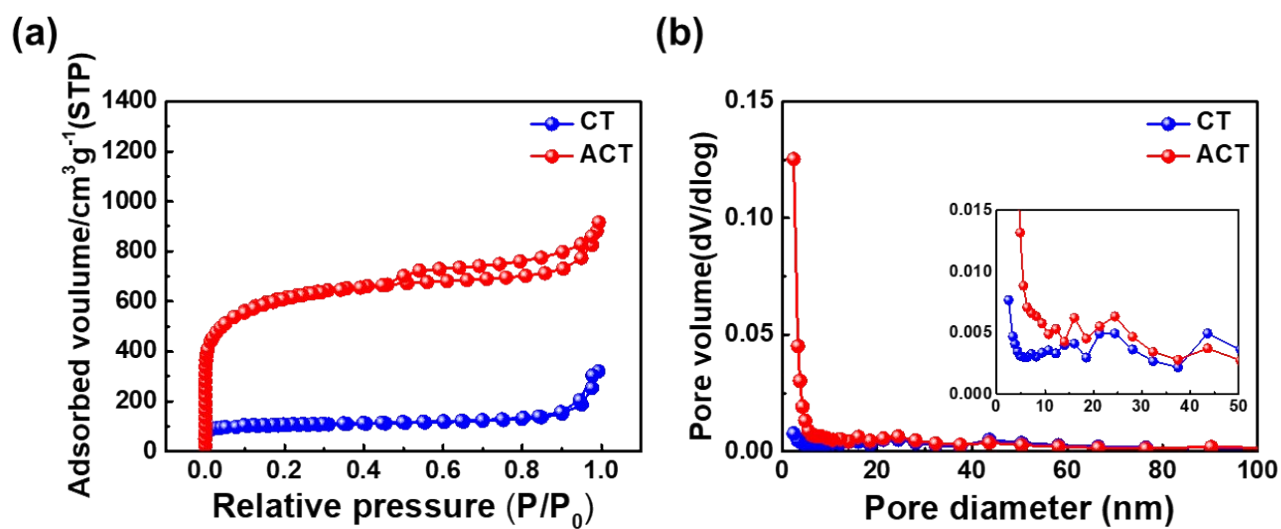


Fig. S1 (a) N₂ adsorption/desorption BET and (b) BJH pore diameter distributions isotherms obtain from CT and ACT.

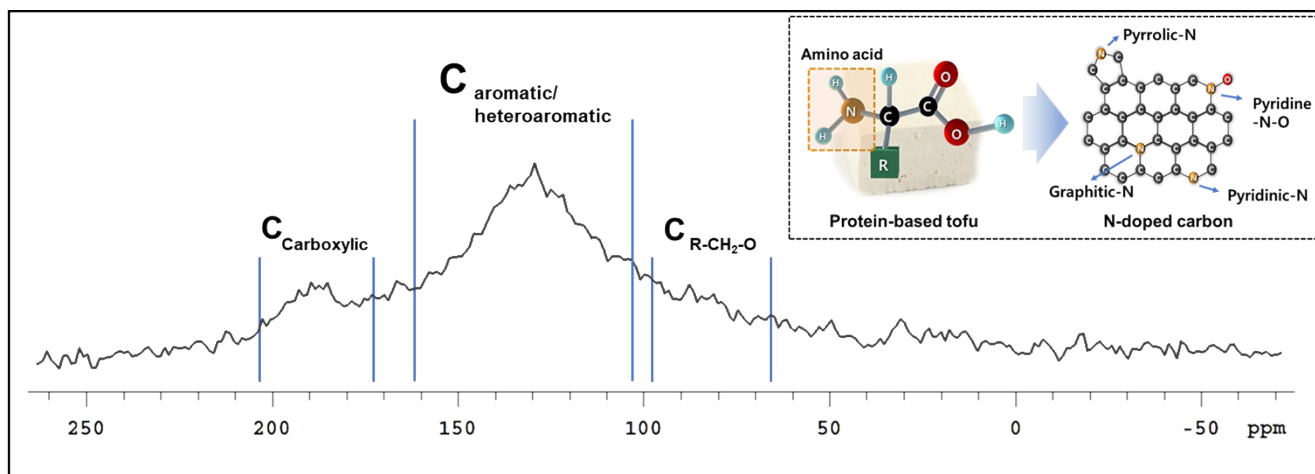


Fig. S2 ^{13}C solid-state MAS NMR spectrum of ACT

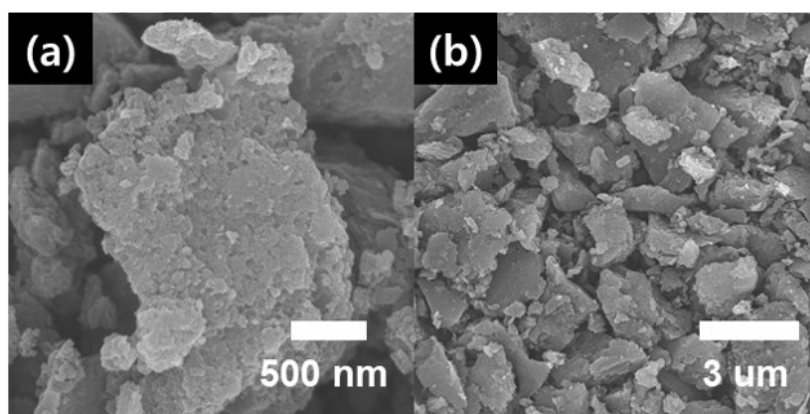


Fig. S3 (a)Low- and (b) high-resolution FESEM images of CT.

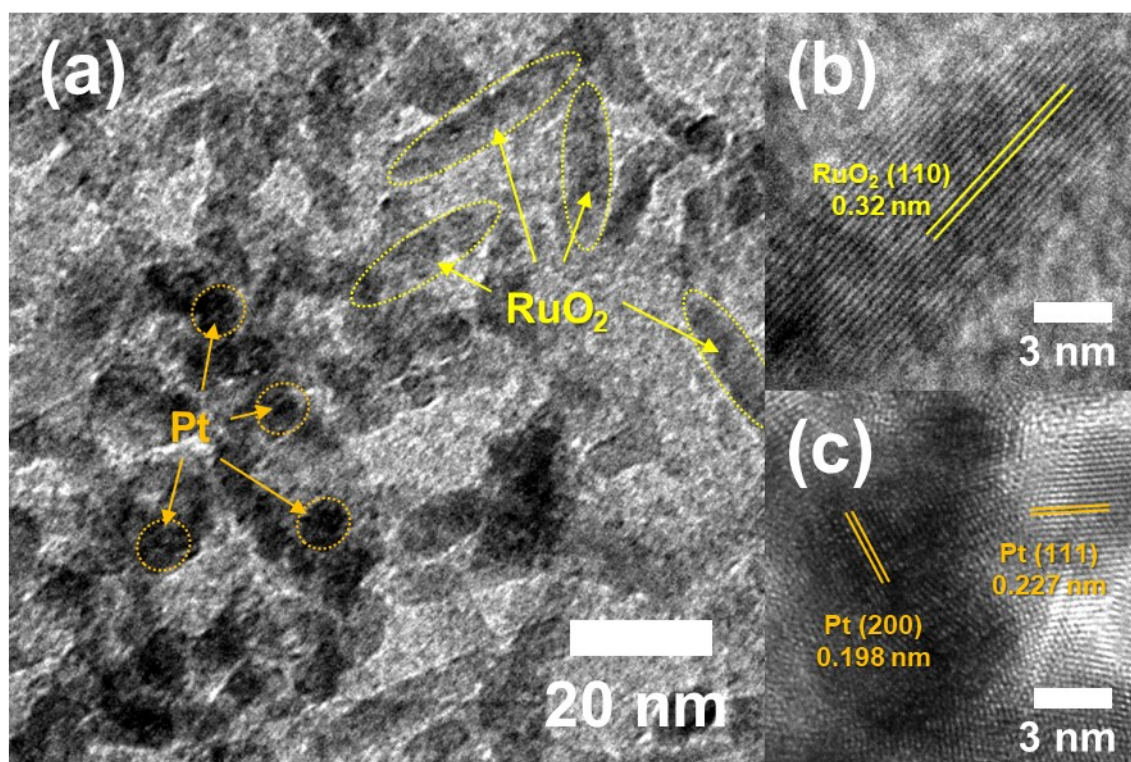


Fig. S4 (a-c) High-resolution TEM images of Pt/RuO₂@ACT

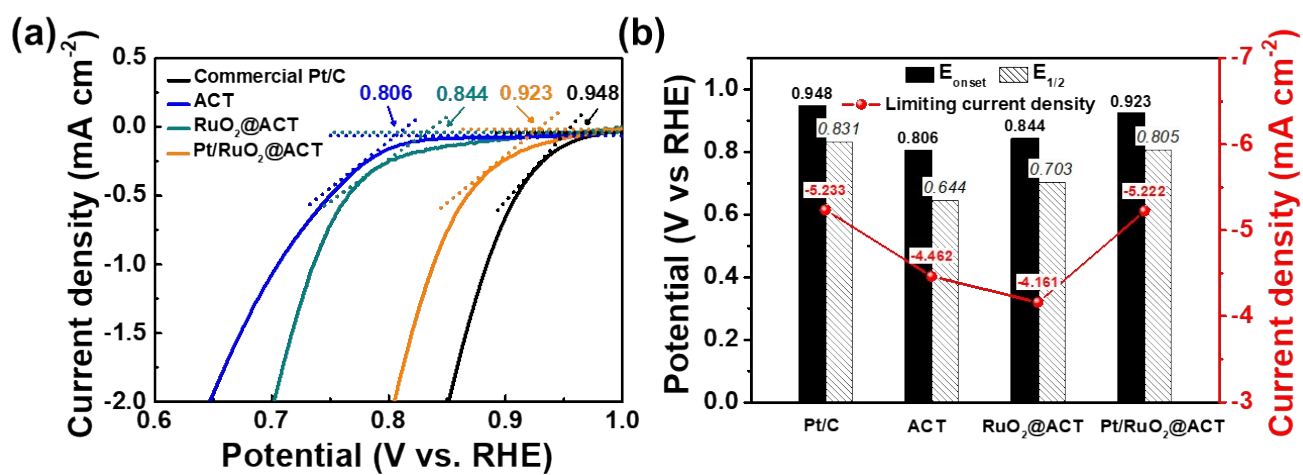


Fig. S5 (a) E_{onset} determination in expanded LSV curves, and (b) the comparison of E_{onset} , $E_{1/2}$, and Limiting current density (V vs RHE) of commercial Pt/C, ACT, RuO₂@ACT, and Pt/RuO₂@ACT.

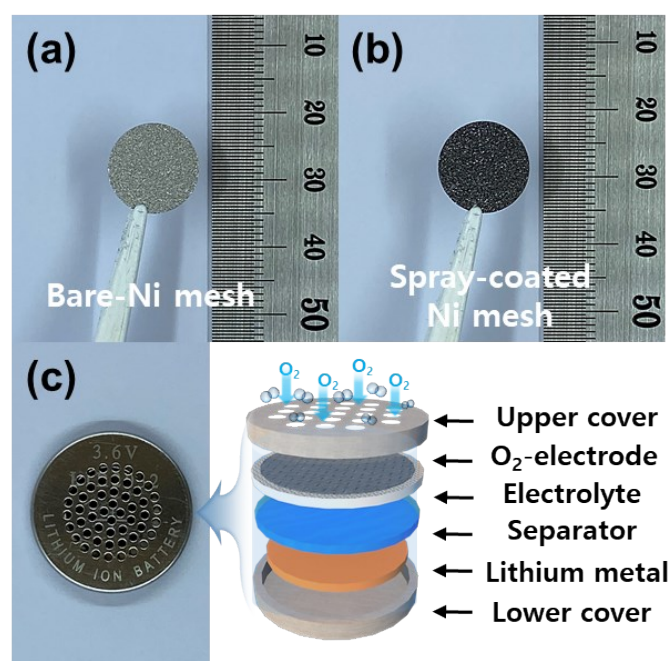


Fig. S6 Photograph of (a) Bare-Ni mesh, (b) Spray-coated Ni mesh by spray coating method, and (c) photograph and component diagram of the assembled cell

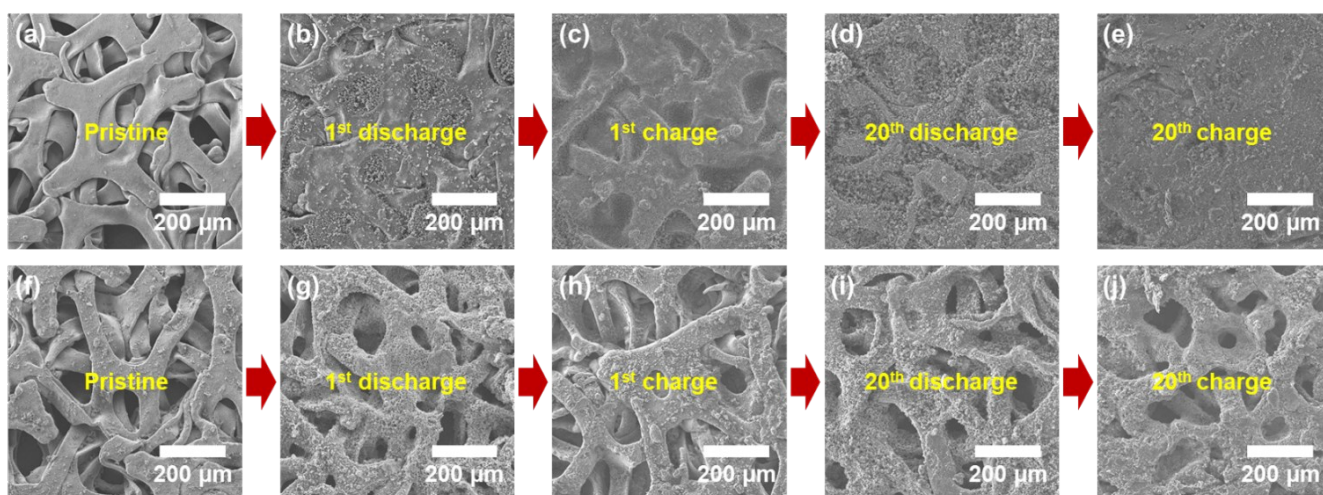


Fig. S7 SEM images of KB and Pt/RuO₂@ACT O₂-electrodes loaded on the Ni substrate at various discharge-charge states: (a, f) pristine electrode, (b, g) 1st discharge, (c, h) 1st charge, (d, i) 20th discharge, and (e, j) 20th charge.

Tables

Samples	S_{BET} ($\text{m}^2 \text{ g}^{-1}$)	Total pore volume ($p/p_0=0.990$) ($\text{cm}^3 \text{ g}^{-1}$)	Average pore diameter (nm)	Pore size distribution	
				V_{micro} (%)	V_{meso} (%)
CT	393.7	0.48	4.88	-	-
ACT	2241.6	1.38	2.46	55%	45%

Table. S1 Summarized BET and BJH results of CT and ACT samples.

Sample	Element contents (wt %)					
	C	H	O	N	S	P
ACT	79.79	0.10	7.81	1.79	0.14	0.01

Table. S2 Summarized EA and ICP-AES results of ACT.