Supplementary Information

Electrocatalytic activity for oxygen reduction reaction of metal-free oxygen-containing nanocarbon synthesized by solution plasma

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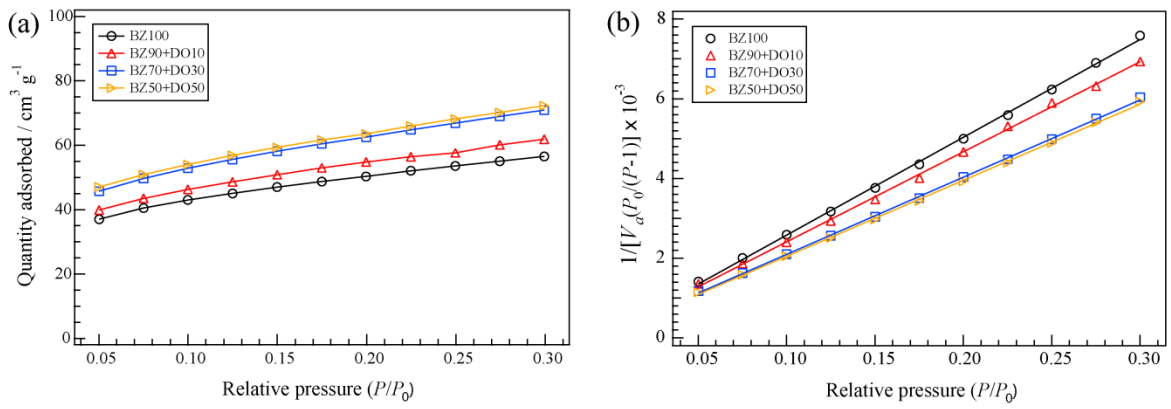

Figure SI1. (a) N_2 adsorption isotherm plot and (b) multi-point BET surface area plot for all carbon samples.

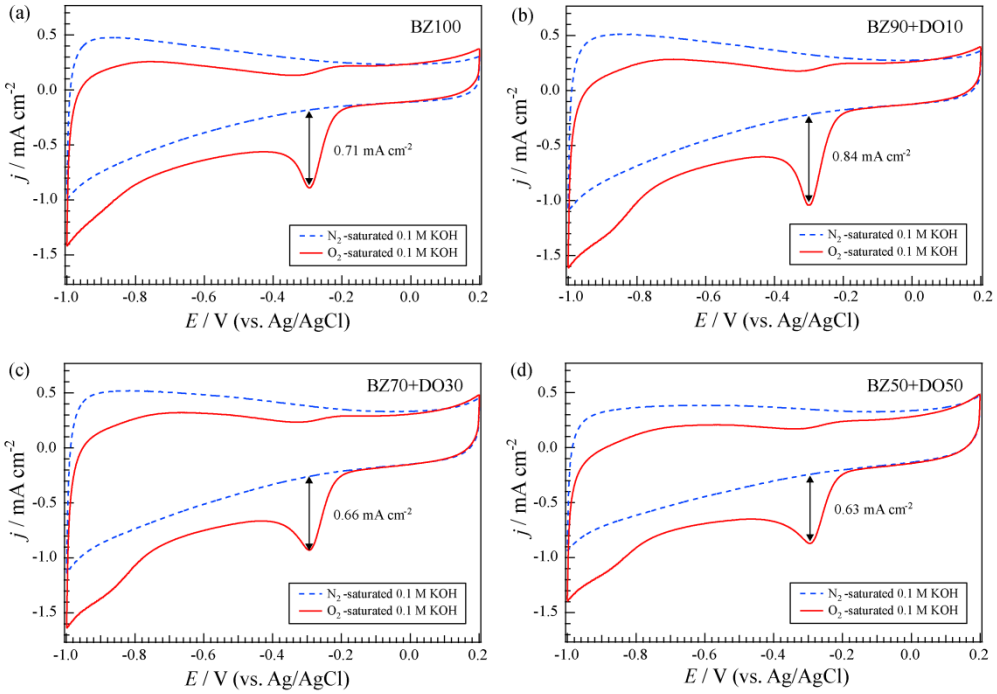

Figure SI2. Cyclic voltammograms of the nanocarbon samples synthesized from (a) BZ100, (b) BZ90+DO10, (c) BZ70+DO30, and (d) BZ50+DO50 in a 0.1 M KOH solution saturated with N_2 (dashed line) and O_2 (solid line).

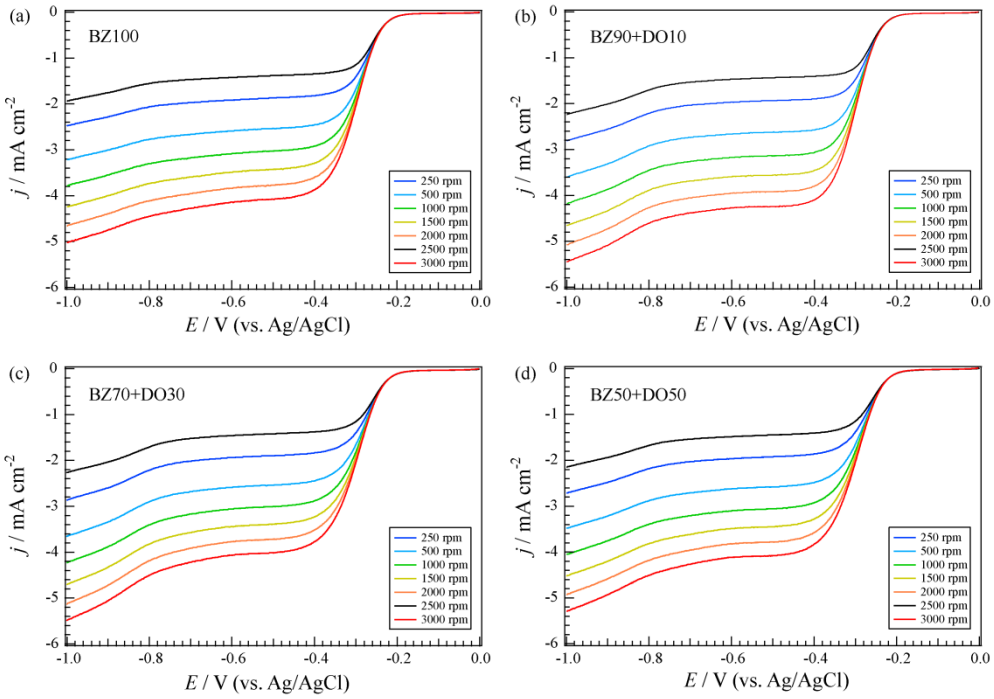

Figure SI3. LSV curves of the nanocarbon samples synthesized from (a) BZ100, (b) BZ90+DO10, (c) BZ70+DO30, and (d) BZ50+DO50. The measurement was performed at different rotation speeds (250–3000 rpm) in an O_2 saturated 0.1 M KOH solution with a scan rate of 10 mV s^{-1}.

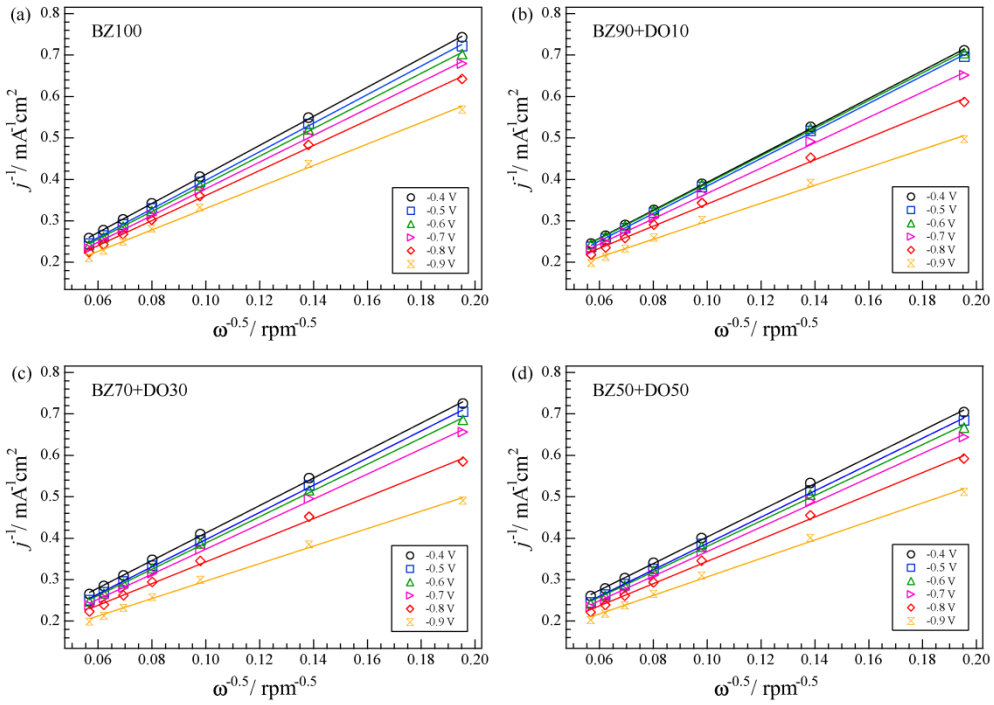

Figure SI4. K-L plots at different potentials of the nanocarbon samples synthesized from (a) BZ100, (b) BZ90+DO10, (c) BZ70+DO30, and (d) BZ50+DO50.

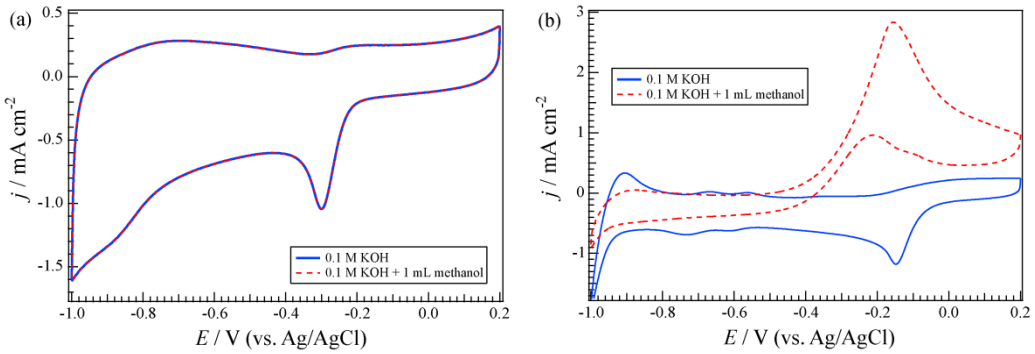

Figure SI5. Comparative CV curves before (solid line) and after addition of 1 mL methanol (dashed line) of (a) nanocarbon synthesized from BZ90+DO10 and (b) 20 wt% Pt/carbon.