Supporting Information

Metal-free nitrogen-doped hollow carbon spheres synthesized by thermal treatment of poly(o-phenylenediamine) for oxygen reduction reaction in direct methanol fuel cell applications

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Materials

Fig. S1 LSV measurements for NCNT, MWCNT and NHCSs performed in 0.1 M KOH at a scan rate of 100 mV s⁻¹.
**Fig. S2** Tafel curves of MWCNTs (a) and NHCSs (b) extracted from the polarization curves in Fig. S2.

**Fig. S3** Chronoamperometric responses for NHCSs and Pt catalysts in the O$_2$-saturated 0.1 M KOH solution before and after 3.0 M methanol was added.