

Supplementary Information

A novel strategy for sulfur-doped carbon nanotube as a high-efficient Pt catalyst support toward methanol oxidation reaction

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1. FTIR characterization of the prepared materials

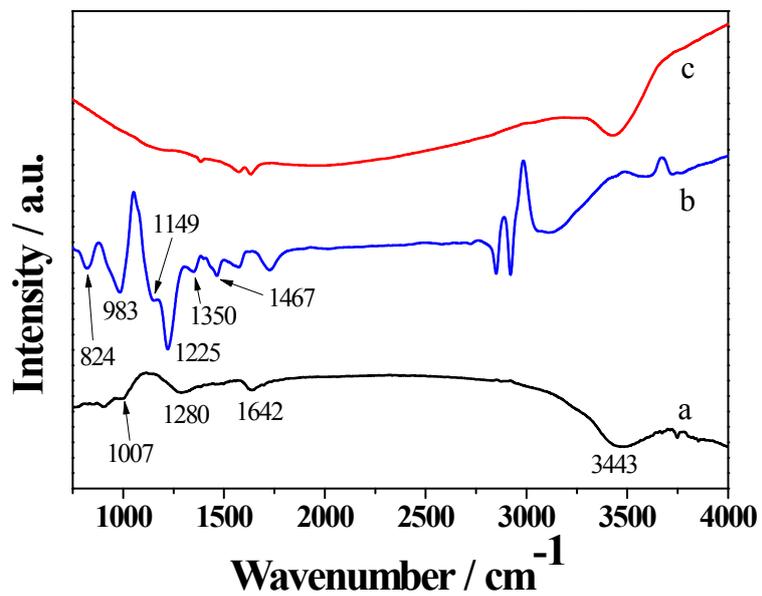


Fig. S1 FTIR spectra of AO-MWCNTs (a) PEDOT/AO-MWCNTs (b) and S-MWCNTs (c)

2. Large-area TEM image of Pt/S-MWCNTs

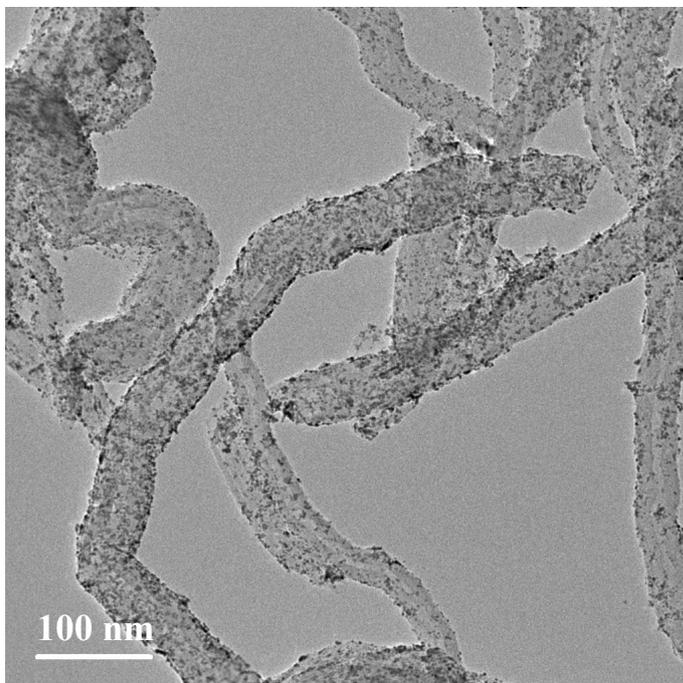


Fig. S2 Large-area TEM image of Pt/S-MWCNTs

3. High-resolution TEM image of Pt/S-MWCNTs

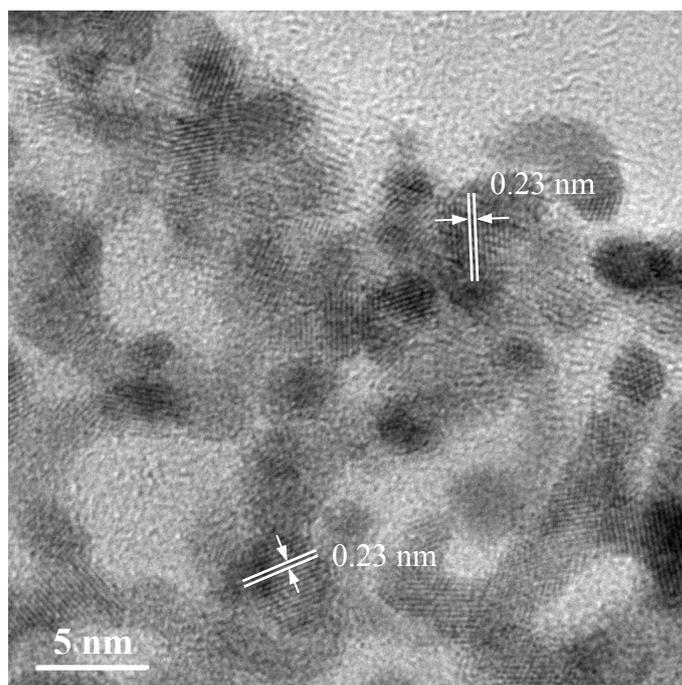


Fig. S3 High-resolution TEM image of Pt/S-MWCNTs

4. S 2p XPS spectrum for PEDOT/AO-MWCNTs

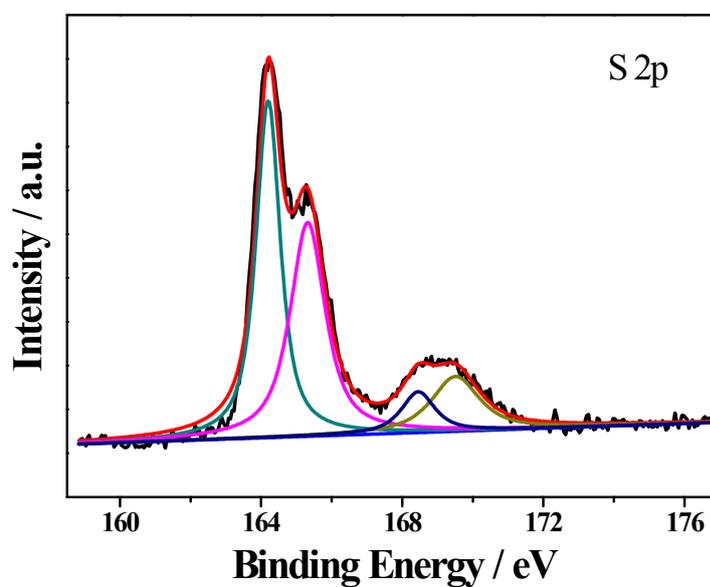


Fig. S4 S 2p spectrum of PEDOT/AO-MWCNTs

5. Performance comparison of different electrocatalysts

Table S1 Performance comparison of MOR on the Pt/S-MWCNTs and other published Pt-based electrocatalysts

Catalyst	ECSA (m ² g ⁻¹)	Peak current density (forward scan, mA mg ⁻¹ _{Pt})	Scan rate (mV s ⁻¹)	Methanol concentration (mol L ⁻¹)	Reference
Pt/S-rGO	39.42	465	50	1.0	1
Pt/MnO _x -PEDOT-MWCNTs	48.73	585.1	50	0.5	2
Pt/TMPyP-graphene	126.2	731.8	50	0.5	3
Pt-PSS-G	—	539.2	50	0.5	4
PA-GNS/Pt	82.9	365.6	25	1.0	5
Pt-on-Pd nanodendrites/graphene	81.6	647.2	50	1.0	6
Pt-NR/CeO ₂ /GNs	72.6	498	50	0.5	7
Pt/NCQDs-MWCNT	46.5	420	50	0.5	8
PtZn/MWNT-E	—	612	50	1.0	9
Pt/C _{Ru-dim}	47.27	344.2	20	0.5	10
Pt/3D-NG	52.2	551.5	50	0.5	11
Pt/S,N-OMC	94	508	50	1.0	12
Pt/S-MWCNTs	161.4	803.9	50	0.5	This work

Supplementary References

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