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Electronic Supplementary Information for

P-doped PtTe mesoporous nanotube electrocatalyst

Ziqiang Wang, Hugang Zhang, Shuli Yin, Songliang Liu, Zechuan Dai, You Xu, Xiaonian Li, Liang Wang* and Hongjing Wang*

State Key Laboratory Breeding Base of Green-Chemical Synthesis Technology, College of Chemical Engineering, Zhejiang University of Technology, Hangzhou 310014, P. R. China

Corresponding authors' E-mails: wangliang@zjut.edu.cn; hjw@zjut.edu.cn

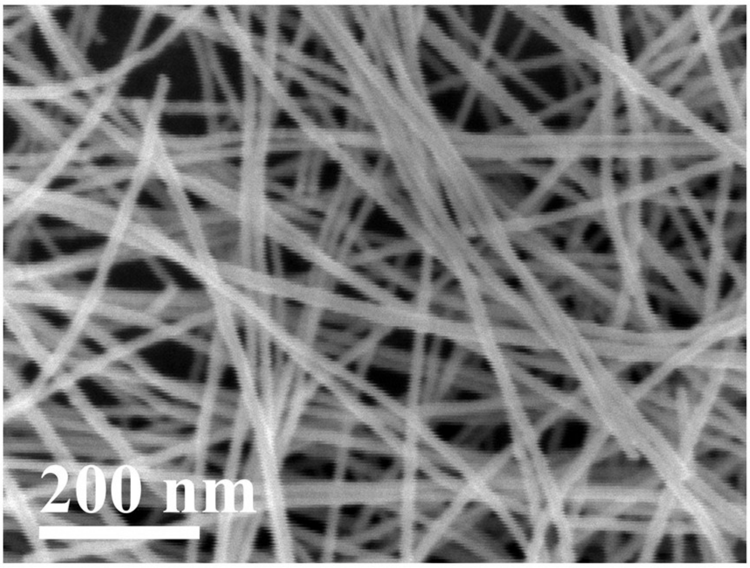

Fig. S1 SEM image of the Te NWs.

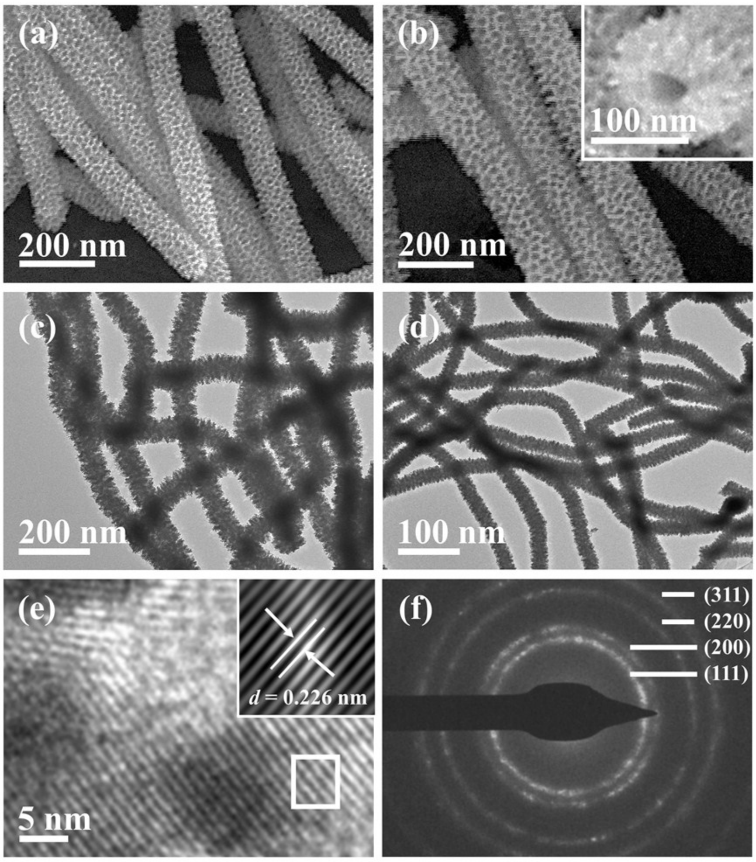

Fig. S2 (a, b) SEM, (c, d) TEM and (e) HRTEM images of the PtTe MNTs and (f) SAED pattern of the PtTe MNTs. The inset in (e) shows the Fourier filtered lattice image of the square area in (e).

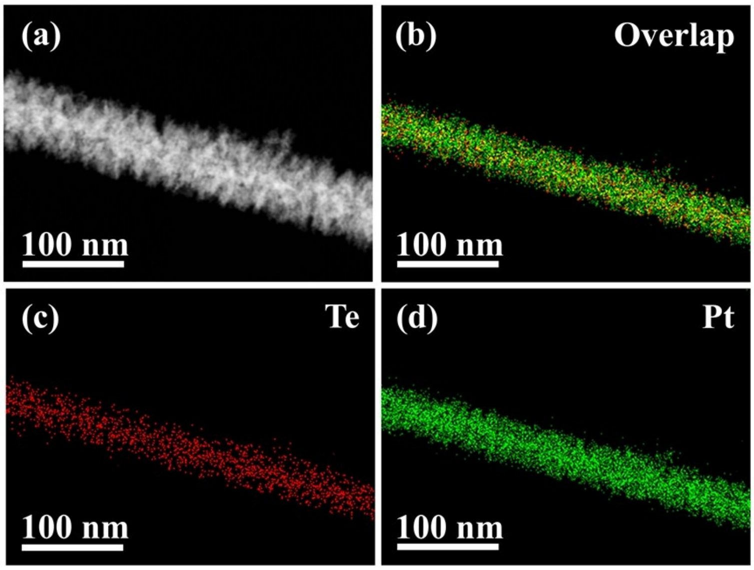

Fig. S3 (a) HAADF-STEM image and (b-d) elemental mapping images of the PtTe MNTs.

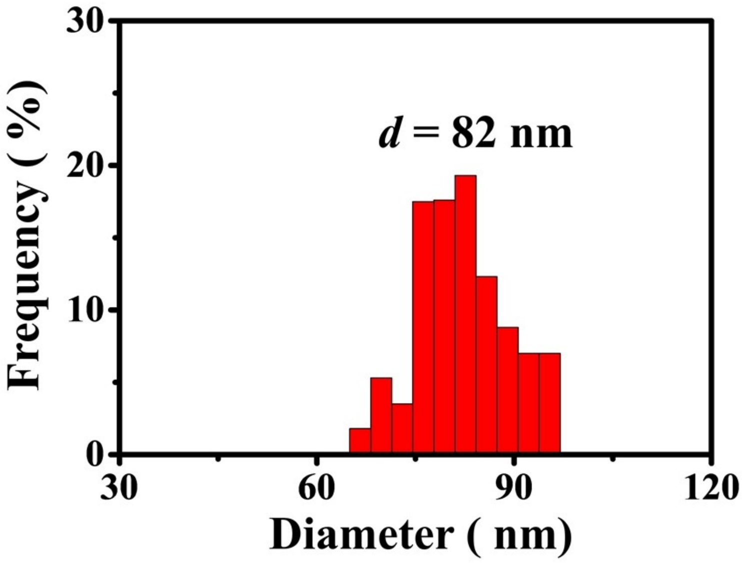

Fig. S4 Histogram of the diameter distribution for P-PtTe MNTs.

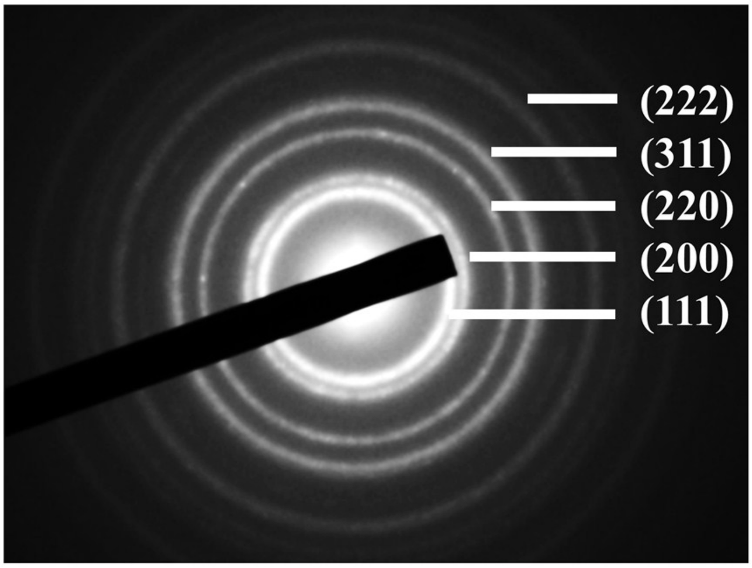

Fig. S5 The SAED pattern of the P-PtTe MNTs.

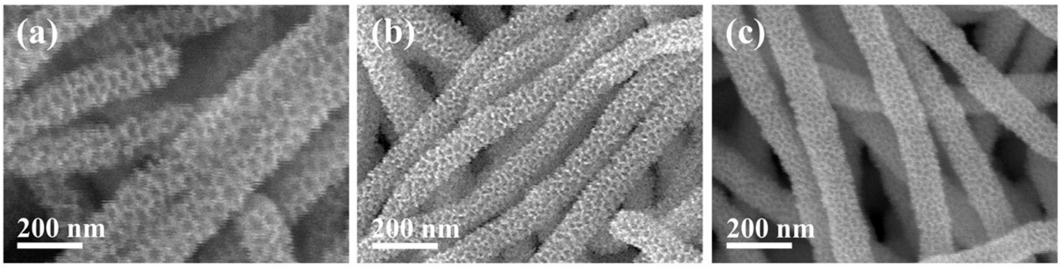

Fig. S6 SEM images of the samples prepared with different amounts of TOP under the typical synthesis: (a) 0.5 mL, (b) 1.0 mL and (c) 2.0 mL.

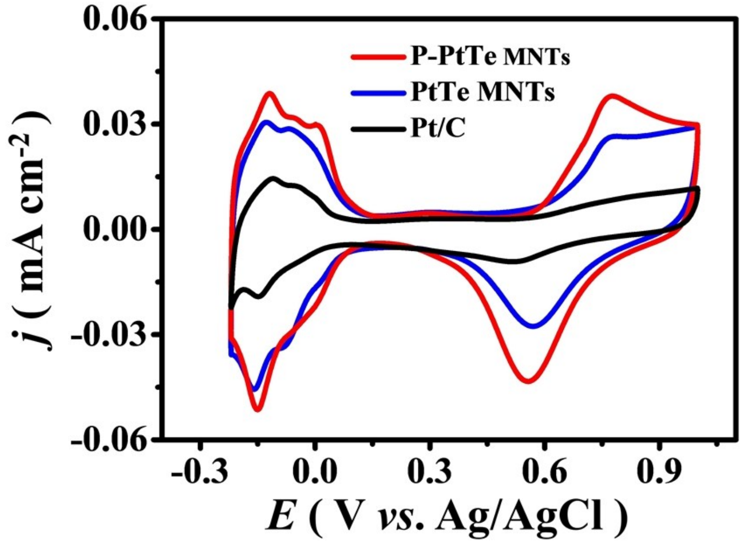

Fig. S7 CVs of the catalysts recorded in a N_2-saturated 0.5 M H_2SO_4 solution with a scan rate of 50 mV s^{-1}.

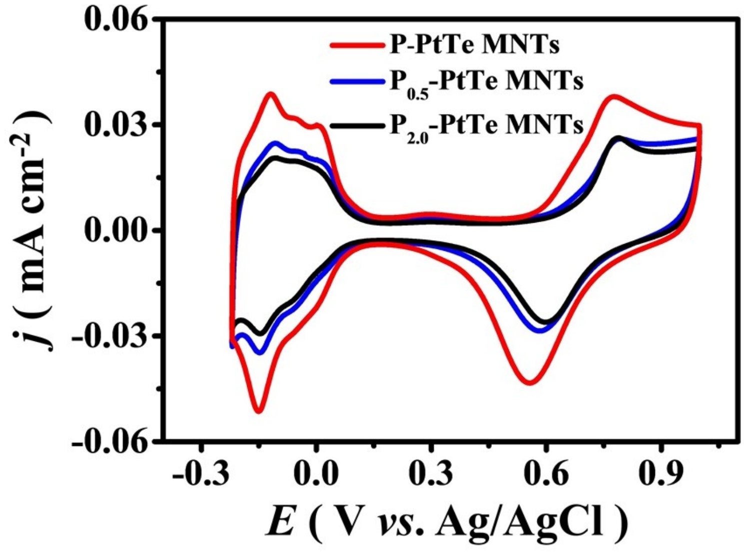

Fig. S8 CVs of the catalysts recorded in a N_2-saturated 0.5 M H_2SO_4 solution at a scan rate of 50 mV s^{-1}.

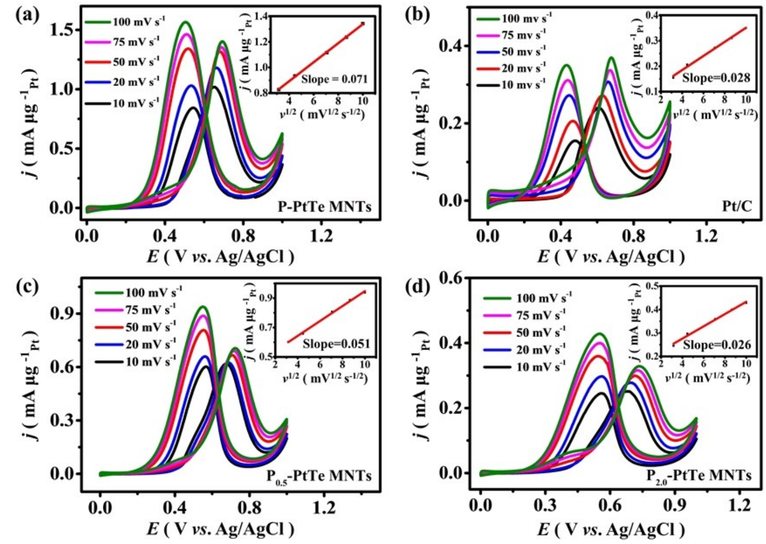

Fig. S9 (a) CVs of MOR for samples at different scan rates. (b) The corresponding plots of forward peak currents (j_m) versus the square root of the scan rates ($v^{1/2}$).

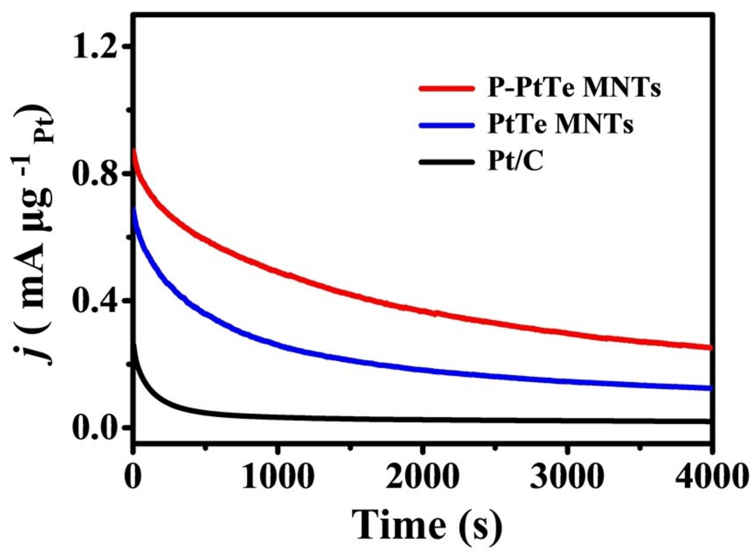

Fig. S10 Chronoamperometric curves of samples recorded at 0.6 V in a 0.5 M H_2SO_4 solution containing 1.0 M CH_3OH.

Table S1 The mass activity comparison of MOR on various Pt-based electrocatalysts.

Catalysts	Condition	Scan rate ($mV s^{-1}$)	Mass activity ($A mg^{-1}_{Pt}$)	Ref.
P-PtTe MNTS	**0.5 M H_2SO_4 containing 1.0 M CH_3OH**	**50**	**0.872**	**This work**
PtRh Nanosponges	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.4049	1
PtRu/rGO-2	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.739	2
PtPdTe Nanowire	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.595	3
Pt-CoO_x/MWCNTs	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.7797	4
TePbPt Alloy Nanotube	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.532	5
Hollow Pt-on-Pd Nanodendrites	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.58	6
Aligned Nanoporous $Pt_{60}Cu_{40}$	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	~0.75	7
Pt–WO_2/WO_3	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.694	8
PtCu/3D N-G	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.7412	9
Pt/e-RGO-SWCNT	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.1917	10
Platinum Nanosheets	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.2696	11
PtPdCu Nanodendrites	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.688	12
Atomic-Layer Pt/Pt_3Ga	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	1.094	13
Pt/CeO_2-P	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.714	14
Pt_3Sn–SnO_2/NG Catalyst	0.5 M H_2SO_4 containing 1.0 M CH_3OH	50	0.469	15

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