

Supporting information

For

A hydrogen evolution catalyst lowering energy consumption in aluminum anodization

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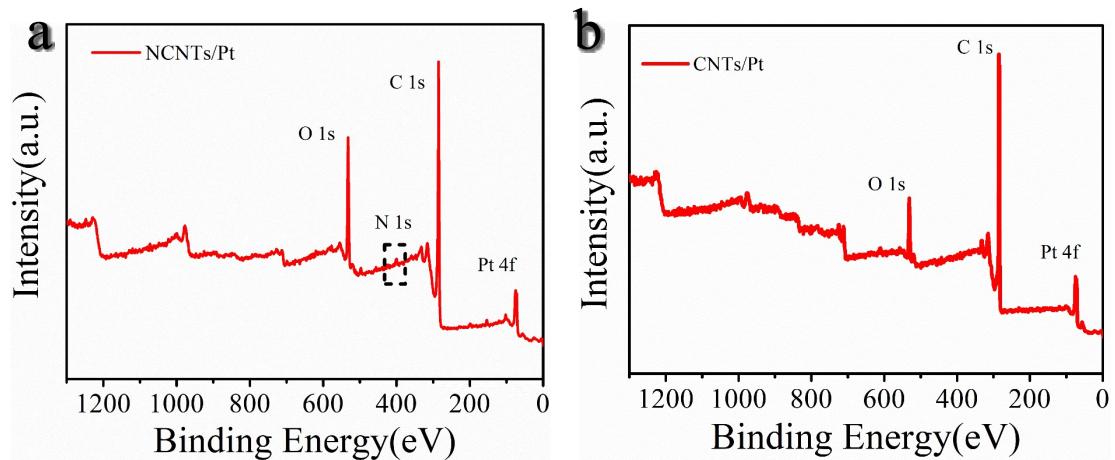


Fig.S1 XPS spectrum of a) NCNTs/Pt and b) CNTs/Pt

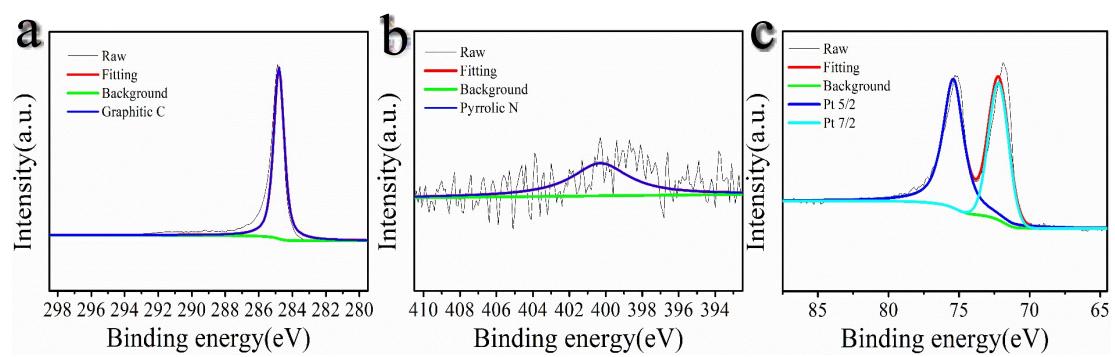


Fig.S2 XPS spectrum of a) C 1s, b) N 1s and c) Pt 4f of CNTs/Pt

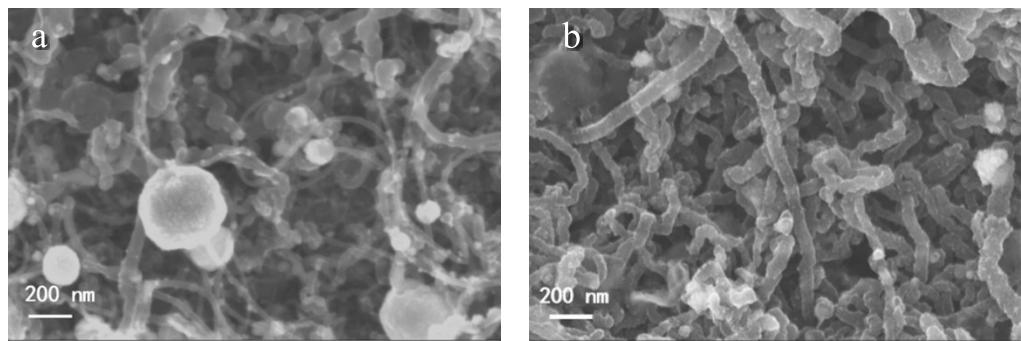


Fig.S3 SEM images of a) CNTs/Pt and b) NCNTs/Pt.

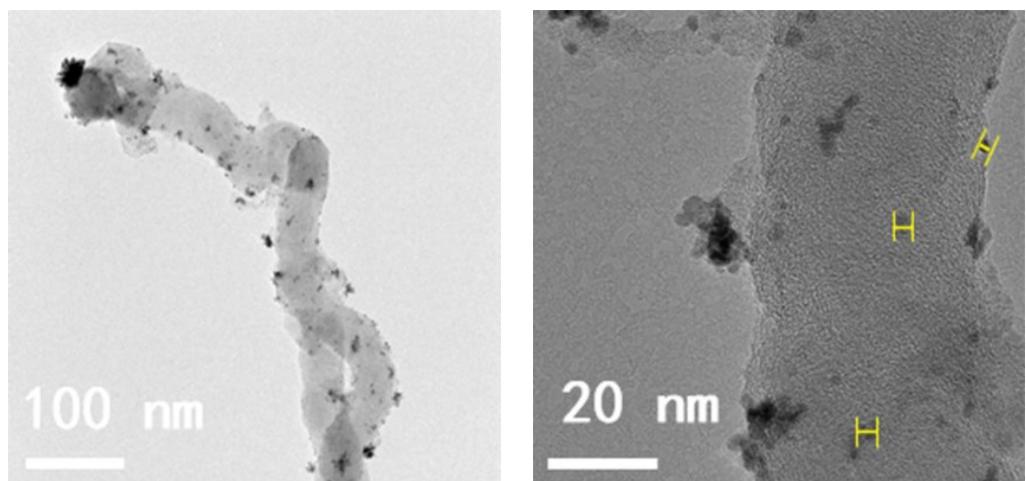


Fig.S4 TEM images of NCNTs/Pt.

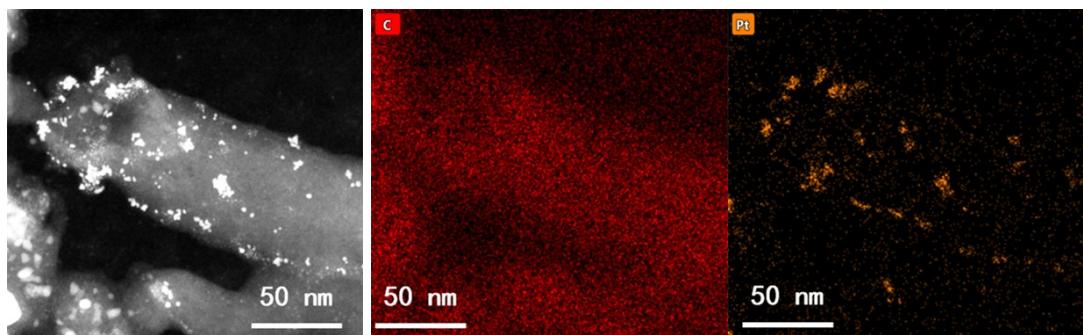


Fig.S5 TEM elements mapping of NCNTs/Pt

Table S1 Electrochemical performance of anode foils at different voltages corresponding to NCNTs/Pt and stainless steel

Cathodes	Formation voltage/V	Withstand voltage/V	Capacitance/ $\mu\text{F}\cdot\text{cm}^{-2}$	Energy consumption/ $\text{J}\cdot\text{cm}^{-2}$	Energy conservation/%
stainless steel	50	50.2	11.15	399	/
stainless steel	100	100.3	5.71	1327	/
stainless steel	150	150.5	3.80	2738	/
NCNTs/Pt	50	50.4	11.54	389	2.57
NCNTs/Pt	100	100.9	5.64	1249	6.24
NCNTs/Pt	150	150.5	3.91	2511	9.04