Supplementary data for

Anti-corrosion porous RuO_2/NbC anodes for the electrochemical oxidation of phenol

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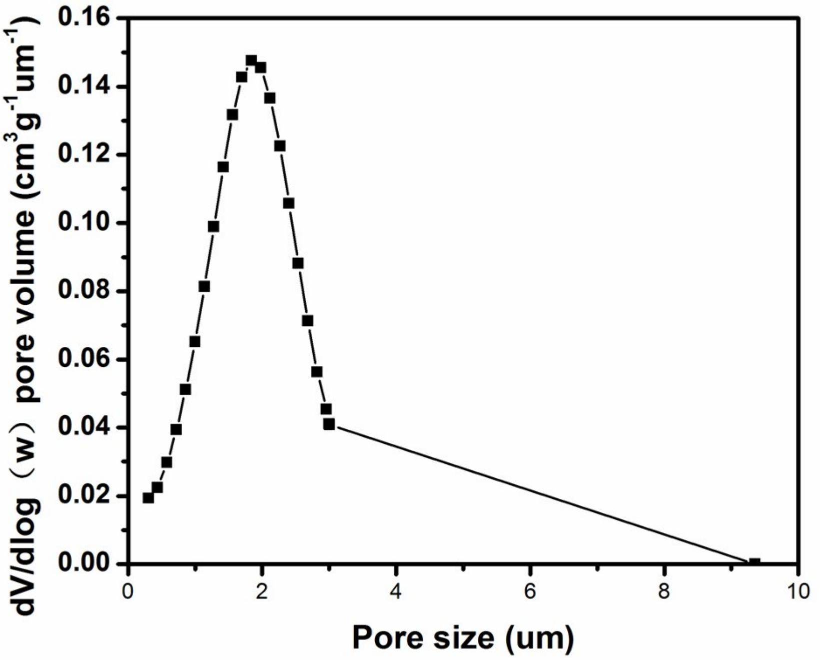

Fig. S1. Pore size distribution of NbC.

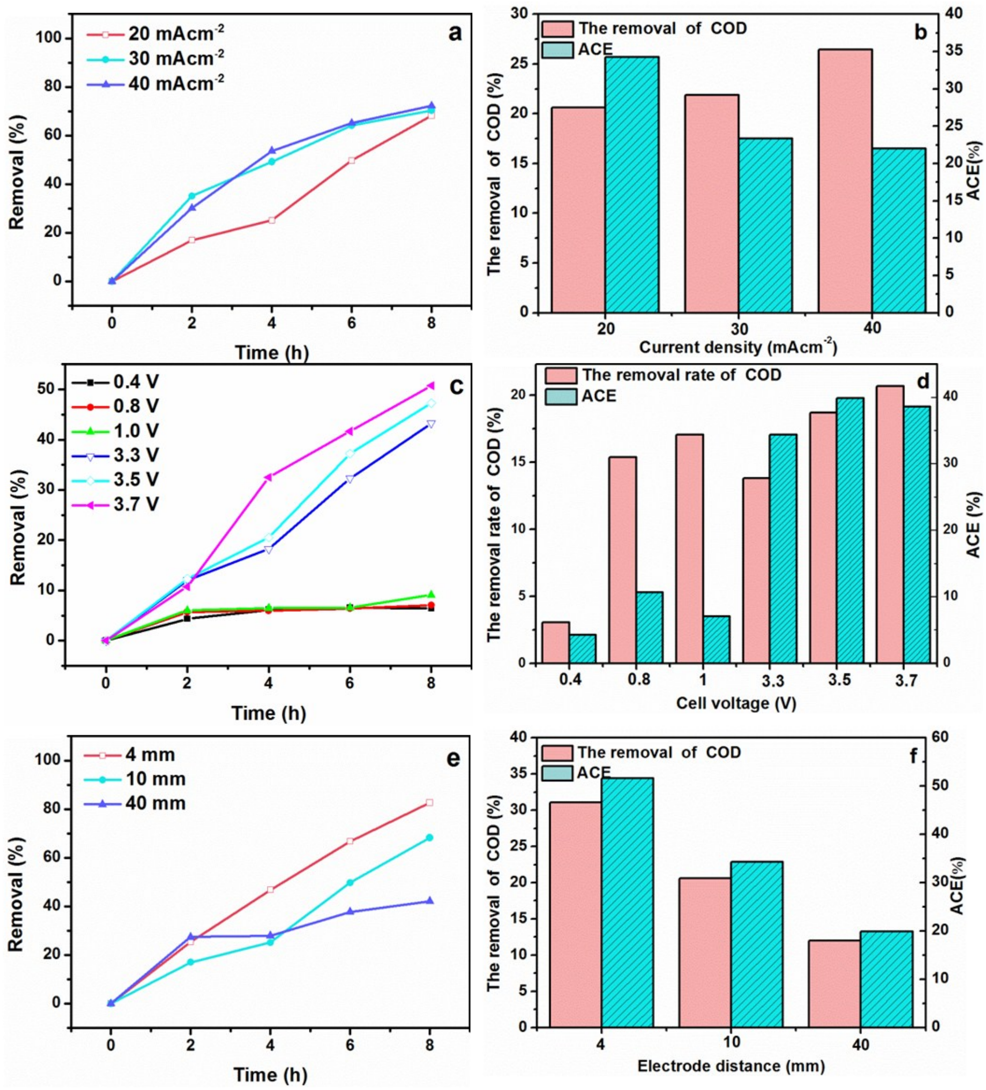

Fig. S2 The effects of current density on phenol removal (a), COD removal and ACE at 8 h (b) with an initial phenol concentration of 100 mg L^{-1}. The effect of cell voltage on phenol removal (c), COD removal and ACE at 8 h (d) with an initial phenol concentration of 100 mg L^{-1}. The effect of electrode distance on phenol removal (e), COD removal and ACE at 8 h (f) with a current density of 20 mA cm^{-2} and an initial phenol concentration of 100 mg L^{-1}.

Table S1 The atomic ratio of Ru with different coating times detected by EDS.

Samples	The atomic ratio of Ru(%)
One coating time	0.56
Two coating time	0.49
There coating time	1.20
Four coating time	2.13

Calculation equation

The mineralization current efficiency (MCE) was calculated using Eq. (S1)

$$\mathrm{MCE} = \frac{\mathrm{nFV}\left(\mathrm{TOC}_0 - \mathrm{TOC}_t\right)}{4.32\times10^{7}\,\mathrm{mIt}}\times100 \quad \text{(S1)}$$

$$\text{Compound removal rate} = \frac{\left(\mathrm{C}_0 - \mathrm{C}_t\right)\times \mathrm{V}}{\mathrm{S}\times \mathrm{t}} \quad \text{(S2)}$$

$$\text{COD removal rate} = \frac{\left(\mathrm{COD}_0 - \mathrm{COD}\right)_t\times \mathrm{V}}{\mathrm{S}\times \mathrm{t}} \quad \text{(S3)}$$

$$\text{TOC removal rate} = \frac{\left(\mathrm{TOC}_0 - \mathrm{TOC}_t\right)\times \mathrm{V}}{\mathrm{S}\times \mathrm{t}} \quad \text{(S4)}$$

where C_0 and C_t are the concentrations of pollutants (mg L^{-1}) in solution at the initial time and time t (h), respectively, COD_0/TOC_0 and COD_t/TOC_t are the chemical oxygen demand or the total organic carbon concentration (mg L^{-1}) at the initial time and time t (h), respectively, I is the current (A), F is the Faraday constant (96485 C mol^{-1}), V is the volume of electrolyte (L), S is the electrode area (cm^2), 8 is the equivalent mass of oxygen (geq^{-1}), 4.32×10^7 is a conversion factor to convert to the same units (3600 s $h^{-1}\times$12,000 mg of C mol^{-1}), m is the number of pollutant carbon atoms, and (n) is the number of electrons consumed per molecule of pollutant.