

Supporting Information

PtRu nanoparticles Supported on Ozone-treated Mesoporous Carbon thin film as highly active Anode Materials for Direct Methanol Fuel Cell

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Characterizations

We present here the original nitrogen adsorption isotherms and the corresponding pore-size distribution for the sample reported in Table 1.

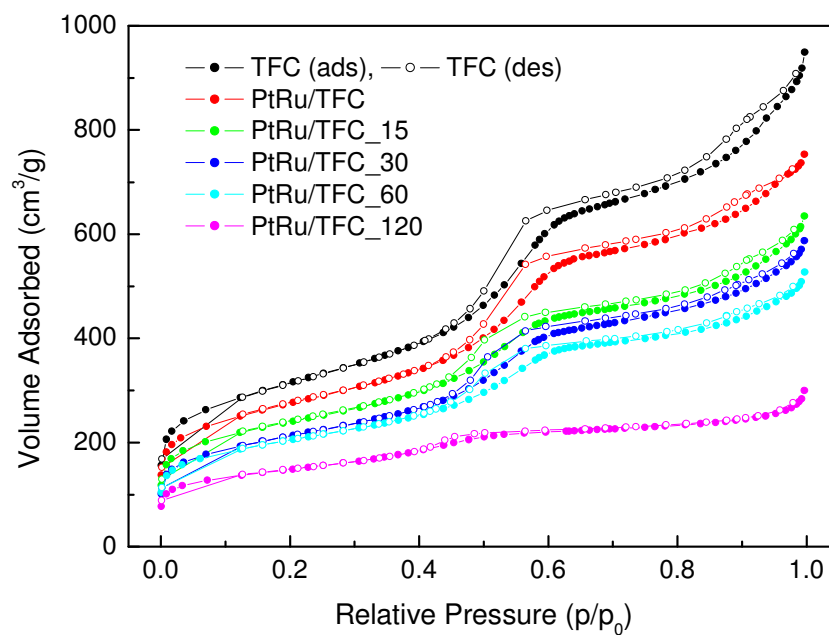


Figure S1. Nitrogen adsorption-desorption isotherms of selected samples.

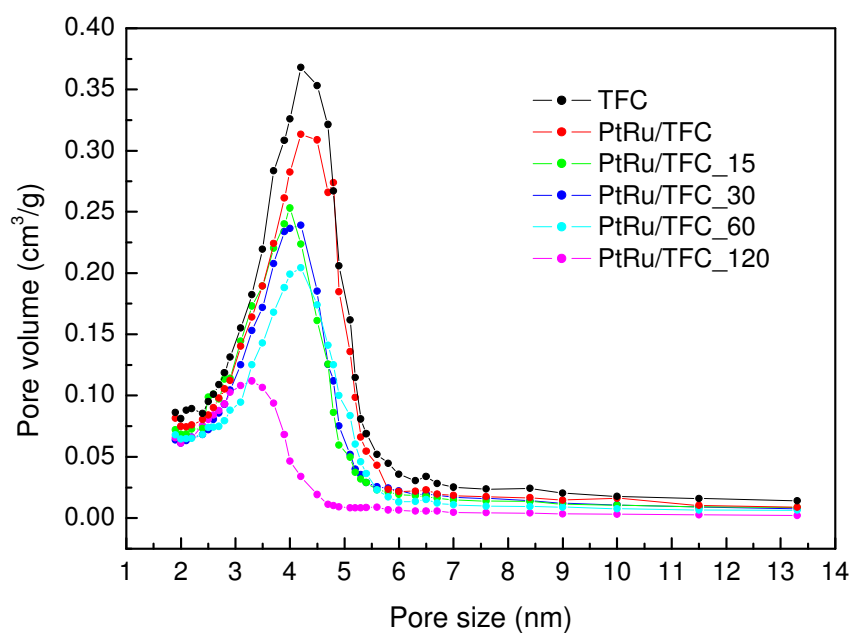


Figure S2. BJH_{ad} pore size distributions of selected samples.

From the adsorption of isotherm, the contribution of micropores to the surface area and pore volume are listed in Table S-1.

Table S-1. Effects of ozone treatment on the microporosity of the catalyst.

Sample	Micropore volume (cm ³ /g)	Micropore area (m ² /g)
TFC	0.1103	241.0
PtRu/TFC	0.1029	223.4
PtRu/TFC_15	0.0926	200.3
PtRu/TFC_30	0.0696	153.2
PtRu/TFC_60	0.0797	173.6
PtRu/TFC_120	0.0733	154.4

Thickness range: 0.3~0.5 nm.

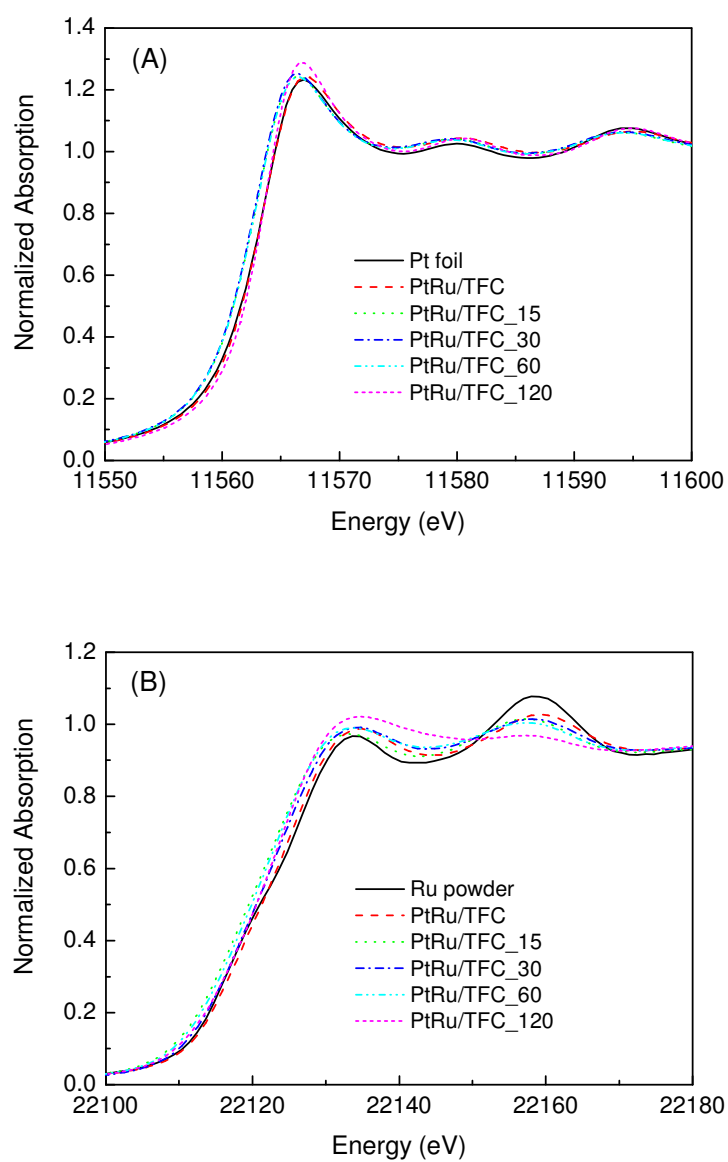


Figure S3. XANES spectra at (A) Pt L_{III} -edge and (B) Ru K-edge for selected samples.

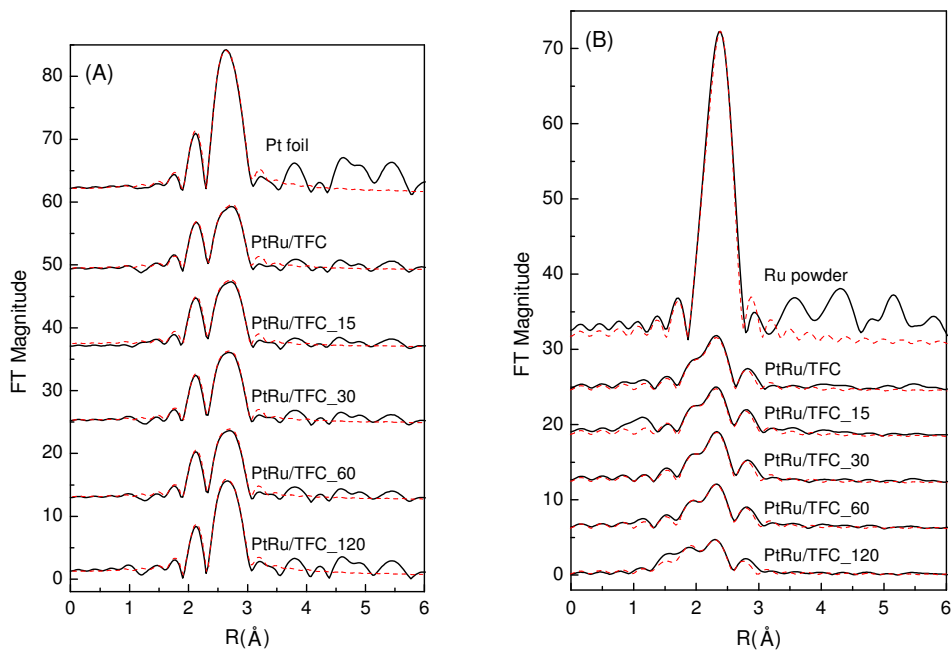


Figure S4. Fourier-transformed k^3 -weighted EXAFS data at (A) Pt L_{III}-edge and (B) Ru K-edge for selected samples. Solid lines denoted the experimental data and dashed lines showed the first shell fit to the metal contribution as r -range for (A) 1.6 ~ 3.1 Å and (B) 1.69 ~ 3.10 Å.