High-Performing PGM-Free AEMFC Cathodes from Carbon-Supported Cobalt Ferrite Nanoparticles

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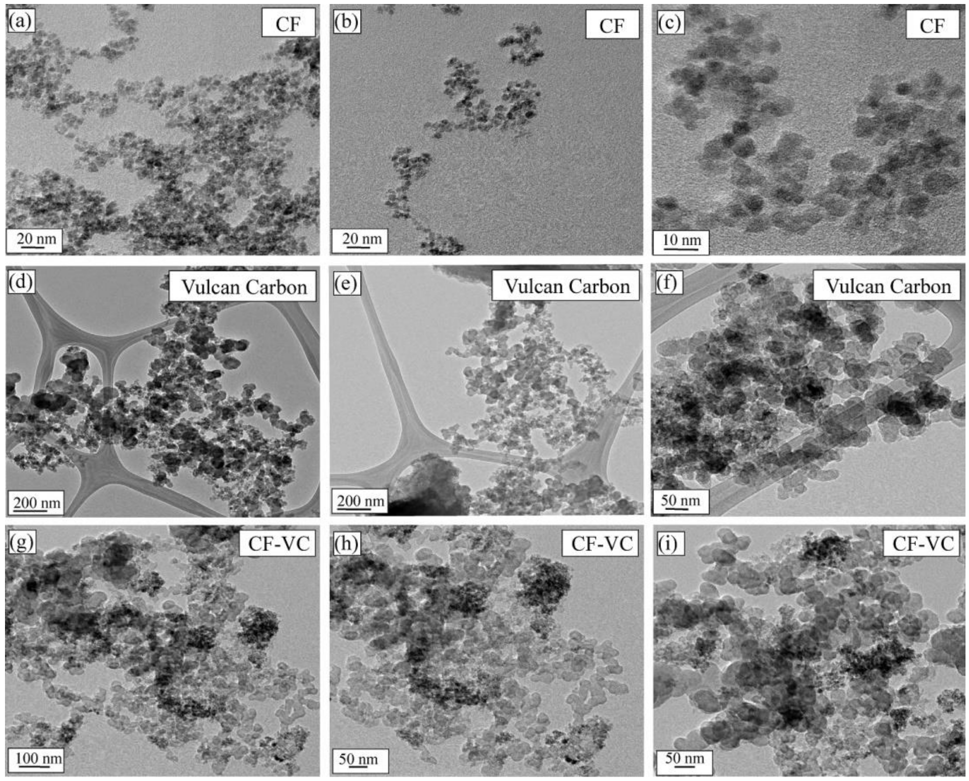

Figure S1. (a), (b) and (c) TEM image of the CF nanoparticles at higher magnification (20 and 10 nm scale bar). (d), (e) and (f) TEM image of the Vulcan carbon. (g), (h) and (i) TEM image of the CF-VC catalyst.

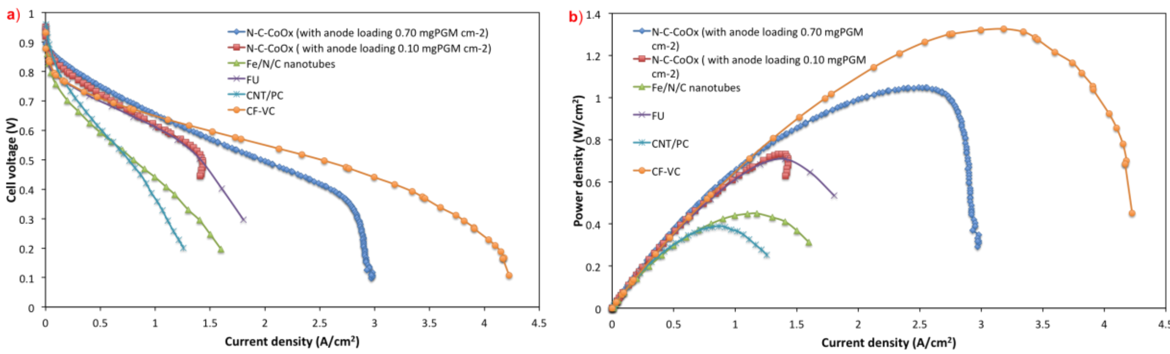

Figure S2. Comparison of single cell performance and kinetic region (inset) between this work and state of the art non-PGM cathode fuel cell work. a), b) i-V curves and i-power density curves between this work and non-PM cathode FU[1], Fe/N/C nanotubes[2], N-C-CoO_x[3] and CNT/PC[4] in AEMFC

Table S1. Binding energy of the cobalt and iron atoms in the XPS spectra of various catalysts.

S.N.	Catalyst	Co^{3+} Peak Position (eV)	Co^{2+} Peak Position(eV)	Fe^{2+} Peak Position (eV)	Fe^{3+} Peak Position (eV)	Reference
1	$BaFe_{11.4}Ti_{0.6}O_{19}$	-	-	709.3	711.0	[5]
2	$Ni_{1-X}Fe_XO$	-	-	710.0	711.8	[6]
3	aer-Co-SiO_2	-	781.5	-	-	[7]
4	Co_3O_4/TiO_2	780.2	781.8	-	-	[8]
5	CF	780.2 (peak area=43897.8; peak width 2.5 eV)	782.3 (peak area=52417.6; peak width 3.8 eV)	709.7 (peak area=33962.5; peak width 2.5 eV)	710.8 (peak area=66901.2; peak width 2.5 eV)	present work
6	CF-VC	780.2 (peak area=10039.7; peak width 2 eV)	781.8 (peak area=25775.2; peak width 3.5 eV)	709.8 (peak area=13627.7; peak width 2.5 eV)	711.2 (peak area=24411.2; peak width 2.9 eV)	present work

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