

Supporting Information

Figure S1: FESEM of membranes a) SPS-0, b) SPS-5, c) SPS-10, d) SPS-20 and e) SPS-30

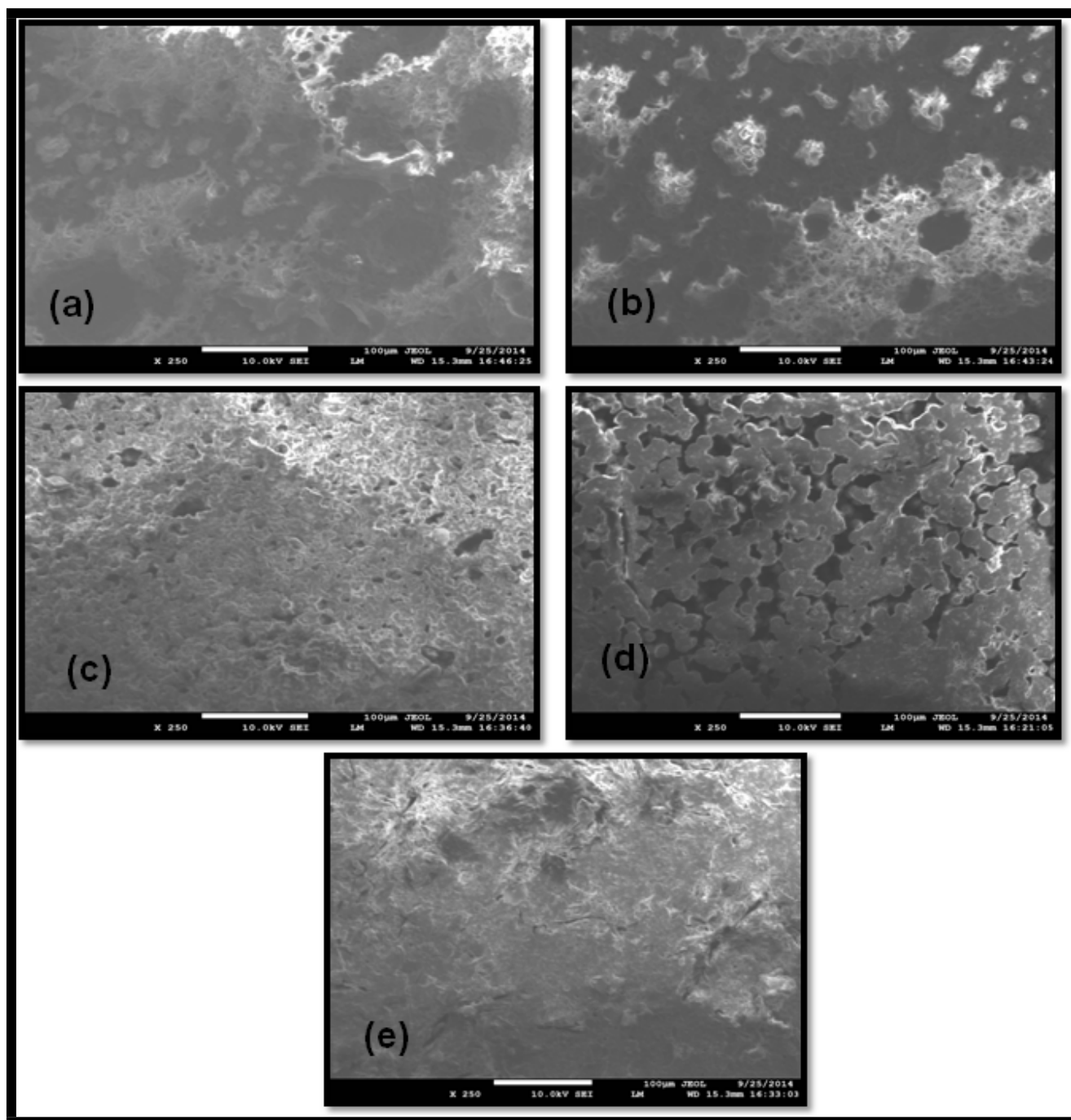


Figure S2: Electrochemical Impedance of MFCs and equivalent circuit representing ohmic resistance (R_m)

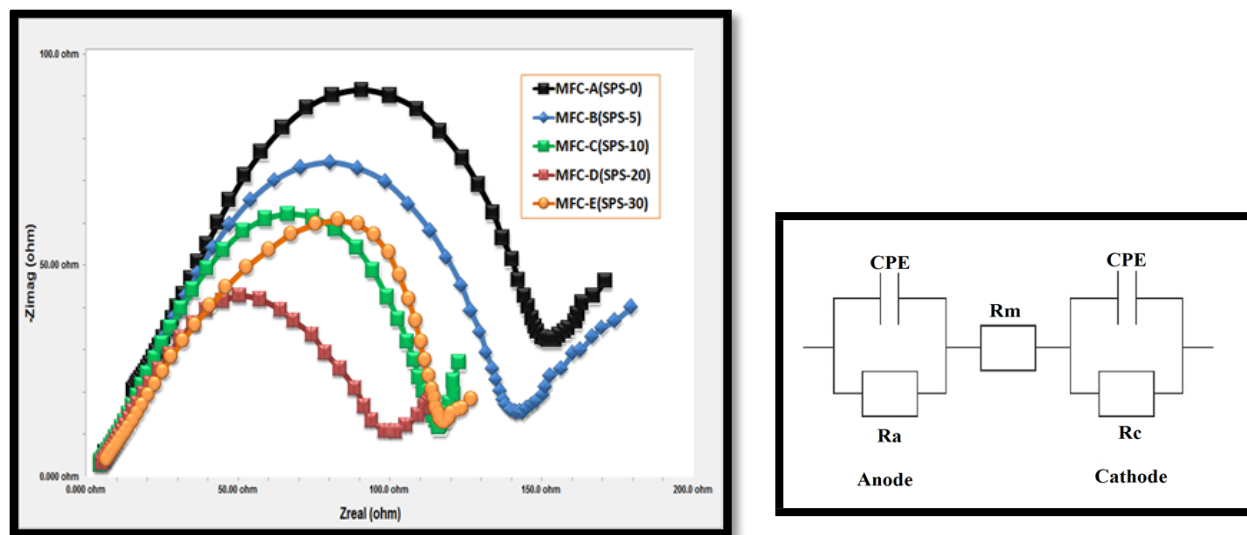


Table S1: Comparison of membranes in terms of costs

Membranes	Costs (USD)
Nafion	~1.8-2.3\$/cm ²
AEMs(e.g., AMI 7001)	~1.2-1.6\$/cm ²
CEMs(e.g., CMI 7000)	~0.6-1.2\$/cm ²
Semi-IPN SS and SPVdF-co-HFP membranes	~0.3-0.5\$/100cm ²

Table S2: A comparative study of MFCs in terms of power generation using different membranes

<u>MFC Type</u>	<u>Electrodes</u>	<u>Used Membranes</u>	<u>Maximum Power density</u>	<u>References</u>
Dual chamber with oxygen flow at cathode	Carbon papers	Nafion 117	600 mWm ⁻²	1
Air cathode MFC	Carbon Brush	Glass fibers	240±22 mWm ⁻²	2
	Carbon Mesh	Coated Glass fibers	230 ± 3.3 mWm ⁻²	
Air cathode MFC	Carbon papers	Nafion 117	239.4 mWm ⁻²	3
Air cathode MFC	Carbon papers	SPEEK/PES	170 mWm ⁻²	4
Dual chamber	Graphite Plates	Fe ₃ O ₄ /PES nanocomposite	20 mWm ⁻²	5
Single chamber (tubular) MFC	Carbon cloths	GO-PVA-STA composite	139 mWm ⁻²	6
Air cathode MFC	Carbon cloths	Sulfonated styrene(SS)/ sulfonated PVdF-co-HFP semi-IPN membranes	447.42 ± 22 mWm ⁻²	Present study

References:

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