PAN-based carbon nanofibers with controlled diameter by electrospinning for redox flow battery

In our study, carbon nanofibers have been prepared by electrospinning and diameter was controlled by applying voltage. In general electrocatalytic mechanism, electroactive species react with oxygen containing functional groups on the surface of electrode. However, few literature have shown on more effective factor between surface area and functional group for increasing efficiency of RFB. The experimental condition to synthesize carbon nanofibers for electrode was employed with various voltage (15kV, 18kV, 21kV), respectively, and acid treatment with sulfuric acid / nitric acid was performed.