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Supporting information for

A New Supramolecular Film Formed From a Silsesquioxane Derivative for Application in Proton Exchange Membranes

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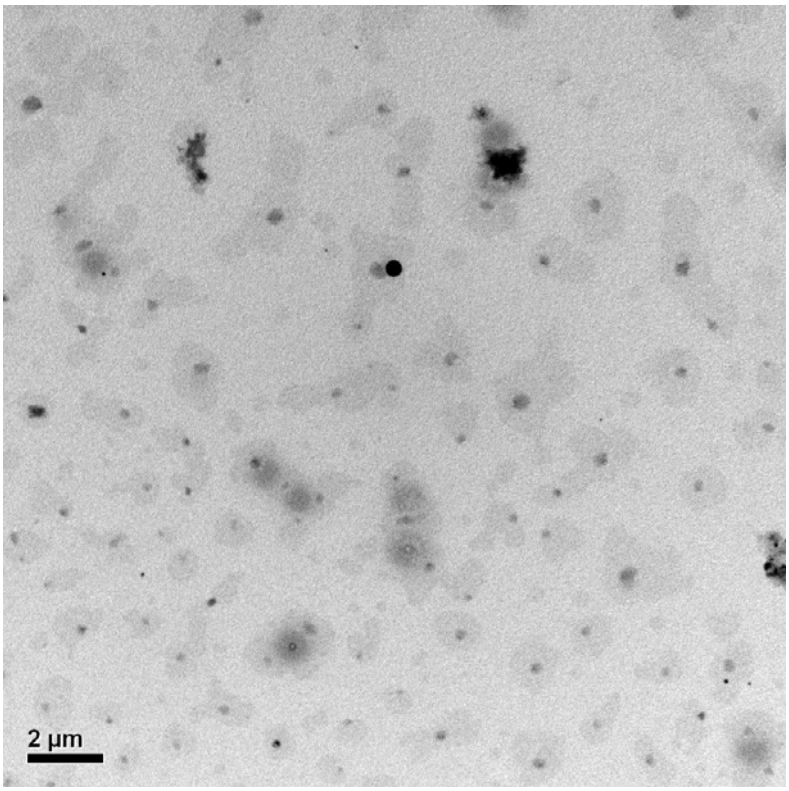

Figure S1. TEM micrograph of the HCl-doped POSS-C11-Py film, obtained after negative staining with $Pb(OAc)_2$

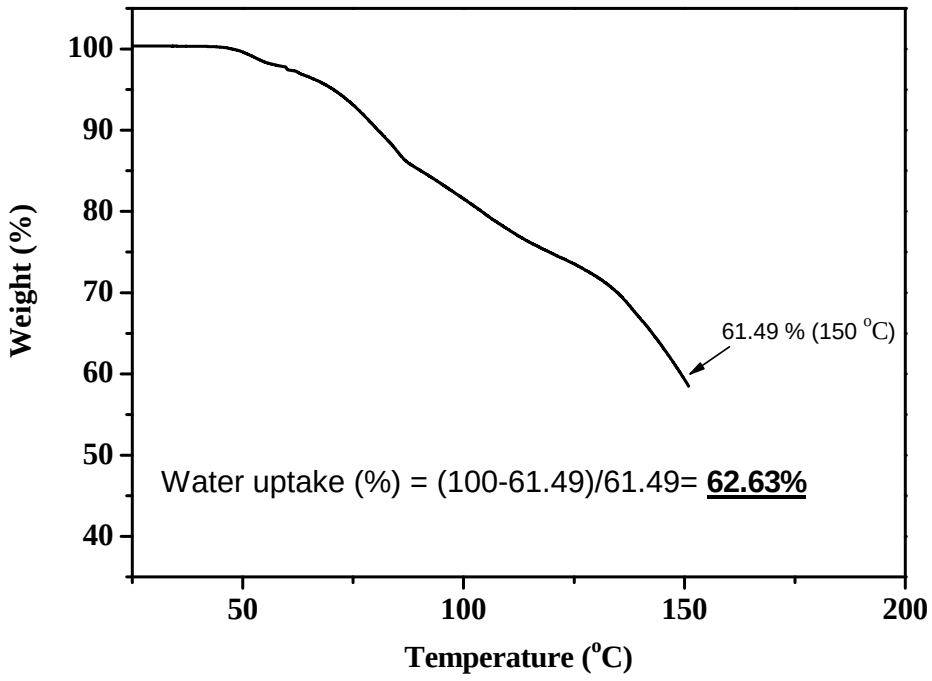

Figure S2. TGA curve of wet HCl-doped POSS-C11-Py membrane.

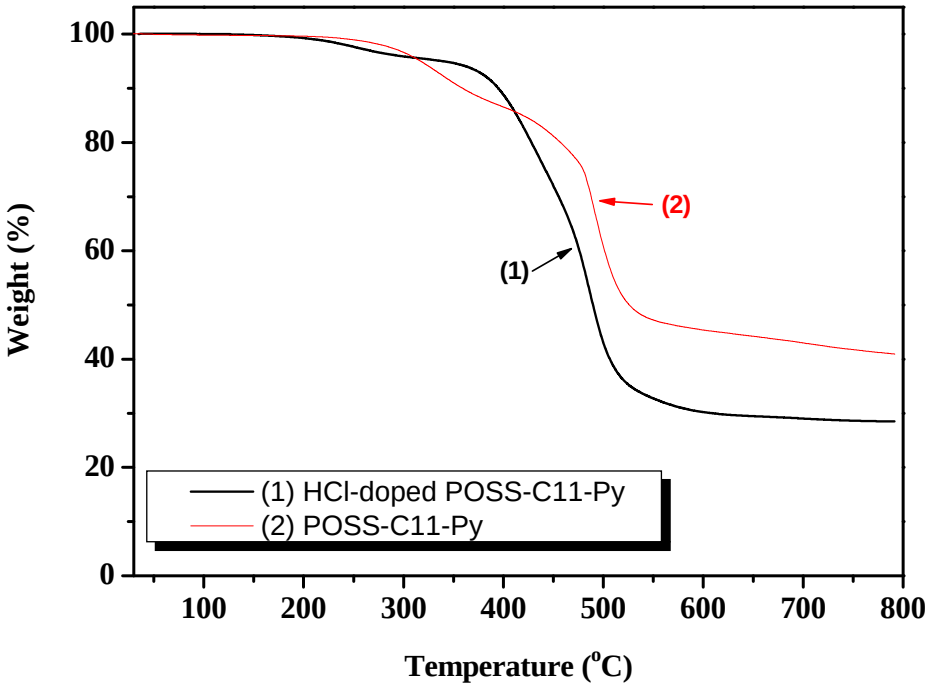

Figure S3. TGA curves of HCl-doped POSS-C11-Py and POSS-C11-Py membrane.

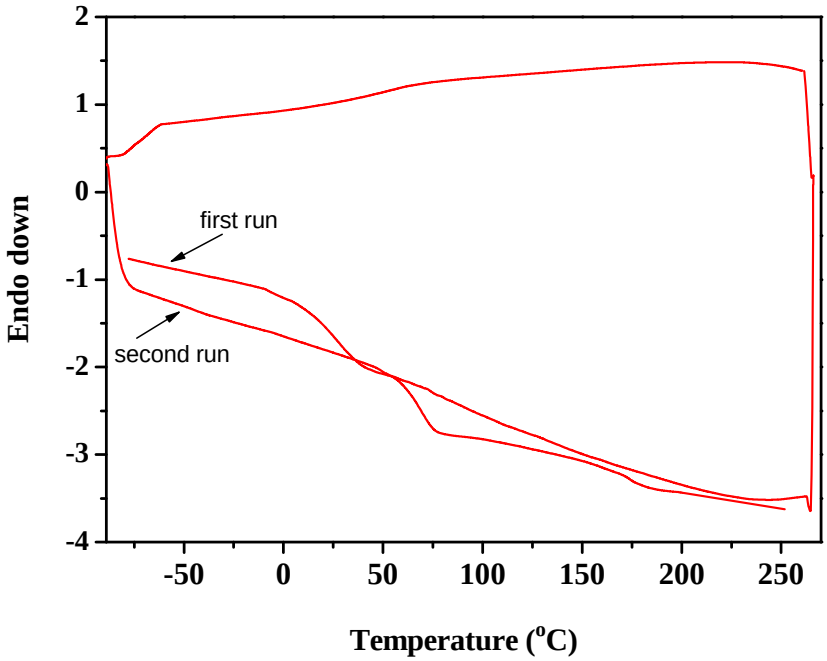

Figure S4. Cyclic DSC curve for the HCl-doped POSS-C11-Py membrane.

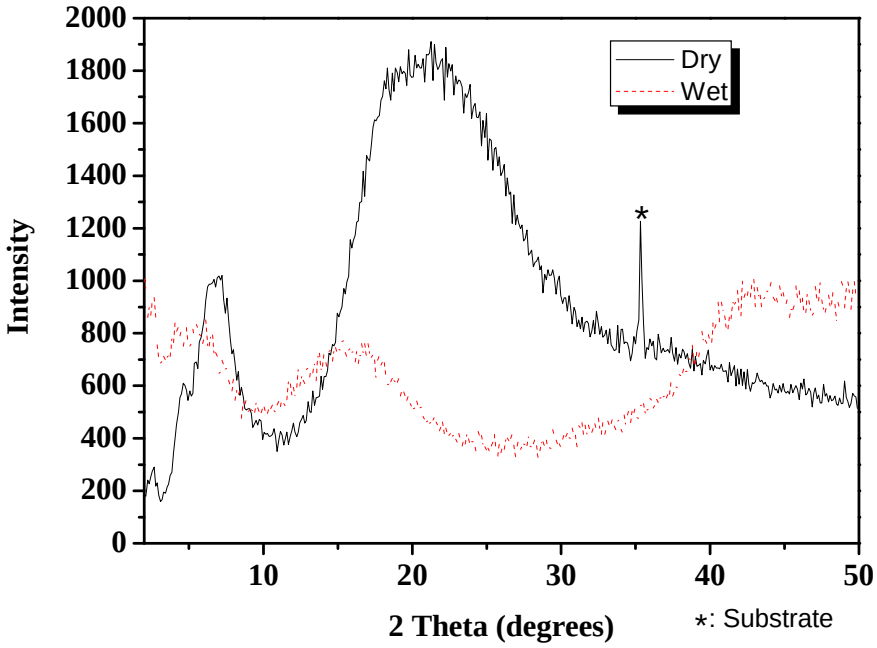

Figure S5. XRD data of the HCl-doped POSS-C11-Py membranes in dry and wet states.

Table S1. Properties of POSS-C11-Py membrane.

Sample	IEC (meq/g)	Water uptake (%)	Proton conductivity (mS cm^{-1})[b]
POSS-C11-Py	NA[a]	12.35	0.0035 (90 °C) 0.0007 (25 °C)

a. Nonionic films lack ionic groups and are less likely to react with NaOH.

b. The proton conductivity was measured at 90% RH.