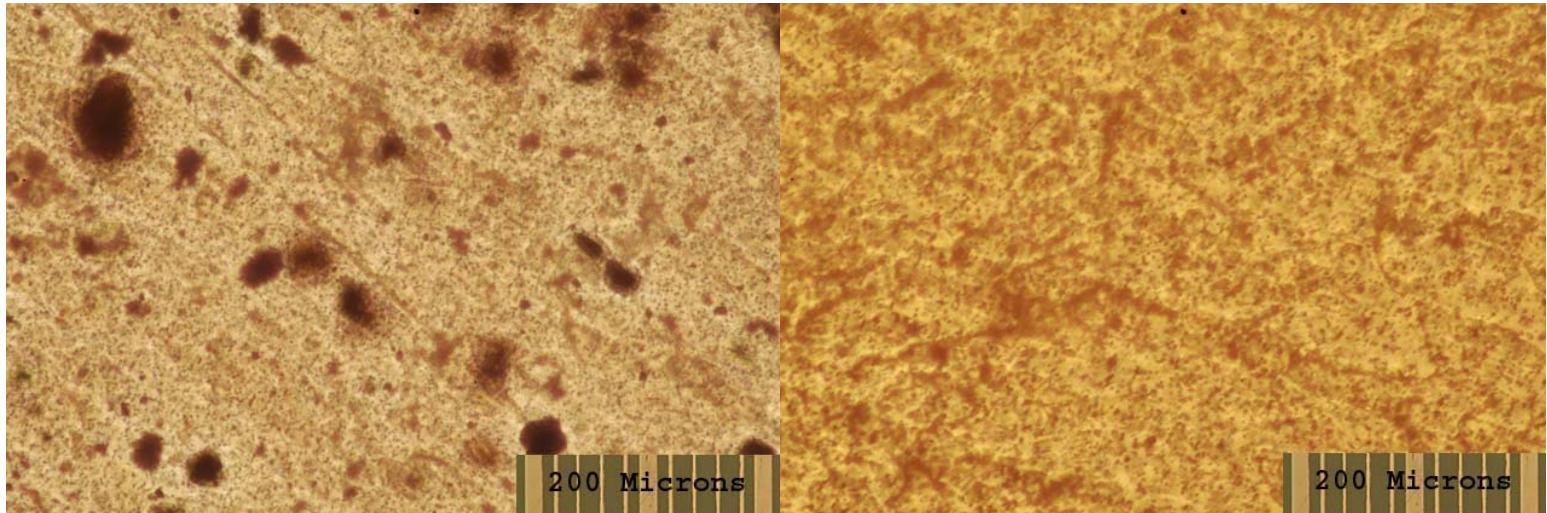


Morphology of Fullerene–Nafion Composite Recast Membranes



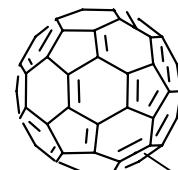
1 wt% C₆₀–Nafion Composite



+ Nafion

C₆₀

1 wt% C₆₀(OH)_n–Nafion Composite

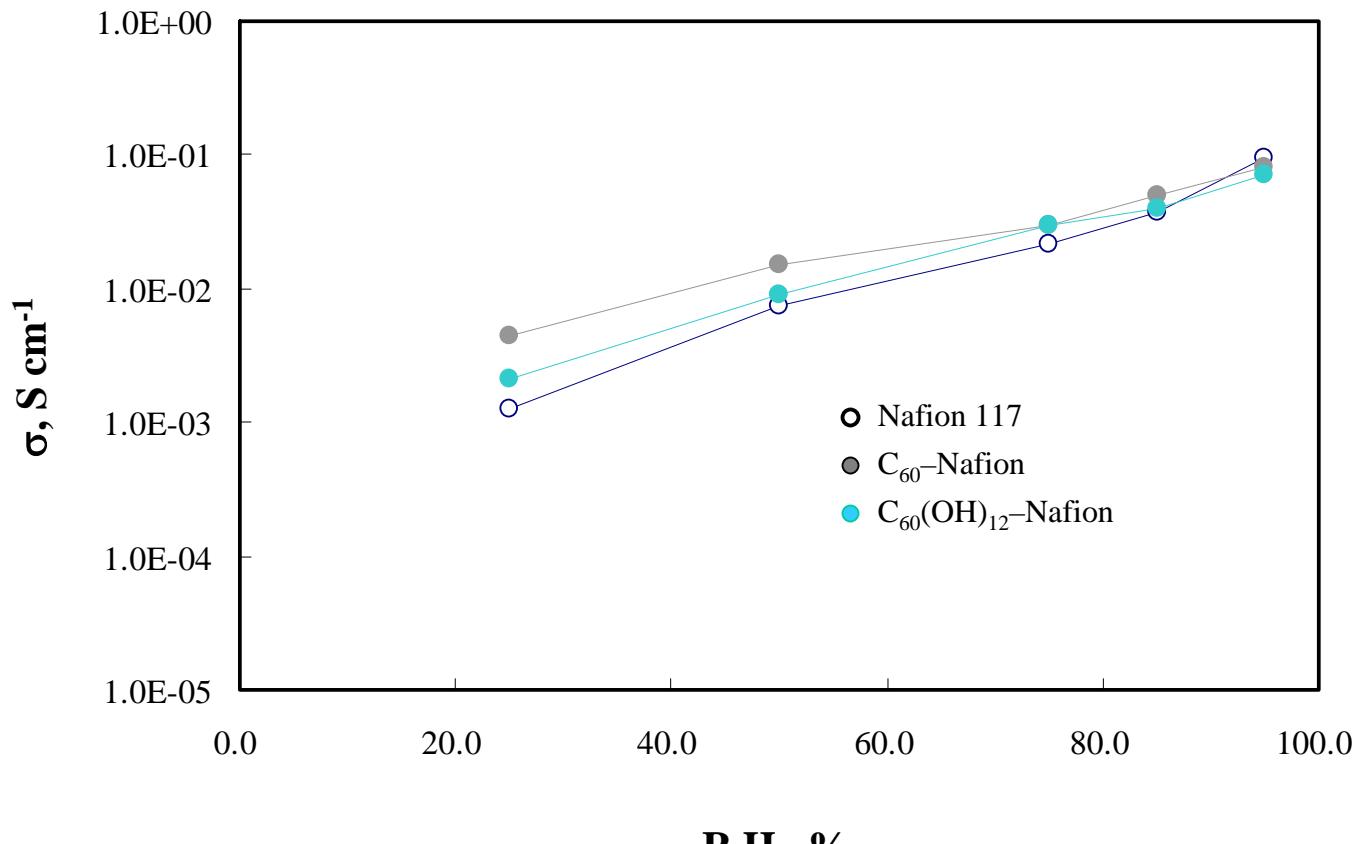


+ Nafion

(OH)_n

polyhydroxy fullerene

Fullerene-Nafion Composite Recast Membranes

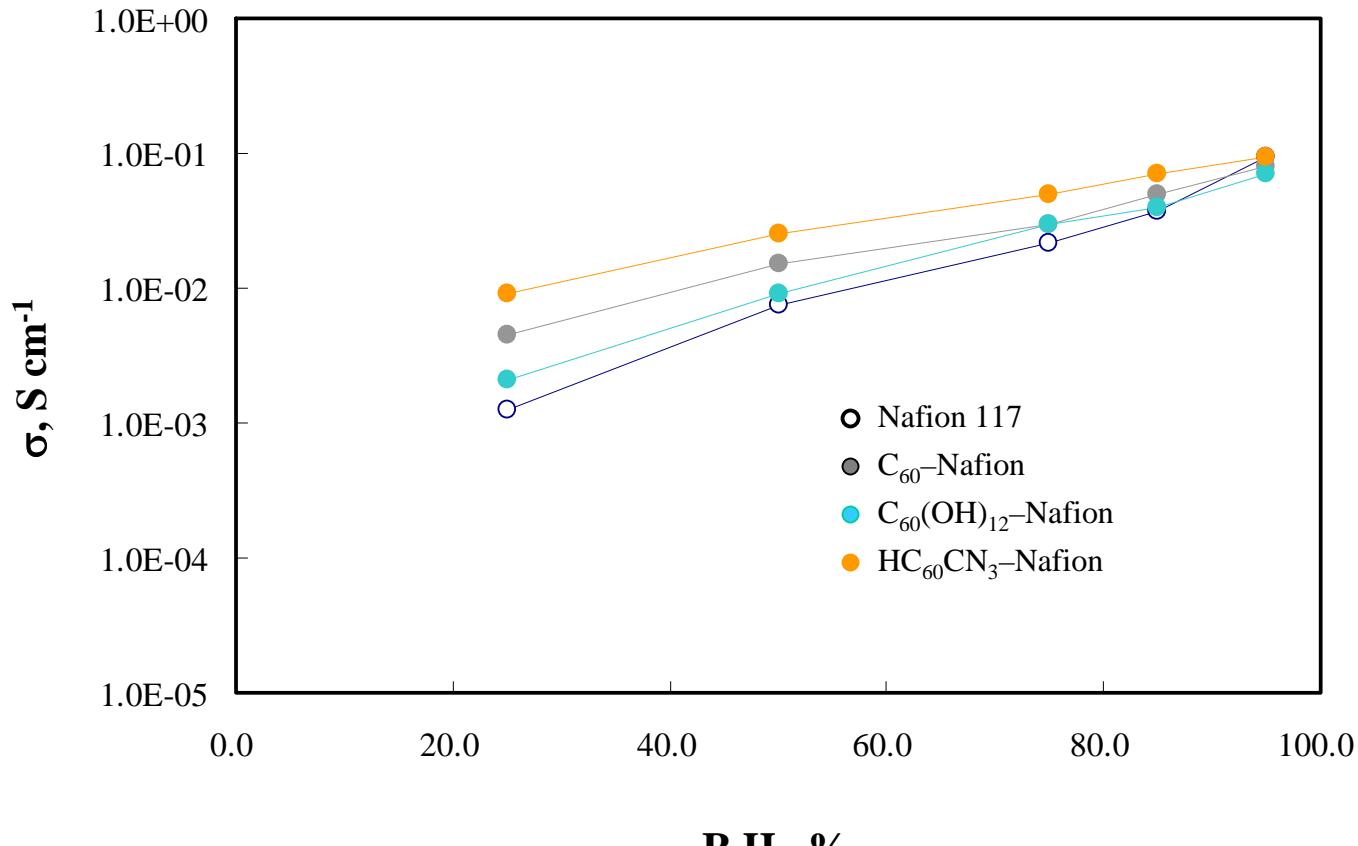


under N₂ gas flow

T = 30 °C

Proton Conductivity

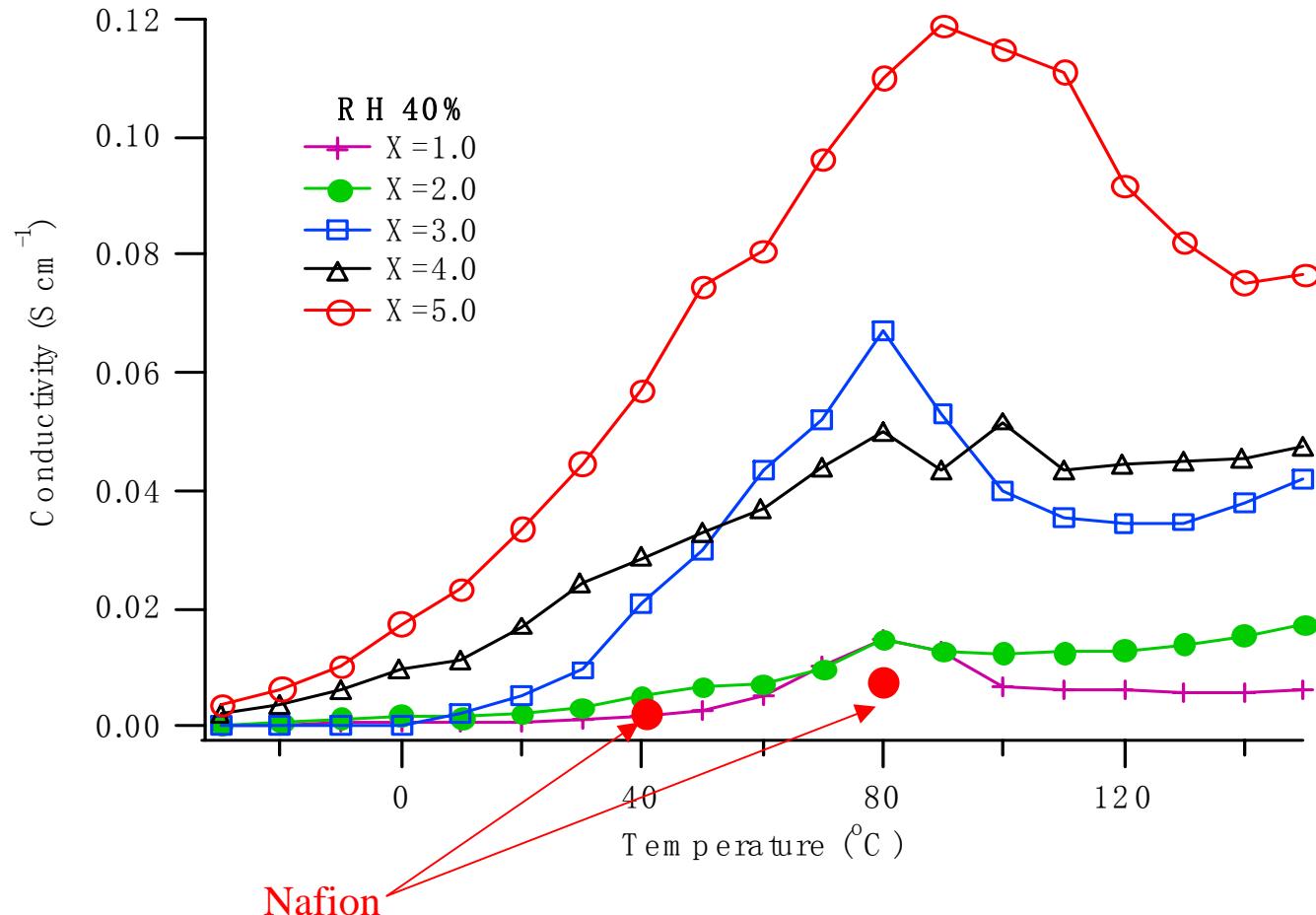
Fullerene-Nafion Recast Composites



Under N_2 gas flow

$T = 30^\circ\text{C}$

Performance of New Organic-Inorganic Hybrid Membrane



Take Home Lessons

- The factors determining the performance of fullerene composite membranes:
 - the fullerene functionality
 - the host polymer
 - the dispersion of the fullerene
 - the location of the fullerene in the polymer
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