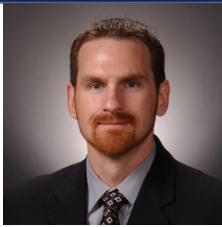


# Polymer Membranes and Transport Media



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## Need

- Polymer membranes and transport media are a critical component in our nation's energy and water security
- The membranes require selective transport of molecules (ions, solutes, water) through dense, but often nanostructured, polymer membranes

## Objectives

- Develop the measurement tools necessary to quantify the structure and dynamics of polymer membranes and transport media
- Correlate the measured structure and dynamics to key performance properties (transport, rejection)

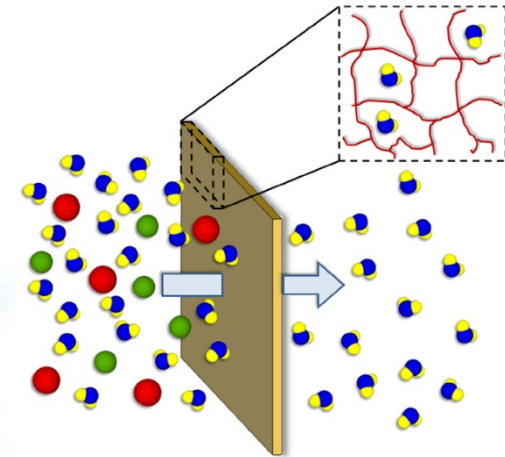
## Customers and Partners



MURI



Dow Water Solutions  
FilmTec Corporation



Selective transport  
(ions, solutes, water)

Small-angle Neutron  
Scattering (SANS)

Stress Measurement:  
Cantilever Bending

Quasi-elastic Neutron  
Scattering (QENS)

Poromechanics

Reflectivity  
Ellipsometry

Electrochemical  
Impedance Spectroscopy