

Modeling of Electrochemical Cells:  
Proton Exchange Membrane Fuel Cells  
HYD7007 – 01  
Yonsei University

Homework Assignment 01  
Spring, 2011

1. What are the components of a “Membrane Electrode Assembly”?  
What is the Gaseous Diffusion Layer composed of?  
What is the catalyst layer composed of?  
What is the proton exchange membrane composed of?
2. Describe in your own words the morphology of a Nafion PEM. What changes in this morphology occur as a function of degree of hydration?
3. What are the three transport processes involving the catalyst nanoparticle? What pathway is required for each of these processes?