

2.996 Fundamentals of Advanced Energy Conversion Lecture Memo

Lecture number: 24

Date: May 5th, 2004

- Proton Exchange Membrane Fuel Cells (PEMFC)
 - Membrane Electrode Assembly (MEA) and components
 - Catalyst layer structure
 - MEA preparation method and structure
 - Nafion membrane failure mechanism
 - Coarsening of Pt particles
 - PEMFC construction
 - State of the art MEA performance

- Solid Oxide Fuel Cells (SOFC)
 - Electrochemical reactions
 - SOFC materials
 - SOFC planar design
 - Siemens SOFC technology
 - Technical challenges
 - SOFC electrode performance
 - Oxygen reduction process