

Advanced Cathode Catalysts (Topic 3)

Los Alamos National Laboratory

- Funding

DOE Cost Share	Recipient Cost Share	TOTAL
\$6,800,000	\$300,000	\$7,100,000
96%	4%	100%

- **Project Description:** This collaborative effort will comprehensively address the major aspects of cathode electrocatalysis, including cost, activity and durability, for polymer electrolyte membrane fuel cells (PEMFC). The effort will center on three distinctively different classes of cathode catalysts: nanoparticle catalysts with ultra-low precious metal content; new-generation chalcogenides representing a transition from precious to non-precious catalysts; and non-precious metal/heteroatomic polymer nanocomposites. In addition to developing new catalysts, this research program will also target other issues crucial to PEMFC cathode electrocatalysis: novel electrode structures; catalyst durability meeting the lifetime requirements of 5000 hours; and fabrication and scale-up of the most practically viable materials. Several components of this effort will be tied to molecular-level modeling, which will help establish the fundamental understanding of the basic catalytic functions of metals and their alloys as well as the key factors for maintaining catalyst activity.
- **Timeframe:** 4 years, starting in FY07

Sub-Contractors

Institutions
Brookhaven National Laboratory
Argonne National Laboratory
Oak Ridge National Laboratory
University of Illinois at Urbana
University of New Mexico
University of California Riverside
Cabot Corporation