

Novel PEMFC Stack Using Patterned Aligned Carbon Nanotubes as Electrodes in MEA (Topic 5)

Argonne National Laboratory

- Funding

DOE Cost Share	Recipient Cost Share	TOTAL
\$1,000,000	\$0	\$1,000,000
100%	0%	100%

- Project Description: The objective of the proposal is to develop a novel aligned carbon nanotube (ACNT) based membrane electrode assembly (MEA) and proton exchange membrane fuel cell (PEMFC) with improved efficiency, lower or no platinum usage, and simplified stack design. This new MEA architecture can significantly simplify PEMFC stack design and enhance power density. A three-dimensional patterned aligned carbon nanotube electrode catalyst layer can be fabricated with a pre-designed reaction gas channel, and thus can potentially eliminate the flow field over the bipolar plate. The research activities include constructing a ACNT based MEA, packaging it into a prototype PEM fuel cell, and evaluating the performance against state-of-the-art PEM fuel cells.
- Timeframe: 2 years, starting in FY07

Sub-Contractors

Institutions
N/A