

Next Generation Bipolar Plates for Automotive PEM Fuel Cells (Topic 4)

GrafTech International, Ltd.

- Funding

DOE Cost Share	Recipient Cost Share	TOTAL
\$2,325,943	\$581,486	\$2,907,429
80%	20%	100%

- Project Description: In this project, a continuous expanded natural graphite structure will incorporate new thermoset resin systems that can improve the state of the art performance and properties of polymer electrolyte (PEM) fuel cells. The chemistry of the resin system and graphite raw material will be chosen in order to improve the interaction between the resin and graphite. Physical properties of resin/graphite composite materials will be measured, and flow field plates of the composites will be evaluated in single cell testing at up to 120°C. Full-size automotive plates of the preferred composite will be molded and tested in a 10-cell stack under automotive conditions. A materials and manufacturing cost estimate will be completed to show how the new bipolar plate composite can meet the DOE 2010 target for bipolar plates of \$6 per kilowatt, thereby contributing to the goal of \$45/kW system cost.
- Timeframe: 2 year project, starting in FY07

Sub-Contractors

Institutions
Ballard Power Systems
Case Western Reserve University
Huntsman Advanced Materials