XII.0 Small Business Innovation Research (SBIR) Fuel Cell Technologies Office New Projects Awarded in FY 2013

The Small Business Innovation Research (SBIR) program provides small businesses with opportunities to participate in DOE research activities by exploring new and innovative approaches to achieve research and development (R&D) objectives. The funds set aside for SBIR projects are used to support an annual competition for Phase I awards of up to $225,000 each for about nine months to explore the feasibility of innovative concepts. Phase II R&D efforts further demonstrate the technologies to move them into the marketplace, and these awards are up to $1,500,000 over a two-year period. Small Business Technology Transfer (STTR) projects include substantial (at least 30%) cooperative research collaboration between the small business and a non-profit research institution.

Table 1 lists the SBIR Phase I and Table 2 lists the STTR Phase II projects awarded in FY 2013 related to the Fuel Cell Technologies Office. Brief descriptions of each project follow.

TABLE1. FY 2013 SBIR Phase I Projects Related to the Hydrogen and Fuel Cells Program

Title	Company	City, State
XII.1 Cryogenically Flexible, Low Permeability Thoraeus Rubber H2 Dispenser Hose	Nanosonic, Inc.	Pembroke, VA
XII.2 Hydrogen Leak Detector for Hydrogen Dispenser	Applied Nanotech, Inc.	Austin, TX
XII.3 Nanostructured Catalysts for Alkaline PEM Fuel Cells	Giner, Inc.	Newton, MA

TABLE 2. FY 2013 STTR Phase II Projects Related to the Hydrogen and Fuel Cells Program

Title	Company	City, State
XII.4 Low-Noble-Metal-Content Catalysts/Electrodes for Hydrogen Production by Water Electrolysis	Proton Energy Systems	Wallingford, CT

PHASE I PROJECTS

XII.1 Cryogenically Flexible, Low Permeability Thoraeus Rubber H2 Dispenser Hose

Nanosonic, Inc.
158 Wheatland Drive
Pembroke, VA 24136-3645

This project will offer Thoraeus Rubber™ as a flexible, tough, low-permeability H2 dispenser hose. Thoraeus Rubber™ has been demonstrated to maintain low air permeability (<1.58 cc/100 in^2/day/atm) upon the triple-fold cold flex test conducted at -50ºC. Herein, an innovative reinforced version would be developed to optimize ultra-low hydrogen permeability and embrittlement.

XII.2 Hydrogen Leak Detector for Hydrogen Dispenser

Applied Nanotech, Inc.
3006 Longhorn Blvd, Ste 107
Austin, TX 78758-7631

There is a need for hydrogen leak detection on hydrogen fuel stations. Hydrogen detectors can be integrated in hydrogen dispensers for reliability and safety during operation. In this project, we will develop a low-cost, long-lifetime, miniature hydrogen detector capable of detecting hydrogen in low concentrations.

XII.3 Nanostructured Catalysts for Alkaline PEM Fuel Cells

Giner, Inc.
89 Rumford Avenue
Newton, MA 02466-1311

The objective is to develop a high-porosity, fibrous composite air cathode with a low-cost catalyst and a designed mechanism to manage electrolyte flooding.

PHASE II PROJECTS

XII.4 Low-Noble-Metal-Content Catalysts/Electrodes for Hydrogen Production by Water Electrolysis

Proton Energy Systems
10 Technology Drive
Wallingford, CT 06492-1955

Proton OnSite manufactures hydrogen generation systems which can be integrated with renewable energy sources to generate hydrogen fuel while producing minimal carbon footprint. This project aims to reduce the cost and energy required to manufacture these units through development of improved electrode application methods and reduction in platinum group metal usage.