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DaimlerChrysler Features Future Fuels Research at 2003 Detroit Science Center Gala

University Projects Supported by the DaimlerChrysler Challenge Fund Offer Environmentally Friendly Sources of Hydrogen and Storage Solution

May 15, 2003, Auburn Hills, Mich. -

- Hydrogen Produced from Algae and Sugar
- Zero-Emissions Fuel for Zero-Emissions Vehicles
- Biotechnology Also Provides Ultra Light and Strong Spider-Silk Fiber for High-Pressure Storage Tanks

Environmentally friendly hydrogen production and storage technologies that could be used to power future automobiles are the focus of three university studies partially funded by the DaimlerChrysler Challenge Fund. These biotechnologies were part of the Life Sciences technology display at the 2003 Detroit Science Center Gala May 16 in Detroit.

“We are proud to support these and other academic projects through the DaimlerChrysler Challenge Fund,” said Bernard Robertson, Senior Vice President, Engineering Technologies and Regulatory Affairs. “This technology is complementary to our core business, and completes the zero-emissions cycle for vehicles that can run on clean, renewable energy sources.”

The three featured technologies are:

Hydrogen Production from Algae and Bacteria,Prof. Tasios Melis, PhD., University of California, Berkeley

In this experimental program, hydrogen is produced by algae and bacteria using sunlight and water. Research in biotechnology provides green algae that release hydrogen through photosynthesis. The by-product from the photosynthesis provides food for the bacteria which also produces hydrogen through photosynthesis. This may prove to be an ecologically friendly, renewable source of hydrogen.

Hydrogen Production from Sugar,Prof. James A. Dumesic, PhD., University of Wisconsin, Randy D. Cortright, PhD., Mary-Rose de Valladares and Damon Bresenham, Virent Energy Systems, LLC., Madison, Wisconsin

Hydrogen can be produced from water-soluble carbohydrates such as sugars and alcohols. This is a renewable source of hydrogen, and this process offers the opportunity to reform the fuel to make hydrogen on-board the vehicle in a manner that is safe and nontoxic.

Higher Efficiency Packaging for Compressed Hydrogen,Prof. Lawrence T. Drzal, PhD., Michigan State University

Spider Silk fiber may solve several challenges for high-pressure gas storage necessary with compressed hydrogen. Spider silk is environmentally friendly, and for its weight, it is one of the strongest materials found in nature. Spider silk used in this university program to develop high-strength, lightweight composites has a strength-to-weight ratio, or specific strength, that is 20 to 45 times stronger than steel. It is roughly the same as Kevlar or Carbon fiber.

"As important as the fuel cell vehicle itself, is the issue of how the fuel for these vehicles is produced," said Thomas S. Moore, Vice President and head of the Liberty & Technical Affairs research group at DaimlerChrysler. "These research projects, which we are pleased to support through the DaimlerChrysler Challenge Fund, are addressing two important questions: How do we produce hydrogen fuel for automobiles using renewable, non-polluting resources, and how do we store hydrogen fuel onboard the vehicle?"

The DaimlerChrysler Challenge Fund supports a variety of academic research activities including those aimed at developing and storing hydrogen in environmental, ecological and renewable methods. This program challenges select universities to apply their creative resources to targeted automotive research projects in order to create closer working relationships with leading universities.

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