

Argonne and DOE Team with Industry to Overcome Technical Barriers and Set Protocols

Argonne National Laboratory is at the forefront of hybrid and electric vehicle research. For more than 20 years its research has contributed to the growing acceptance of these vehicles as real alternatives to traditional gasoline-powered internal combustion engine vehicles.

Argonne's technical expertise and top-of-the-line research facilities and equipment make Argonne a valuable partner to both well-established and up-and-coming players in the automotive industry.

Developing SAE PHEV Fuel Economy Test Procedures

Argonne's engineers are chairing the Society of Automotive Engineers SAE J1711 committee dedicated to determining test procedures for quantifying PHEV fuel and electrical energy consumption.

A123 Systems Advanced Battery Testing

A123 has enlisted Argonne's help in testing and calibrating its new PHEV Toyota Prius aftermarket retrofit battery module based upon its lithium-ion batteries.

EnerDel/Argonne Advanced High-Power Battery for Hybrid Electric Vehicles

The EnerDel/Argonne lithium-ion battery is a highly reliable and extremely safe device that is lighter in weight, more compact, more powerful and longer-lasting than nickel-metal hydride batteries. The battery is expected to meet the U.S. Advanced Battery Consortium's \$500 manufacturing price criterion for a 25-kilowatt battery. It is also less expensive to make than comparable Li-ion batteries.



EnerDel/Argonne Lithium-Ion Battery

PHEV Market Potential Analysis with EPRI

Argonne and the Electric Power Research Institute (EPRI) have determined in their analysis that ~32 km is estimated to be the most effective PHEV range for reducing oil use, if only one type of PHEV were to be produced.

International Collegiate Vehicle Engineering Competitions

Since 1987, Argonne has organized and operated more than two dozen competitions sponsored by the U.S. Department of Energy that have challenged students to learn real-world engineering skills while they design and build advanced vehicles. Industry partners contribute materials, time and expertise. The current competition, *EcoCAR Challenge*, runs for three years.

Additional Argonne Partners

- Air Products, Inc.
- Army Research Laboratory
- BMW
- Caterpillar, Inc.
- Chrysler
- Continental Automotive
- Corning, Inc.
- Cummins
- Daimler
- Electro-Motive Diesel, Inc.
- Envia Systems
- FC Stone Carbon, LLC
- Ford
- General Electric
- General Motors
- Google
- Hyundai Motor Company
- International Lubricants, Inc.
- International Truck and Engine Corporation
- ITW
- Johnson Controls Saft
- Magna Powertrain
- Magnetic Power-Motion, LLC
- Maxwell Technologies
- Michelin Americas Research and Development Corp.
- Mohawk Innovative Technology, Inc.
- NanoeXa
- National Reconnaissance Office
- Navistar Truck
- NRO/Air Force
- Pennsylvania State University
- PRIMET Precision Materials, Inc.
- Rexorce Thermionics, Inc
- SK Corporation
- TIW Corporation
- Toda Kogyo Corporation
- Valvoline Company

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