



2008 FLC Midwest Region Awards

Excellence in Technology Transfer Award

This regional award is presented to an employee or team of employees of a Midwest Region member laboratory in recognition of outstanding work during the transfer of a technology between a federal laboratory and another entity. This year, the award winners included Argonne National Laboratory's Chemical Sciences and Engineering Division for work on Advanced, High-Power Batteries for Hybrid Electric Vehicles.

The team of Khalil Amine, Ilias Belharouak, Zonghai Chen, and Haixa Deng worked with a team from EnerDel of Indianapolis, Indiana, to commercialize a lithium-ion battery technology developed by Argonne. The Argonne technology uses lithium-manganese oxide (LMO) as a cathode and lithium-titanium oxide (LTO) as an anode. The LMO/LTO design is safer both in production and use and increases the energy density of the battery compared to standard lithium-ion designs. The Argonne/EnerDel design eliminates the need for battery management and cooling systems, thus reducing the development and installed costs of the battery. In addition, the LMO/LTO design results in a battery that is lighter, occupies less space, provides more power, and has a longer life than the nickel-metal hydride batteries typically used in today's hybrid electric vehicles.

The technology transfer took place on a compressed schedule. In a single year, the Argonne team met with EnerDel, applied for and received funding, and completed work under a Work-for-Others Agreement. The resulting technology will reduce the cost of hybrid electric vehicles and can be used in a myriad of other applications ranging from deep drilling to implants suitable for use in people.