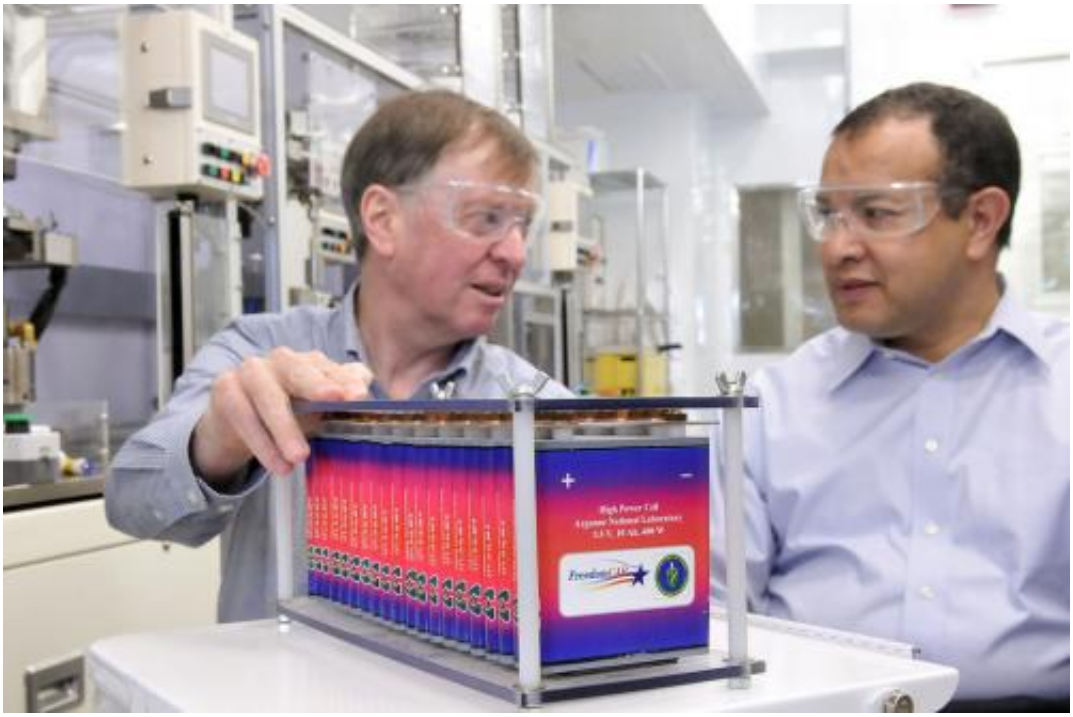
Argonne battery technology confirmed by US Patent Office

January 30 2014



Argonne researchers Michael Thackeray (left) and Khalil Amine, along with others at Argonne, co-developed battery materials that improve battery range and reliability, while simultaneously improving safety and reducing manufacturing cost.

The U.S. Department of Energy's (DOE) Argonne National Laboratory is pleased to announce that after a careful reexamination of the relevant prior patents and publications, the U.S. Patent and Trademark Office (USPTO) has confirmed the novelty of U.S. Patent 6,677,082.

This patent claims the Lithium Nickel Manganese Cobalt Oxide (NMC) cathode technology developed by Argonne that improves battery range and reliability, while simultaneously improving safety and reducing manufacturing cost. NMC cathode technology as described in this patent can be found in commercial consumer and vehicle lithium-ion batteries.

"This patent is the foundation of Argonne's suite of cathode technologies licensed to several prominent companies in the automotive and chemical industries, including GM, BASF, LG Chem and Toda Kogyo," said Carl Shurboff, manager of industry partnerships for Argonne's Technology Development & Commercialization (TDC) office. "The NMC cathode technology enables our licensees to make investments in U.S. manufacturing plants, particularly for lithium-ion batteries used in Plug-in Hybrid Electric Vehicles (PHEVs)."

Argonne's NMC cathode material is designed to the molecular level, enabling batteries to store more energy. It is environmentally safer than the cobalt oxide materials found in most lithium-ion batteries and is more economical to manufacture.

Michael Thackeray, a pioneer in lithium battery technology research and one of the co-inventors of the advanced cathode technology, was pleased with the Patent Office's finding. "The USPTO recognized and upheld the novelty of Argonne's cathode materials and their structural design," Thackeray said.

"This is a very important result for Argonne," said Greg Morin, interim director of Argonne TDC. "Vehicle electrification, through the use of advanced batteries, is an emerging market that is growing in importance. We believe that this technology, as well as Argonne's other battery-related discoveries and advances, could play a significant role in developing and growing PHEV and EV markets and allow our licensees to make significant investments in new manufacturing plants for battery

materials, battery products and PHEVs and EVs."

Provided by Argonne National Laboratory