

Argonne, industry to tackle end-of-life vehicle recycling

ARGONNE, Ill. (December 2, 2003) — The "junk" from junked cars will find new uses under a new research partnership for recycling plastics.

A five-year cooperative research agreement brings together the U.S. Department of Energy's Argonne National Laboratory, the [American Plastics Council](#) and the Vehicle Recycling Partnership of [USCAR](#), a consortium of [DaimlerChrysler Corp.](#), [Ford Motor Co.](#) and [General Motors Corp.](#) The agreement will build on recycling technology developed at Argonne to create a cost-effective process for recycling end-of-life vehicles.

"This project brings together the American Plastics Council's knowledge of polymers and recycling processes, Argonne's research expertise and USCAR's understanding of the marketplace," said Harvey Drucker, Argonne's associate laboratory director. "Together as a team, we can lead the development of viable solutions to the vehicle recycling challenges of today and the future."

With greater demands for better fuel economy and lower emissions, manufacturers are incorporating increasing amounts of lightweight and non-metallic materials into vehicles. At the end of their serviceable lives, about 15 million vehicles annually are discarded and sent to recycling companies for shredding. Much of the non-metallic materials in end-of-life vehicles cannot now be recycled due to the difficulty of separating and sorting the materials as well as a lack of existing markets and applications for recycled non-metallics. This leftover "shredder residue," which makes up about 25 percent of every junked vehicle, must then be landfilled at a significant cost to the vehicle recycler. The agreement aims at changing that situation.

"Vehicle recycling can be a self-sustaining process that pays for itself in the U.S.," said Mike Fisher, director of technology for the American Plastics Council. "The headway we make in boosting vehicle recyclability will be a boon to the American recycling industry and the American Plastics Council is pleased to be actively involved in the search for optimal, sustainable solutions to the management of end-of-life vehicles."

A new pilot recycling facility already operating at Argonne will serve as a focal point for the broader research that will be conducted by the partners.

Argonne's new pilot facility incorporates two processes; the



Resources

AUTO RECYCLING AGREEMENT — Richard T. Gutowski of DaimlerChrysler Co. pours automotive plastics that have been cleaned and sorted for recycling. Watching are (left to right) Ed Wall of the U.S. Department of Energy, Harvey Drucker of Argonne National Laboratory and James Kolb of the American Plastics Council. They are celebrating the signing of a five-year cooperative research agreement that brings together Argonne, the American Plastics Council and the Vehicle Recycling Partnership of USCAR, a consortium of DaimlerChrysler Corp., Ford Motor Co. and General Motors Corp. The agreement will build on recycling technology developed at Argonne to create a cost-effective process for recycling end-of-life vehicles.

first is a bulk separation process that separates shredder residues into four categories: fines (iron oxides, other oxides, glass and dirt), polyurethane foams, a mixed plastics concentrate of polymers (polypropylene, polyethylene, ABS, nylon, PVC, polyester, and other materials) and residual metals. The second process is a fully continuous plastics separation system that will demonstrate the selective recovery of specific plastics from the mixed plastics concentrates produced by the bulk separation process.

Argonne previously developed a process for recycling the polyurethane foams that are recoverable from shredder residues. This process is being demonstrated at a commercial scale in Europe.

"The agreement allows Argonne, the American Plastics Council and USCAR to leverage significant technical resources," said Pat Flaherty, executive director of USCAR. "Together, we have the potential to make a substantial positive impact in the recycling of materials from end-of-life vehicles in the United States."

The American Plastics Council advocates unlimited opportunities for plastics and promotes their economic, environmental and societal benefits. The vision of the automotive plastics industry is to establish plastics as the material of choice in the design of all major automotive components and systems by 2020. Visit www.plastics-car.com.

USCAR is the umbrella organization of DaimlerChrysler, Ford and General Motors, which was formed in 1992 to further strengthen the technology base of the domestic auto industry through cooperative, pre-competitive research.

Argonne's vehicle-recycling research is funded by the [Office of FreedomCAR and Vehicle Technologies Program](#) in the U.S. Department of Energy's (DOE) [Office of Energy Efficiency and Renewable Energy](#) .

The nation's first national laboratory, Argonne National Laboratory conducts basic and applied scientific research across a wide spectrum of disciplines, ranging from high-energy physics to climatology and biotechnology. Since 1990, Argonne has worked with more than 600 companies and numerous federal agencies and other organizations to help advance America's scientific leadership and prepare the nation for the future. Argonne is operated by the [University of Chicago](#) for the [U.S. Department of Energy's Office of Science](#).

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