

Scientists de-polymerize polymers

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Japanese scientists have created a process that breaks down certain plastics, allowing the chemicals to be reused to make new higher-quality plastic.

The Yamaguchi University researchers said their approach is similar to the process that fostered recycling of beverage cans, scrap steel and glass containers -- all of which are melted to produce aluminum, glass and steel.

However, no process has emerged to breakdown the long chains of molecules that make up the millions of pounds of polymer materials that are trashed each year. Instead, recycling of certain plastics involves melting and reforming into a plastic that is less pure than the original.

But Akio Kamimura and Shigehiro Yamamoto have invented an efficient method -- still in laboratory testing -- to de-polymerize polyamide plastics, including nylon and Kevlar.

"This is the first example of the use of ionic liquids for effective de-polymerization of polymeric materials and will open a new field in ionic liquid chemistry, as well as plastic recycling," the scientists said.

The research is scheduled for the July 5 issue of the journal *Organic Letters*.

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