Billions of pounds of plastics are discarded each year, often after only a single use. For example, while thirty percent of polyethylene terephthalate (the polyester used for beverage bottles) is recycled, primarily into relatively low-value applications such as fibers and fabrics, the remaining seventy percent is landfilled. We have sought approaches to use this enormous waste stream for more useful purposes. Toward that end, this paper describes our recently developed technology to harvest value-added chemicals from discarded polyesters and polycarbonates by controlled depolymerization, a process that unzips the polymer into useful smaller molecules using ruthenium-based catalysts.

**Controlled Depolymerization of Polyesters and Polycarbonates via Hydrogenation Mediated by Ruthenium(II) Pincer Complexes**

*Chemical Communications*