

Catalytic Depolymerization of Polymers

This invention provides a novel strategy for depolymerizing polyesters and polycarbonates with alcohols through the use of nucleophilic N-heterocyclic carbenes as catalysts. Contacting polyesters or polycarbonates with an alcohol in the presence of catalytic amounts of N-heterocyclic carbenes, or precursors to N-heterocyclic carbenes in a variety of solvents at their reflux temperature leads to the depolymerization of the polymer and recovery of the monomers. The advantage of this strategy is that no metal catalysts are required, and thus the resultant monomers are free from metal contaminants.

Applications

- Depolymerization of polyesters and polycarbonates

Advantages

- No metal catalysts are required and thus the resultant monomers are free from metal contaminants

Patents

- Published Application: [WO2004060987](#)
- Published Application: [20040127720](#)
- Published Application: [20040127744](#)
- Published Application: [20050288508](#)
- Issued: [7,053,221 \(USA\)](#)
- Issued: [7,544,800 \(USA\)](#)

Innovators

- Robert Waymouth
- Pinar Kilickiran
- James Hedrick
- Gregory Nyce

Licensing Contact

Chris Tagge

Technology Licensing Program Manager

[Email](#)