

# DEHYDROGENATION AND ISOMERIZING ETHENOLYSIS OF POLYETHYLENE

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## PATENT STATUS

Country	Type	Number	Dated	Case
European Patent Office	Published Application	EP4554922	05/21/2025	2022-130
China	Published Application			2022-130

Additional Patent Pending

## BRIEF DESCRIPTION

This invention is a method includes mixing a polymer with one or more dehydrogenating reagent(s), thereby forming the dehydrogenated polymer. Such a dehydrogenated polymer can then be made into a alkene or a dehydrogenating polymer.

## SUGGESTED USES

The conversion of polyolefins to small molecules (e.g., monomers) would enable the largest fraction of waste plastic to be a carbon feedstock, but such a task requires cleavage of carbon-carbon bonds that often resist selective chemical transformations. This invention does just this and recycles plastic for further use.

## ADVANTAGES

This invention is a recycling process for plastics by making alkenes from a polymer and dehydrogenated polyethylene compositions.

## RELATED MATERIALS

## ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- [Ruthenium-Catalyzed Selective Oxidation Of Polyethylenes](#)
- [CONVERSION OF POLYOLEFINS TO LIGHT OLEFINS WITH BASE-METAL HETEROGENOUS CATALYSTS](#)

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## OTHER INFORMATION

### CATEGORIZED AS

- » [Environment](#)
- » [Remediation](#)

### RELATED CASES

2022-130-0