Produce Liquid Hydrocarbon Fuel from Plastic Waste

Technical Details

Metal hydrides, hydrogen storage materials, can be used as both catalysts for polymer decomposition and hydrogen sources to convert alkenes. The method developed at UCF converts solid plastic waste into high quality useable liquid fuels, by gasifying the mixture of solid plastic waste in the presence of the metal hydride and a supported metal catalyst. The catalyst is applicable to decomposition processes such as pyrolysis, thermal catalytic cracking, hydrogenation, and aromatization, which in turn produce hydrocarbon fuels including liquefied petroleum gas, gasoline, jet fuel, kerosene, or diesel.

Benefits

- Decreased decomposition period
- Higher quality fuel
- One-step process

Applications

- Clean energy production
- Waste utilization

Technology #32450

- US Patent 9,200,207

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