

Catalyst-Assisted Pyrolysis of Renewable Feedstocks

What is this technology?

Catalyst-assisted thermochemical conversion without oxygen (pyrolysis) of biomass into char, liquids, and gasses, which can be used as fuels and fine chemicals.



What is this technology?

- Pyrolytic char, liquid and gas contain compounds of interest for use as fuels, commodity chemicals, and fine chemical precursors.
- Our research uses solid inorganic catalysts to affect the types and quantity of pyrolytic compounds produced.

What problem does it address?

- The need for renewable fuels and chemicals.
- Defining the parameters (i.e. feedstock, energy input, desired compounds, and undesired compounds) that must be met to make pyrolysis cost effective.

What is the significance of this solution?

- Bench top pyrolysis system allows for rapid screening of catalysts on a small scale.
- From this screening, proper catalyst choice will lead to greater product selectivity and reduced energy input.

Who could use this technology?

- Grain processors who are looking to increase return on excess biomass like DDGS or corn stover.
- Others with excess carbon waste streams such as food processors and plastics manufacturers.

How is this technology unique?

- Capability to perform bench-scale pyrolysis screening of catalysts and feedstocks.
- Pyrolytic fractions can be quickly analyzed to determine the best catalyst attributes for forming the desired pyrolytic products.

Moving Forward

Process and chemical engineering assistance is needed for energy and process cost analysis and for scale up.

Contact Information

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