



FuSS : Fuels Synthesized from Sugars

BACKGROUND & MOTIVATION

- Fuels make up 76% of volume of U.S. oil products.
- Chemicals make up 16% of the volume of U.S. oil production.
- A low-carbon renewable fuel that is cheap, easy to make that doesn't increase green house gas emissions is essential.

INNOVATION

Creating a sustainable alternative to petrochemicals can reduce greenhouse gas emissions, reduce dependence on foreign imported oil and will give us renewable alternatives to what is undeniably a finite resource - oil.

- Cheap catalysts - plentiful \$16/kg
- Low temperatures 120 oC
- Lower pressures 300 psi

Which leads to less engineering & lower costs

DESCRIPTION

MAIN ACHIEVEMENT:

Pursuing the low temperature, efficient conversion of biomass to chemicals and fuels for several years and we have developed a variety of new pathways.

Recent work converts a small building block molecule into several products – paint additives, chemical solvents and chemical precursors using a handful of simple chemical transformations with cheap catalysts.

As it's a single pathway we can alter the reaction conditions to adjust the chemicals produced dependent on market demand.

To increase robustness in our process we can also produce both diesel and gasoline components.



Portable & distributed

ANTICIPATED IMPACT

Low cost green route to chemicals and other high value products.

Identical catalysts for all steps allows for product profile to be tuned based on market demand

- **Distributes Risk in the marketplace**

PATH FORWARD

- Demonstrate scalability
- Scale-up to flow reactor to advance continuous production
- Obtain fuel performance metrics on our products
- Develop a sustainable fuel blend that works in an engine!

Potential End Users:

- Fuel producers & chemical companies

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