

The significant benefits/advantages of their invention are:

- ▶ A single step process for bioethanol conversion to jet fuel blendstocks (C9+ hydrocarbons) using Ga/modified ZSM-5 supports.
- ▶ By modifying the ZSM-5 pores, we can now migrate Ga into the zeolite channels and consequently the ethanol product distributions and specifically liquid hydrocarbon yields.
- ▶ Optimized process for zeolite pore size, crystallinity and Ga loading to achieve higher selectivity of C9-C10 hydrocarbons and catalyst stability (over 32 hours).
- ▶ For the first time, we now have the ability to achieve $\geq 50\%$ selectivity of C9-C10 hydrocarbons and $\geq 50\%$ liquid hydrocarbons yield from ethanol and wet-ethanol conversions.
- ▶ ZSM-5 modification with NaOH results in catalysts that can now be applied for ethanol conversion to C9-C10 hydrocarbons.

SUGGESTED USES

- ▶ For the conversion of bioethanol to sustainable aviation fuel.

INVENTIONS BY PROF. CHARLES WYMAN

- ▶ Please see [all inventions by Prof. Charles Wyman](#) and his team at UCR.

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