



## Production Of Liquid Alkanes In The Jet-fuel Range (c8-c15) From Biomass-derived Carbohydrates

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**WARF: P07421US**

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### The Invention

Described is a method for making a composition comprising alkanes. The composition is suitable for use as a liquid transportation fuel in general, and jet fuel in particular. The method includes dehydrating a feedstock solution comprising a carbohydrate, in the presence of an acid catalyst, to yield at least one furan derivative compound, in a reaction vessel containing a biphasic reaction medium: an aqueous reaction solution and a substantially immiscible organic extraction solution. The furan derivative compound is then subjected to a self-aldol condensation reaction or a crossed-aldol condensation reaction with another carbonyl compound to yield a beta-hydroxy carbonyl compound and/or an alpha-beta unsaturated carbonyl compound. The beta-hydroxy carbonyl and/or alpha-beta unsaturated compounds are then hydrogenated to yield a saturated or partially saturated compound, followed by hydrodeoxygenation (e.g., dehydrating and hydrogenating) of the saturated or partially saturated compound to yield a composition of matter comprising alkanes.

#### Tech Fields

- [Clean Technology : Energy storage, delivery & resource efficiencies](#)
- [Materials & Chemicals : Polymers](#)

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