

Technology Licensing Opportunity

Non-Confidential Summary



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SELECTIVE HYDROGENOLYSIS OF GLYCEROL TO PROPYLENE GLYCOL BY USING CU/CR/ZN/ZR MIXED METAL OXIDES CATALYST ROI # 11-024

Opportunity:

This invention is a method to convert a sugar alcohol, glycerol, to propylene glycol in high yield.

Background:

The increased production of biodiesel has resulted in a concomitant increased availability of glycerol, a byproduct of the production process. As a result, the price of glycerol has experienced a sharp downward spiral. Challenges have confronted biodiesel producers who have pursued glycerol conversion to the propylene glycol, a more desirable and higher priced chemical that is used in a wide range of industrial and consumer products. Conversion of glycerol in a cost effective manner is encumbered by low yield and the presence of undesirable contaminants.

In this invention copper, chromium and zinc mixed oxide catalysts supported on zirconia are used at a moderate temperature and pressure to selectively produce propylene glycol at enhanced yield. The process reduces the yield of undesirable products such as ethylene glycol, lactic acid and one-carbon molecules.

Invention:

- Improved propylene glycol yield
- Reduced yield of undesirable products
- Improved reaction at a moderate temperature and pressure

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Researcher profiles:



Professor Ajay Dalai's research areas include environmental catalysis such as alkylates from butane using solid acids and conversion of sulphur containing compounds from gases and waste water and other streams; chemical process and product development; upgrading and hydro-treating of hydrocarbon fluids; renewable energy such as hydrogen and bio-diesel from bio-mass and bio-oils; value-added chemicals from glycerol production and applications of activated carbon for mercury removal from flue gases; production of carbon nanotubes, and their catalytic applications.

Patent Status:

PCT application # PCT/CA2014/050183 was filed on March 6, 2014

Publications:

Lekha Charan Meher, Rajesh Gopinath, S. N. Naik, and Ajay K. Dalai Catalytic Hydrogenolysis of glycerol to Propylene Glycol over Mixed Oxides Derived from a Hydrotalcite-Type Precursor *Industrial & Engineering Chemistry Research* **2009** 48 (4), 1840-1846

Development Stage:

Product is ready for licensing to a commercial partner

For more information, please contact:

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