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ABSTRACT OF THE DISCLOSURE

A methanol synthesis and an ethanol synthesis are integrated into a single continuous process with the by-product carbon dioxide generated in the ethanol synthesis being utilized in the methanol synthesis. The methanol synthesis and ethanol synthesis can be further integrated with isobutylene synthesis with by-product hydrogen formed during isobutylene synthesis being used as a raw material in the methanol synthesis. In the preferred embodiments the ethanol synthesis utilizes Zymomonas mobilis bacteria in anaerobic fermentation in order to maximize the amount of carbon dioxide produced in a form which can be utilized in the methanol synthesis, to reduce carbon dioxide emissions and to provide an ethanol product which is highly suitable for reaction with the isobutylene to form ethyl tertiary butyl ether.

This Sheet Has Been Replaced

