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(54) Title: **BIOCATALYTIC PROCESSES AND MATERIALS FOR ENHANCED CARBON UTILIZATION**

(57) Abstract: Biocatalytic processes for producing a product wherein an aqueous stream comprising at least one fermentable substrate and/or a gaseous stream comprising at least one of CO₂/H₂, H₂, methane, and/or CO are provided to a fermentation zone comprising at least one organism capable of metabolizing a substance present in one of the streams. The fermentation may operate at conditions to mixotrophically metabolize at least one gaseous substrate and at least one substrate present in the aqueous stream.



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