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(54) Title: PROCESS FOR THE EFFICIENT PRODUCTION OF BIO HIGH PURITY ISOBUTENE FROM RENEWABLES

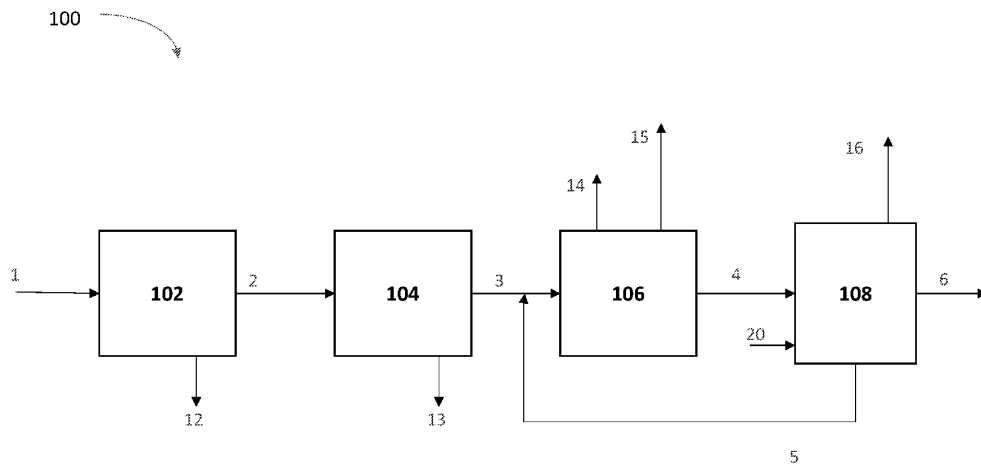


Figure 1

(57) Abstract: A process and system for converting bio ethanol to high purity isobutene is provided. The system includes a dehydration unit configured to receive a bio ethanol containing stream, convert the bio ethanol to bio ethylene, and produce a bio ethylene containing stream, a dimerization unit configured to receive the bio ethylene stream, dimerize ethylene, and produce an n-butenes containing stream, a skeletal isomerization unit configured to receive the n-butenes containing stream, convert n-butenes to produce a skeletal isomerization stream comprising an isobutene, isobutane, n-butenes, and n-butane, and a catalytic separation unit configured to receive the skeletal isomerization stream, convert olefins and/or isoolefins contained therein to produce a converted skeletal isomerization reaction product, and to fractionate the skeletal isomerization reaction product and produce bio isobutene.

[Continued on next page]

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