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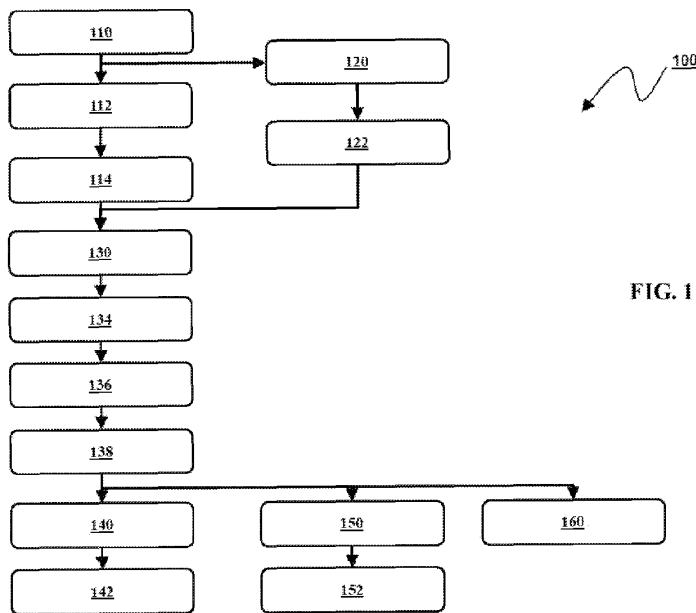


FIG. 1

(57) Abstract: Disclosed herein is a method and system are provided for generating hydrogen from biomass through continuous thermochemical processing. Biomass is fed into a reaction chamber along a defined processing pathway, where it undergoes a primary thermochemical reaction to yield an intermediate gas containing hydrogen, carbon monoxide, and vapor-phase compounds. These vapor components are further processed in a secondary thermochemical step to enhance hydrogen content and reduce undesirable byproducts. The method includes active control of at least one of the temperature and residence time along the processing pathway to optimize hydrogen yield and purity. Both thermochemical processes operate concurrently and progressively along the pathway. The corresponding system comprises a reaction chamber integrated with a heating assembly configured to perform both thermochemical stages. Temperature and/or residency duration are precisely regulated to improve process efficiency and hydrogen purity, with the reaction stages

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occurring in tandem along the processing route.