ABSTRACT

PROCESSES AND SYSTEMS FOR PRODUCING HYDROCARBON FUELS HAVING HIGH CARBON CONVERSION EFFICIENCY

The present disclosure relates to a processes and systems for producing fuels from biomass with high carbon conversion efficiency. The processes and systems described herein provide a highly efficient process for producing hydrocarbons from biomass with very low Green House Gas (GHG) emissions using a specific combination of components, process flows, and recycle streams. The processes and systems described herein provide a carbon conversion efficiency greater than 95 % with little to no GHG in the flue gas due to the novel arrangement of components and utilizes renewable energy to provide energy to some components. The system reuses water and carbon dioxide produced in the process flows and recycles naphtha and tail gas streams to other units in the system for additional conversion to syngas to produce hydrocarbon-based fuels.

(FIG. 1)