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(54) Title: ENHANCED REFORMING THROUGHPUT FOR MOLTEN CARBONATE FUEL CELL

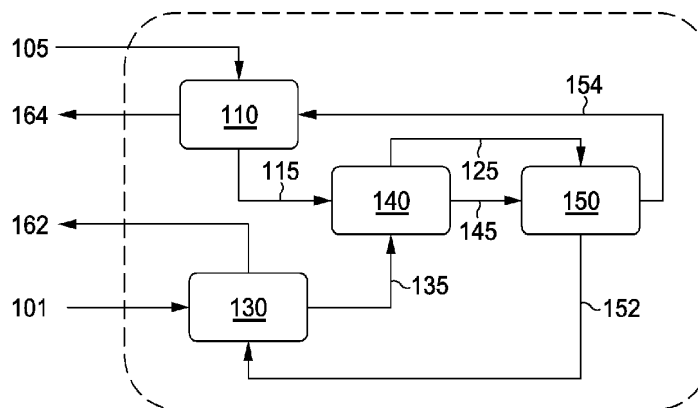


FIG. 1

(57) Abstract: Systems and methods are provided for operating molten carbonate fuel cells to produce increased amounts of H₂ in the anode effluent while still maintaining operation of the cell within conventional operation boundaries, such as having a temperature differential between the cathode input flow and the cathode effluent of 35°C or more, with the cathode effluent being hotter than the cathode input flow. This temperature differential between the cathode input flow and the cathode effluent while still producing excess hydrogen is achieved in part by a) passing an input flow containing hydrocarbons and/or reformable fuel into an external reformer, b) reforming 20 vol% or more of the hydrocarbons and/or reformable fuel in the external reformer prior to c) passing the partially reformed input flow into a fuel cell or fuel cell stack where additional reforming is performed in the anode(s) and/or in a reforming element in the fuel cell stack.

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