

SYSTEM AND METHOD FOR CONVERTING PLASTIC/RUBBER TO HYDROCARBON FUEL BY THERMO-CATALYTIC PROCESS

ABSTRACT OF DISCLOSURE

5 A system (100) of converting solid waste of plastics/rubber into hydrocarbon fuel, said system (100) comprising: (i) a thermal cracking reactor (110) for cracking the solid waste and a catalyst as feed at a temperature in the range of 200-475 °C to obtain a catalytic thermal cracking product containing a gaseous hydrocarbon stream and a coke residue; and
10 (ii) a condenser (120) for receiving said gaseous hydrocarbon stream and cooling said gaseous hydrocarbon stream to obtain an at least partly condensate stream containing a liquid hydrocarbon oil of smaller molecules and non-condensable gaseous hydrocarbons, wherein said thermal cracking reactor (110) having an operative top side-wall (103) and an operative bottom side-wall (105) is positioned in horizontal and comprising a feed inlet (104) at one end and a gas outlet (116) at an opposite end on said operative top side-wall (103), a
15 residue outlet (118) at said operative bottom side-wall (103), and an agitator device (106) centrally positioned between said side-walls (103, 105) along the operative longitudinal axis of said reactor (110), and wherein the condenser (120) is in operative communication with said gas outlet (116) of said reactor (110). A method of converting plastic/rubber to hydrocarbon by thermo-catalytic process is also disclosed.

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(FIG. 1)