C L A I M S

1. A process for producing liquid hydrocarbon products from a solid lignocellulose containing biomass feedstock, said process comprising the steps of:

a) providing in a first hydropyrolysis reactor vessel a first hydropyrolysis catalyst composition, said composition comprising one or more active metals selected from cobalt, molybdenum, nickel, tungsten, ruthenium, platinum, palladium, iridium and iron on an oxide support, wherein the one or more active metals are present in an oxidic state, wherein the term 'oxidic state' means that 95% or more of the one or more active metals are present in an oxidation state greater than zero as oxides;

b) contacting the solid biomass feedstock with said first hydropyrolysis catalyst composition and molecular hydrogen in said first hydropyrolysis reactor vessel at a temperature in the range of from 350 to 600°C and a pressure in the range of from 0.50 to 7.50MPa, to produce a product stream comprising partially deoxygenated hydropyrolysis product, H_2O, H_2, CO_2, CO, C_1 - C_3 gases, char and catalyst fines;

c) removing said char and catalyst fines from said product stream;

d) hydroconverting said partially deoxygenated hydropyrolysis product in a hydroconversion reactor vessel in the presence of one or more hydroconversion catalyst and of the H_2O, H_2, CO_2, CO, C_1 - C_3 gas generated in step a), to produce a vapour phase product comprising substantially fully deoxygenated hydrocarbon product, H_2O, CO, CO_2, hydrogen and C_1 - C_3 gases, wherein the hydroconversion catalyst comprises one or more active metals selected from cobalt, molybdenum, nickel, tungsten,

ruthenium, palladium, platinum, iridium and iron on an oxide support, wherein the one or more active metals is present in an oxidic state, and wherein the term 'substantially fully deoxygenated' is used to describe materials in which at least 90wt% of oxygen present in the original lignocellulose containing biomass has been removed.

2. A process according to claim 1, wherein the active metals are selected from one or more of cobalt, molybdenum, nickel, tungsten, and iron.

3. A process according to claim 1 or 2, wherein the solid biomass feedstock contains any combination of solid feedstocks containing waste plastics, feedstocks containing lignocellulose and municipal solid waste containing lignocellulosic material, waste plastics or food waste.

4. A process according to claim 3, wherein the solid biomass feedstock comprises material selected from one or more of woody biomass and agricultural and forestry products and residues and municipal solid wastes containing lignocellulosic material.

5. A process according to any one of claims 1 to 4, further comprising condensing the vapour phase product of step d) to provide a liquid phase product comprising substantially fully deoxygenated C4+ hydrocarbon liquid and aqueous material and separating said liquid phase product from a gas phase product comprising H_2O, CO, CO_2, and C_1 - C_3 gases.

6. A process according to claim 5, wherein the gas phase product comprising H_2O, CO, CO_2, and C_1 - C_3 gases are subjected to a

reforming and water-gas shift process in order to produce hydrogen.

7. A process according to claim 6, wherein the gas phase product is first purified to remove any H2S, organic sulfur compounds and NH_3 present before being subjected to the reforming and water-gas shift process.

8. A process according to claim 6 or claim 7, wherein the hydrogen produced in the reforming and water-gas shift process is used as at least a portion of the molecular hydrogen in at least one of steps a) and c).