CLAIMS

1. A one-step combined process for preparing a light hydrocarbon product from a non-fractionated or fractionated hydrocarbon feedstock, said process comprising refining, isomerisation and cracking of said non-fractionated or fractionated hydrocarbon feedstock in one step,
   characterised in that:
   (a) said step comprises heating said hydrocarbon feedstock in a reaction vessel with one or more fatty acids or mixtures thereof, at a vapour temperature below 360 °C,
   (b) said light hydrocarbon product is obtained in said process with a total yield of at least 60% and contains no heavy hydrocarbon products, and
   (c) said process is accompanied by formation of aromatic hydrocarbons.

2. The process of claim 1, wherein said hydrocarbon feedstock is selected from natural gas condensate, crude oil (petroleum), atmospheric or vacuum residues of refinery feedstocks, solvent deasphalted oils derived from said crude oil and said atmospheric or vacuum residues of refinery feedstocks, shale oil, oil sands, waste lubricating oils, oil sludge and other oil wastes, or mixtures thereof.

3. The process of claim 1, wherein said light hydrocarbon product contains light petroleum gases, naphtha, gasoline (petrol) for motor and turbine fuels, kerosene, diesel fuel (fuel oil) and light crude oil.

4. The process of claim 1, wherein said heavy hydrocarbon products, which are not obtained in said process, are the hydrocarbons containing 25 carbon atoms or more.

5. The process of claim 1, wherein said hydrocarbon feedstock is continuously fed into the reaction vessel together with said one or more fatty acids, or mixtures thereof.

6. The process of claim 1, wherein said one or more fatty acids are selected from stearic acid, oleic acid, myristic acid, palmitic acid, palmitoleic acid, linoleic acid, linolenic acid, arachidic acid, gadoleic acid, erucic acid or mixtures thereof.

7. The process of claim 1, wherein said obtained light hydrocarbon products are continuously distilled from the reaction vessel, without fractionation, and further collected in a product storage tank.

8. The process of claim 1, wherein said obtained light hydrocarbon products are fractionally distilled from the reaction vessel, and further collected in a product storage tank.

9. The process of claim 1, wherein said hydrocarbon feedstock is pre-treated prior to feeding it into the reaction vessel to remove water, water-soluble salts and suspended solids from said hydrocarbon feedstock.

10. The process of claim 9, wherein said hydrocarbon feedstock is initially streamed into an oil-water separator for separating gross amounts of oils from a wastewater and suspended solids found in the wastewater effluents of refineries and various plants or in the waste lubricating oils, oil sludge and other oil wastes.

11. The process of claim 1, wherein said hydrocarbon feedstock is diluted before the said process with a portion of the light hydrocarbon product for obtaining the hydrocarbon feedstock having the density lower than 0.82-0.84 g/cm^3.

12. The process of claim 11, wherein said dilution is carried out continuously during said process or during transportation of the hydrocarbon feedstock.

13. The process of claim 11, wherein said portion of the light hydrocarbon product used for dilution of the hydrocarbon feedstock is taken from the light naphtha fraction having boiling range between 40 °C to 105 °C.

14. The process of claim 1, wherein said heating of said hydrocarbon feedstock in the reaction vessel is carried out under atmospheric pressure.

15. The process of claim 1, wherein said heating of said hydrocarbon feedstock in the reaction vessel is carried out under elevated pressure or in vacuum.

16. The process of claim 1, wherein said process is continuous or semi-continuous.

17. The process of claim 1, wherein the total yield of the light hydrocarbon product is at least 80%.

18. The process of claim 1, wherein said one or more fatty acids or mixtures thereof are capable of forming *in-situ* a complex with metals or metal ions inherently present in said non-fractionated or fractionated hydrocarbon feedstock, thereby catalysing said process.

19. A reactant-catalyst for the process of claim 1, containing one or more fatty acids or mixtures thereof complexed with metals or metal ions.

20. The reactant-catalyst of claim 19, wherein said reactant-catalyst is in a solid form.