CLAIMS

1. A process to convert crude oil into petrochemical products comprising crude oil distillation, hydrocracking and steam cracking, which process comprises:
   (a) subjecting the crude oil to crude oil distillation to produce gases fraction, naphtha, kerosene, gasoil and resid;
   (b) subjecting resid to resid upgrading to produce LPG, light-distillate and middle-distillate wherein the resid upgrading is conducted in a resid upgrading unit selected from the group consisting of a delayed coker, a fluid coker, a resid FCC, a Flexicoker, a visbreaker, a resid hydrocracker and a catalytic hydrovisbreaker;
   (c) subjecting at least a portion of middle-distillate produced by resid upgrading, at least a portion of kerosene and gasoil to middle-distillate hydrocracking to produce LPG, light-distillate and hydrowax; and
   (d) subjecting at least a portion of light-distillate produced by middle-distillate hydrocracking and at least a portion of hydrowax to steam cracking;

   wherein the resid upgrading is resid hydrocracking.

2. The process according to claim 1, wherein at least a portion of one or more selected from the group consisting of the gases fraction, LPG produced by resid upgrading and LPG produced by middle-distillate hydrocracking is subjected to steam cracking.

3. The process according to claim 1 or 2, wherein at least a portion of the gases fraction is subjected to steam cracking.

4. The process according to any one of claims 1-3, wherein at least a portion of the naphtha is subjected to steam cracking.

5. The process according to any one of claims 1-4, wherein the middle-distillate hydrocracking further produces a heavy-distillate, wherein at least a portion of said heavy-distillate produced by middle-distillate hydrocracking is subjected to resid upgrading.

6. The process according to any one of claims 1-5, wherein the steam cracking produces a middle-distillate, wherein at least a portion of said middle-distillate produced by steam cracking is subjected to middle-distillate hydrocracking.

7. The process according to any one of claims 1-6, wherein the steam cracking produces a heavy-distillate, wherein at least a portion of said heavy-distillate produced by steam cracking is subjected to resid upgrading.

8. The process according to any one of claims 1-7, wherein at least a portion of light-distillate produced by the resid upgrading, at least a portion of light-distillate produced by middle-distillate hydrocracking and at least a portion of hydrowax are subjected to steam cracking.

9. Process installation to convert crude oil into petrochemical products comprising

a crude distillation unit (1) comprising an inlet for crude oil (10), an outlet for gases fraction (21), an outlet for naphtha (31), an outlet for kerosene and/or gasoil (41) and an outlet for resid (51);

a resid upgrading unit (3) comprising an inlet and an outlet for LPG (23), an outlet for light-distillate (33) and an outlet for middle-distillate (43), wherein the resid upgrading unit is selected from the group consisting of a delayed coker, a fluid coker, a resid FCC, a Flexicoker, a visbreaker, a resid hydrocracker and a catalytic hydrovisbreaker;

a middle-distillate hydrocracking unit (2) comprising an inlet and an outlet for LPG (22), an outlet for light-distillate (32) and an outlet for hydrowax (42); and

a steam cracking unit (4),

wherein at least a portion of the middle-distillate produced by resid upgrading (43) and at least a portion of kerosene and/or gasoil (41) is fed to the inlet to the middle-distillate hydrocracking unit and wherein at least a portion of the light-distillate produced by middle-distillate hydrocracking (32) and at least a portion of hydrowax (42) is fed to the steam cracking unit (4);

wherein at least a portion of one or more selected from the group consisting of the gases fraction, LPG produced by resid upgrading and LPG produced by middle-distillate hydrocracking is subjected to steam cracking;

wherein the resid upgrading unit (3) is a resid hydrocracking unit.

10. The process installation according to claim 9, wherein at least a portion of one or more selected from the group consisting of the gases fraction (21), LPG produced by resid upgrading (23) and LPG produced by middle-distillate hydrocracking (22) is fed to the steam cracking unit (4).

11. The process installation according to any one of claims 9-10, wherein at least a portion of the naphtha (31) is fed to the steam cracking unit (4).

12. The process installation according to any one of claims 9-11, wherein the middle-distillate hydrocracking unit (2) comprises a further outlet for a heavy-distillate (52) wherein at least of a portion of the heavy-distillate (52) is fed to the resid upgrading unit (3).

13. The process installation according to any one of claims 9-12, wherein the steam cracking unit (4) comprises a further outlet for a middle-distillate (44), wherein at least a portion of the middle-distillate (44) is fed to the middle-distillate hydrocracking unit (2).

14. The process installation according to any one of claims 9-13, wherein at least a portion of the light-distillate produced by resid upgrading (33), at least a portion of the light-distillate produced by middle-distillate hydrocracking (32) and at least a portion of the hydrowax (42) are fed to the steam cracking unit (4).