CLAIMS

1. A process for the production of coke and one or more volatile products, the process comprising the steps of:

(i) providing a purified coal product (PCP), in which the PCP is in particulate form, and in which at least about 90% by volume (%v) of the particles are no greater than about 100 µm in diameter; in which the PCP has an ash content of less than about 10%m and a water content of less than around 5%m;

(ii) combining the PCP with a liquid residue oil in order to create a combined solid-liquid blend, in which the solid-liquid blend comprises at least around 0.1 %m and at most around 30%m PCP;

(iii) subjecting the solid-liquid blend to a temperature in excess of 375 ˚C for a time period sufficient to induce cracking of at least 1% of the PCP particles to generate the one or more volatile products, and

(iv) producing coke from the product of step (iii).

2. A process according to Claim 1, in which at least about 90% by volume (%v) of the PCP particles are no greater than about 75 µm in diameter.

3. A process according to Claim 1, in which the PCP has an ash content of less than about 2%m.

4. A process according to Claim 1, in which the PCP has an ash content not more than 1%m.

5. A process according to Claim 1, in which the PCP has a water content of less than around 2%m.

6. A process according to Claim 1, in which the liquid residue oil comprises one or more of the group consisting of: residue from refinery atmospheric distillation of crude oil feedstock; residue from vacuum distillation of crude oil feedstock; slurry oil from catalytic crackers; bottoms from naphtha crackers; oil produced by pyrolysis of plastic, wood and biomass; black liquor from the Kraft process of wood pulp manufacture; light and heavy cycle oil; light and heavy gas oil; diesel fuel; fuel oil; bunker oil; boiler fuel oil; decanted oil;

marine fuel oil; marine diesel oil; biodiesel; slop oil; oils derived from tar sands; crude oil; synthetic crude oil; and oil from biofuel manufacture.

7. A process according to Claim 1, in which the solid-liquid blend of (iii) is used as a feedstock in a delayed, fluid or flexi coker in step (iv).

8. A process according to Claim 7, in which the feedstock is introduced into a drum of a delayed coker.

9. A process according to Claim 7, in which the feedstock is heated to a temperature of at least 450 ˚C.

10. A process according to Claim 7, in which the feedstock is introduced into fluidised bed coker reactor.

11. A process according to Claim 1, in which step (iii) comprises a fractionation step.

12. A process according to Claim 1, further comprising a step of calcining the coke of step (iv) in order to produce a calcined coke.

13. A process for operating a delayed coker comprising performing a process according to Claim 1 in a delayed coker.

14. A process for operating a fluid or flexi coker comprising performing a process according to Claim 1 in a fluid or flexi coker.

15. A coke product obtainable by a process according to Claim 1.

16. A coke product according to Claim 15, in which the coke is prepared from a solid-liquid blend that comprises at least around 5%m and at most around 30%m PCP.

17. A coke product according to Claim 15, in which the coke is prepared from a solid-liquid blend that comprises at least around 10%m and at most around 20%m PCP. 18. A coke product according to Claim 15, in which the coke is prepared from a solid-liquid blend that comprises a residue oil.

19. A coke product according to Claim 15, in which the coke is selected from the group consisting of: fuel grade coke; anode grade coke; needle coke; fluid coke; and battery coke.

20. A calcined coke product obtainable by a process according to Claim 12.

CLAIMS

1. A process for the production of coke and one or more volatile products, the process comprising the steps of:

(i) providing a purified coal product (PCP), in which the PCP is in particulate form, and in which at least 90% by volume (%v) of the particles are no greater than 100 μm in diameter; in which the PCP has an ash content of less than 10%m and a water content of less than 5%m;

(ii) combining the PCP with a liquid residue oil in order to create a combined solid-liquid blend, in which the solid-liquid blend comprises at least 0.1 %m and at most 30%m PCP;

(iii) subjecting the solid-liquid blend to a temperature in excess of 375 ˚C for a time period sufficient to induce cracking of at least 1% of the PCP particles to generate the one or more volatile products, and

(iv) producing coke from the product of step (iii).

2. A process according to Claim 1, in which at least 90% by volume (%v) of the PCP particles are no greater than 75 μm in diameter.

3. A process according to Claim 1, in which the PCP has an ash content of less than 2%m.

4. A process according to Claim 1, in which the PCP has an ash content not more than 1%m.

5. A process according to Claim 1, in which the PCP has a water content of less than 2%m.

6. A process according to Claim 1, in which the liquid residue oil comprises one or more of the group consisting of: residue from refinery atmospheric distillation of crude oil feedstock; residue from vacuum distillation of crude oil feedstock; slurry oil from catalytic crackers; bottoms from naphtha crackers; oil produced by pyrolysis of plastic, wood and biomass; black liquor from the Kraft process of wood pulp manufacture; light and heavy cycle oil; light and heavy gas oil; diesel fuel; fuel oil; bunker oil; boiler fuel oil; decanted oil; marine fuel oil; marine diesel oil; biodiesel; slop oil; oils derived from tar sands; crude oil; synthetic crude oil; and oil from biofuel manufacture.

7. A process according to Claim 1, in which the solid-liquid blend of (iii) is used as a feedstock in a delayed, fluid or flexi coker in step (iv).

8. A process according to Claim 7, in which the feedstock is introduced into a drum of a delayed coker.

9. A process according to Claim 7, in which the feedstock is heated to a temperature of at least 450 ˚C.

10. A process according to Claim 7, in which the feedstock is introduced into fluidised bed coker reactor.

11. A process according to Claim 1, in which step (iii) comprises a fractionation step.

12. A process according to Claim 1, further comprising a step of calcining the coke of step (iv) in order to produce a calcined coke.

13. A process for operating a delayed coker comprising performing a process according to Claim 1 in a delayed coker.

14. A process for operating a fluid or flexi coker comprising performing a process according to Claim 1 in a fluid or flexi coker.

15. A coke product obtainable by a process according to Claim 1.

16. A coke product according to Claim 15, in which the coke is prepared from a solid-liquid blend that comprises at least 5%m and at most 30%m PCP.

17. A coke product according to Claim 15, in which the coke is prepared from a solid-liquid blend that comprises at least 10%m and at most 20%m PCP.

18. A coke product according to Claim 15, in which the coke is prepared from a solid-liquid blend that comprises a residue oil.

19. A coke product according to Claim 15, in which the coke is selected from the group consisting of: fuel grade coke; anode grade coke; needle coke; fluid coke; and battery coke.

20. A calcined coke product obtainable by a process according to Claim 12.