CLAIMS

1. A process for the production of anisotropic coke, 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 feedstock 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 50%m PCP;

(iii) subjecting the solid-liquid blend to a temperature in excess of 400 ˚C for a time period sufficient to induce formation of mesophase, and

(iv) producing anisotropic 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; optionally no greater than about 50 μm in diameter, optionally no greater than about 25 μm in diameter.

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

4. A process according to Claim 1, 2 or 3, in which the PCP has a water content of less than around 2%m.

5. A process according to any preceding claim, in which the PCP has a sulfur content of less than around 3%m.

6. A process according to any preceding claim, in which the feedstock oil comprises an oil having high aromatic content.

7. A process according to Claim 6, in which the feedstock oil is selected from one or more of the group consisting of: a decanted oil; a heavy oil derived from coal tar; and a heavy oil derived from thermal cracker bottoms.

8. A process according to any preceding claim, in which the solid-liquid blend of (iii) is used as a feedstock in a delayed coker in step (iv).

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

10. A process according to Claim 8 or 9, in which the feedstock is heated to a temperature of at least 400 ˚C.

11. A process according to any preceding claim, further comprising a step of calcining the anisotropic coke of step (iv) in order to produce a calcined needle coke.

12. A process according to any preceding claim, in which the solid-liquid blend comprises at most around 40%m PCP.

13. A needle coke product obtainable by a process according to any preceding claim.

14. A method of using 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 75 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, as an additive in a delayed coker process in order to increase the proportion of anisotropic coke produced by the process.

15. A method according to Claim 14, in which the PCP is added to a decanted oil or a coal derived oil to create a feedstock for delayed needle coker process.

16. A method according to Claim 14 or 15, in which at least about 90% by volume (%v) of the PCP particles are no greater than about 75 μm in diameter.

17. A method according to Claim 14, 15 or 16, in which the PCP has an ash content of less than about 2%m.

18. A method according to any of Claims 14 to 17, in which the PCP has a water content of less than around 2%m.

19. A method according to any of Claims 14 to 18, in which the PCP has a sulfur content of less than around 3%m.

20. A method according to any of Claims 14 to 19, in which the method results in an increase in the yield of needle coke from the delayed coker process.

21. A method for increasing the yield of needle coke produced by a delayed coker process comprising adding to a feedstock of decanted oil or a coal derived oil, not less than 0.1%m and not more than around 50%m of a PCP,

in which the PCP is provided in solid particulate form, and in which at least about 90% by volume (%v) of the particles are no greater than about 75 μm in diameter; in which the PCP has an ash content of less than about 10%m and a sulfur content of less than around 3%m.

22. A method for increasing the yield of needle coke produced by a delayed coker process comprising adding to a feedstock of decanted oil or a coal derived oil, not less than 0.1%m and not more than around 50%m of a PCP,

in which the PCP is provided as a coal particle-in-oil slurry, and in which at least about 90% by volume (%v) of the particles are no greater than about 75 μm in diameter; in which the PCP has an ash content of less than about 10%m and a sulfur content of less than around 3%m.

23. A mesophase promoting additive for use in a method of operating a delayed coker process, the additive comprising 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.