

CLAIMS:

1. A method for pyrolysing plastic material, the method comprising the steps of:
heating and densifying plastic material;
5 transporting the plastic material to one or more reactors; and
pyrolysing the plastic material in the one or more reactors; characterised by
maintaining the plastic material in a heated state during the transporting step.
2. A method according to claim 1, wherein the heated plastic material is delivered to
10 one reactor at a time.
3. A method according to claim 1 or claim 2, wherein the step of heating and
densifying the plastic material is effected by extruding the plastic material.
- 15 4. A method according to any one of the preceding claims, wherein the plastic material
is maintained in a melted state during the transporting step.
5. A method according to any one of the preceding claims, wherein a temperature of
the plastic material is maintained at a temperature within a target temperature range.
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6. A method according to claim 5, wherein the target temperature range is lower than
a decomposition temperature of the plastic material.
7. A method according to any one of the preceding claims, wherein a temperature of
25 the plastic material is maintained at a temperature of at least 265°C.
8. A method according to any one of the preceding claims, wherein a temperature of
the plastic material is maintained at a temperature of at least 280°C.
- 30 9. A method according to any one of the preceding claims, wherein a temperature of
the plastic material is maintained at a temperature of no more than 310°C.
10. A method according to any one of the preceding claims, wherein a temperature of
the plastic material is maintained at a temperature of no more than 300°C.
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11. A method according to claim 5, or any one of claims 6 to 10 as dependent upon claim 4, wherein the plastic material is heated to a temperature within the target temperature range during the heating and densifying step.
- 5 12. A method according to claim 11, wherein the plastic material is at a temperature within the target temperature range at the end of the heating and densifying step.
13. A method according to any one of the preceding claims, wherein the plastic material is transported at a positive angle to the horizontal.
- 10 14. A method according to claim 13, wherein the angle is selected from a range of from 10° to 45°.
- 15 15. A system for pyrolysing plastic material, the system comprising:
a pump for heating and densifying plastic material;
one or more reactors for pyrolysing the plastic material; and
a pipe for transporting the plastic material between the pump and the one or more reactors; wherein
the pipe is configured to maintain the plastic material in a heated state.
- 20 16. A system according to claim 15, wherein the system comprises two or more reactors for pyrolysing the plastic material, and wherein the system further comprises a plurality of valves arranged such that heated plastic material can be delivered to one reactor at a time.
- 25 17. A system according to claim 15 or claim 16, wherein the pump comprises an extruder.
- 30 18. A system according to any one of claims 15 to 17, wherein the pipe is configured to maintain the plastic material in a melted state.
19. A system according to any one of claims 15 to 18, wherein the pipe comprises heating means.

20. A system according to claim 19, wherein the heating means comprises electric heat tracing.
21. A system according to any one of claims 15 to 20, wherein the pipe is oriented at a positive angle to the horizontal.
22. A system according to any one of claims 15 to 21, wherein the angle is selected from a range of from 10° to 45°.
22. A system according to any one of claims 15 to 22, wherein the system comprises a plurality of interlocked valves for delivering heated plastic material to two or more reactors.