

Claims:

1. An additive manufacturing system comprising:
an additive manufacturing device, said device including:
 - 5 a resin vessel for containing a material which is polymerisable on exposure to radiation;
 - a build platform having a build surface arranged to have an object manufactured thereon;
 - a radiation source;
 - 10 said radiation source positioned to irradiate uncured material on said build surface to manufacture the object;
said device in wireless communication with a central station;
- 15 said central station arranged to process data to create manufacturing files;
said central station arranged to communicate said files to said device such that the device manufactures the object based upon said files.
2. The system according to claim 1, wherein said remote station is arranged to
20 wirelessly receive the data from a remote station.
3. The system according to claim 2, wherein the data includes dental information of a patient.
- 25 4. The system according to claim 2, wherein the device is arranged to automatically commence operation on receipt of the communicated manufacturing files.

5. The system according to any one of claims 1 to 4, wherein the central station is in wireless communication with a plurality of said additive manufacturing devices.
6. An additive manufacturing method, the method comprising the steps of:
 - 5 providing an additive manufacturing device and a central station;
 - processing data to create manufacturing files at said central station;
 - communicating wirelessly said files to said device, and;
 - manufacturing the object by the device based upon said files.
- 10 7. The method according to claim 6, further including the step of said central station wirelessly receiving the data from a remote location.
8. The system according to claim 7, wherein the data includes dental information of a patient.
- 15 9. The system according to claim 7, further including the step of automatically commencing manufacture on receipt of the communicated manufacturing files.
10. An additive manufacturing device, comprising:
 - 20 a resin vessel for containing a material which is polymerisable on exposure to radiation, said resin vessel arranged to receive a print capsule;
 - a build platform having a build surface arranged to have an object manufactured thereon,
 - a radiation source positioned to irradiate uncured material on said build surface to
 - 25 manufacture the object;
 - wherein said print capsule includes a metered volume of resin corresponding to a finite number of manufactured objects.

11. The device according to claim 10, wherein the finite number is in the range 1 to 4.
- 5 12. The device according to claim 10 or 11, wherein the print capsule includes an identification tag, said identification tag arranged to provide interrogatable data corresponding to the print capsule.
- 10 13. The device according to any one of claims 10 to 12, wherein the interrogatable data includes any one or a combination of: type of resin, volume of resin, finite number of objects manufacturable from said volume of resin, the type of object for which the print capsule is to be used.
- 15 14. The device according to claim 12 or 13, wherein said interrogatable data is stored within said identification tag.
- 20 15. The device according to claim 12 or 13, wherein said identification tag is arranged to provide a link via a wireless connection to access the interrogatable data.
- 25 16. The device according to claim 12 or 13, wherein said identification tag is arranged to provide a link to access the interrogatable data from data stored within said device.
17. The device according to any one of claims 12 to 16, wherein said identification tag includes an RFID, barcode or QR code.
18. The device according to any one of claims 12 to 17, further including a reader arranged to interrogate said identification tag.

19. The device according to any one of claims 12 to 18, further including a capsule holder for receiving the print capsule, wherein the capsule holder includes a plunger for engaging the print capsule and applying pressure to inject the resin from the print capsule into the resin vessel.
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20. The device according to claim 19, wherein the capsule includes a valve for regulating the injection of resin on application of pressure from the plunger.
21. An additive manufacturing device, comprising:
- 10 a resin vessel for containing a material which is polymerisable on exposure to radiation;
- a build platform having a build surface arranged to have an object manufactured thereon,
- a radiation source;
- 15 said radiation source positioned to irradiate uncured material on said build surface to manufacture the object;
- a curing station arranged to receive the object and cure said object;
- at least one washing station arranged to receive the cured object and wash said object ready for use by an end user;
- 20 wherein said curing station and washing stations are located on a rotatable tray, said rotatable tray arranged to sequentially rotate each station for receiving said object.
22. The device according to claim 21, wherein the build platform is arranged to raise
- 25 said object following manufacture, and lower said object into the curing station following rotation of the rotatable tray to position the curing station beneath the build platform.
23. The device according to claim 22, wherein the build platform is arranged to raise
- 30 said object following curing, and lower said object into the washing station

following rotation of the rotatable tray to position the washing station beneath the build platform.

24. The device according to any one of claims 21 to 23, wherein the washing station
5 includes a washing vessel arranged to receive the object and an agitation assembly, said agitation assembly arranged to create turbulence in said washing vessel.

25. The device according to claim 24, wherein the agitation assembly includes a
10 washing magnet in a base of said washing vessel, said washing magnet in magnet communication with a guide magnet beneath the washing vessel, said guide magnet coupled to a motor and pulley system arranged to rotate the guide magnet and consequently the washing magnet.

26. The device according to any one of claims 21 to 25, further including a sealing
15 tray attached to said rotatable tray, said sealing tray arranged to seal said curing and washing stations.

27. The device according to any one of claims 21 to 26, further including:
20 a resin vessel tray to which said resin vessel is mounted, and an illumination tray positioned below said resin vessel;
said illumination tray having the radiation source mounted thereto;
said radiation sourced positioned to direct radiation upwards through a transparent
25 base of said resin vessel in order to irradiate said resin.

28. The device according to any one of claims 21 to 27, wherein said rotatable tray
includes a print void, said rotatable tray arranged to rotate to position the print
void intermediate the resin vessel and build platform on irradiation of said resin.

29. The device according to any one of claims 21 to 28, further including a capsule holder mounted to the rotatable tray for receiving a print capsule, said print capsule including a metered volume of resin corresponding to a finite number of manufactured objects

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30. The device according to claim 29, wherein the capsule holder includes a plunger for engaging the print capsule and applying pressure to inject resin from the print capsule into the resin vessel.

10 31. The device according to any one of claims 27 to 31, wherein the illumination and resin vessel trays are fixed, preventing rotation of the illumination device and resin vessel, respectively.

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