RECENT PATENT PUBLICATIONS ON 3D PRINTING

Dates: 27th August 2020 to 03rd September 2020

3D printing has witnessed an upward trend in terms of device and materials. Here, we present snapshots from some recent publications relating to 3D printing.

Publication No
- WO2020176085

Title
- Cure Time for 3D Printing Green Parts

Summary
- Present invention relates to a 3D printing system which is used to determine a cure time for a functional agent applied to print a part as a function of build platform position and then cure the functional agent for the determined cure time.

Publication No
- WO2020176855

Title
- High Resolution Three-dimensional Printing System

Summary
- This invetion includes a 3D printing system for fabricating a three-dimensional article motorized build platform, a dispensing module, a pulsed light source, an imaging module, a movement mechanism, and a controller.

Publication No
- WO2020172899

Title
- Interior Stereo Light Projection and Lithography 3D Printing Apparatus and Forming Method Thereof

Summary
- An interior stereo light projection and lithography 3D printing apparatus, mainly comprising a laser projection module, a light reference plane module and its lifting system, a resin tank, a forming platform and its forming platform lifting system, a control and power supply system and a main body framework.

Publication No
- WO2020176078

Title
- Determining Fusing Energy Profiles in 3D Printing

Summary
- A method of 3D printing includes receiving a 3D object model that defines the shape of an object to be printed in a layer-by-layer build process, and determining a desired thermal profile based on the shape of the object. For each object layer, a fusing energy radiation pattern is determined based on the desired thermal profile.

Publication No
- WO2020168809

Title
- Multi-station 3D Printer Control Method, Optical System, and 3D Printer

Summary
- This invention includes a multi-station 3D printer control method, an optical system, and a multi-station 3D printer. The control method comprises: pre-processing 3D model information, and forming pieces of executable data. The optical system comprises a control system, a light source, a moving mechanism, and a storage module. A single optical system is used to perform exposure at multiple stations, thereby achieving mass production of 3D printing.

Publication No
- US20200269463

Title
- Reinforcement of 3D-Printed Concrete Bodies

Summary
- A method for producing a component from hardenable material, wherein, at least one layer of the material is printed in a 3D printing process, and multiple similar reinforcing elements are introduced into the layer(s) and the two method steps are cyclically repeated until the component one is completed and characterized.

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Publication No

- WO2020169369

Title

- 3D Printing Method for Producing Concrete-containing Segments of a 3D Object

Summary

- The present invention relates to a 3D printing method for the (layer-by-layer) production of at least one segment of a 3D concrete-based object, the at least one segment having at least three layers and containing concrete. The present invention also relates to 3D object as such, containing at least one segment which has at least three layers and contains concrete and can be produced by the method according to the invention.

Publication No

- WO2020171702; US20200269601

Title

- System and Method for High Accuracy Printing on a 3D Surface

Summary

- This invention provides a method and system for printing an image on a 3D surface, wherein a printing robot is controlled to first carry out an encoder pattern capture run.

Publication No

- WO2020170058

Title

- Parallel Axis With Plate Printer (P.A.P Printer)

Summary

- The present device has been designed as a 3D printer for semi-industrial applications by using fused deposition modeling (FDM). The fixed-bed configuration allows for reducing vibration errors on workpiece caused by moving beds.

Publication No

- US20200269501

Title

- Three-dimensional Printing

Summary

- A composition for 3D printing includes a polymer build material and a non-conductive fusing agent dispensable onto the polymer build material to form a polymer-fusing agent composite portion.

Publication No

- WO2020170693

Title

- Printer Control System, Printing System and Printing Data Creation Method

Summary

- This printer control system for controlling an inkjet printer that prints an image of a prescribed thickness on a printing medium, is provided with an image data creating/editing unit. Defining as a thick portion 3D that portion in the image printed on the printing medium where thickness is to be imparted to the image, the image data sent from the image data creating/editing unit to the printer control unit includes thickness information relating to the thickness of the thick portion 3D and/or shape information relating to the shape of the edge of the thick portion 3D.

Publication No

- US20200269503

Title

- 3D Printing Device

Summary

- This 3D printing device includes a printing substrate, a movable printing head and a flexible printing space cover which, proceeding from the printing head, spans the printing substrate such that a closed printing space is formed between the printing head and the printing substrate.

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Publication No
- WO2020168590

Title
- 3D Printing Device, and Method for Preparing 3D Printed Structure

Summary
- Present invention discloses a 3D printing device, and a method for preparing a 3D printed structure. The device comprises a curing system, and a curing pattern player, a flat curing surface with de-wettability, and a receiving base.

Publication No
- WO2020168883

Title
- Method for Preparing Metal Powder Material

Summary
- The method features a simple process, to prepare a plurality of metal powder materials having different morphologies, including nano-, submicron-, and micron-scale metal power materials, and has a good application prospect in fields such as catalysis, powder metallurgy, and 3D printing.

Publication No
- WO2020168808

Title
- 3D Printing Tray, 3D Printing Device and Exposure Stripping Process

Summary
- The present disclosure relates to the technical field of 3D printing, and particularly relates to a 3D printing tray, a 3D printing device and an exposure stripping process. The 3D printing tray comprises a base, a release film, a piece of light-transmitting glass and a clamp plate.

Publication No
- US20200269507

Title
- Automatic Filament Changer

Summary
- A method and apparatus for automatic filament change out without interruption to a 3D print task. As a filament roll runs out of filament, the tail end is detected and an automatic filament changer selects and feeds a new strand of filament to a 3D printer's extruder.

Publication No
- WO2020171810

Title
- Controlling an Energy Source of an Additive Manufacturing System

Summary
- Present Invention relates to adjusting an energy source of a 3D printing system. A build bed of a 3D printing system is arranged to receive a layer of build material and the energy source of the 3D printing system is controllable to provide energy to a zone of the build bed.

Publication No
- US20200269505

Title
- Apparatus, System, and Method for Use in Three-dimensional Printing

Summary
- The present invention concerns a reservoir assembly for use in three-dimensional (3D) printing for building a 3D object, which includes a top frame and a tensioned film. The tensioned film may be air permeable and elastic, wherein surfaces of the tensioned film are micro textured so that the tensioned film becomes optically clear when it contacts with the liquid material. The tensioned film minimizes the creation of bubbles between the top and bottom surfaces. This also helps blurring the boundaries thereby enhancing the surface finish of the fabricated parts.

Publication No
- WO2020169261

Title
- 3D-Printing Injector Having Cooling Means

Summary
- The invention relates to a 3D-printing injector having an electrically controllable actuator and means for cooling, and thus for removing heat from the actuator.

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