VT IMPRESIÓN 3D 11

PATENTES

Vigilancia Tecnológica

3er trimestre 2022

NIPO: 116-19-050-9

En este Boletín de Vigilancia Tecnológica se recogen, de manera trimestral, los avances acontecidos en el campo de la tecnología de Impresión 3D que se materializa en forma de solicitudes de patente en todo el mundo.

Aunque en los años 80 comenzaron a desarrollarse los primeros equipos y materiales sobre la tecnología de impresión 3D también denominada fabricación aditiva, no fue hasta 1986 cuando aparece en el mercado la primera impresora 3D comercial, patentada por Charles W. Hull, premiado por la Oficina Europea de Patentes como inventor del año en 2014 en la categoría de inventores no europeos.

Cuando trataba de buscar un sistema para mejorar el proceso de realización de prototipos de pequeñas piezas de plástico que utilizaba para testar nuevos diseños de productos, desarrolló una máquina de impresión 3D que conseguía realizar en pocos minutos procesos que por aquel entonces llevaban semanas.

Contenido

PROCESOS

MATERIALES

DISPOSITVOS

PRODUCTOS

PROCESAMIENTO DE DATOS

Desde entonces, la tecnología no ha parado de evolucionar, especialmente en los últimos años, alcanzándose a partir de 2017 un verdadero auge, cuando se incorpora la automatización utilizando software de inteligencia artificial que permite industrializar la fabricación aditiva y multiplicar la capacidad de los sistemas.

En los últimos años de evolución de la impresión 3D hemos visto pasar del desarrollo conjunto de nuevas tecnologías y materiales innovadores aplicados principalmente a la creación de prototipos y diseños personalizados, a la consecución de productos casi impensables hace tan solo una década. Gracias a esta increíble tecnología hemos visto imprimir, órganos, coches e incluso edificios.

Desde la Oficina Española de Patentes y Marcas, y en cumplimiento de su doble objetivo de proteger y fomentar la innovación tecnológica en nuestro país, así como de divulgar la información técnica que contienen las patentes a través de sus servicios de Información Tecnológica, se realiza este nuevo Boletín de Vigilancia Tecnológica, que se suma a los dieciséis *Boletines VT* que venimos publicando desde el año 2000 con periodicidad trimestral. Nuestro objetivo es dar a conocer las nuevas solicitudes de patentes que se publican a nivel mundial relacionadas con la tecnología de impresión 3D.

En este Boletín, se incluye una selección de las solicitudes de patentes publicadas a nivel mundial durante el tercer trimestre de 2022, distribuidas en cinco apartados: procesos, materiales, dispositivos, productos y procesamiento de datos.

Para cada patente se incluye su número de publicación, con un enlace que permite la consulta del documento completo, el solicitante, el país de origen y su título.

Esperamos que la información aportada en este Boletín de Vigilancia Tecnológica, sirva para identificar tendencias tecnológicas y sus actores, así como para contribuir a la utilización del conocimiento contenido en los documentos de patente como punto de partida para emprender nuevas actividades de investigación y desarrollo. Para suscribirse a este Boletín basta con cumplimentar este *formulario de suscripción.*

Procesos

Nº PUBLICACIÓN	SOLICITANTE Y PAÍS DE ORIGEN	CONTENIDO TÉCNICO
ES2912414	UNIV INTERNACIONAL DE CATALUNYA FUNDACIO PRIVADA [ES]	Additive manufacturing method to produce structures of a beta titanium alloy with anisotropic elastic module and structures thus produced
EP4035804	XEROX CORP [US]; PALO ALTO RES CT INC [US]	System and method for improved infilling of part interiors in objects formed by additive manufacturing systems
EP4019161	K L CHEMICALS CO LTD [TW]	Method for binder additive manufacturing
CN114559653	NINGBO INTELLIGENT MANUFACTURING DIGITAL SCIENCE AND TECH LIMITED COMPANY	Photocuring 3D printing uniformity adjusting process method using cube matrix
US2022202591	UNIV KING ABDULAZIZ [SA]; NUTECH VENTURES [US]	3D printing of polymeric bioceramics for the treatment of bone defects
CN113977936	CHEN YANHONG	Cloth pattern three-dimensional printing method
CN113910596	NANJING BEISHENG TECH CO LTD	Method and system for 3D printing of cushion
CN114547714	BEIJING INDUSTRIAL UNIV	Manufacturing method of 3D printing goggles based on face photo synthesis model personalized customization
CN113925837	UNIV SICHUAN SCI & ENG	Method for preparing ibuprofen by applying 3D printing technology
WO2022147625	NAT RES COUNCIL CANADA [CA]	A method for correcting ray distortions in tomographic 3D printing
CN113787707	SHENZHEN CREALITY 3D TECH CO LTD	Multi-color 3D printing method, printer, printing equipment and computer storage medium
KR102412299	3DMATERIALS CO LTD [KR]	3D Inkjet type 3D printing process using urea interaction
WO2022131911	ULTIMAKER BV [NL]	Infill structure with increased z-strength
WO2022122745	BOSCH GMBH ROBERT [DE]	Method for manufacturing a three-dimensional object, and apparatus for 3D printing
US2022189656	APTIV TECH LTD [BB]	Wiring harness assembly having multiple separated conductors embedded within a substrate
EP4015194	BOND HIGH PERFORMANCE 3D TECH B V [NL]	Extrusion-based additive manufacturing method and 3D printing system
CN114311654	CHENGDU AIRCRAFT INDUSTRY GROUP LTD LIABILITY COMPANIES	Metamaterial wave-absorbing structure based on 3D printing technology and preparation method and application thereof
DE102021000576	BUNDESREPUBLIK DEUTSCHLAND VERTR DURCH DAS BUNDESMINISTERIUM DER VERTEIDIGUNG VERTR DURCH DAS BUNDES [DE]	3D printing method for producing a component with electrically conductive layers

Nº PUBLICACIÓN	SOLICITANTE Y PAÍS DE ORIGEN	CONTENIDO TÉCNICO
EP4035896	PIASECKI MACIEJ [PL]	A method of manufacturing composite elements with a hybrid structure, the print head for their manufacturing, and the composite element of a hybrid structure
CN114147955	XIANGSAN TRAFFIC UNIV	Thermoplastic dielectric functional gradient composite material as well as preparation method and application thereof
EP4029674	COVESTRO DEUTSCHLAND AG [DE]	Additive manufacturing method
EP4020382	RICOH CO LTD [JP]	Evaluation method
CN114633468	SUZHOU NANOTECHNOLOGY AND NANO BIONIC RES INSTITUTE OF CHINESE ACADEMY OF SCIENCES	Method for preparing three-dimensional aramid fiber aerogel through suspension 3D printing and application
KR102441901	UNIV SEOUL NAT SCI & TECHNOLOGY RES	Stereoscopic 3D printing method for control material properties
RU2771391	FEDERALNOE GOSUDARSTVENNOE AVTONOMNOE OBRAZOVATELNOE UCHREZHDENIE VYSSHEGO OBRAZOVANIYA NATSIONALNYJ [RU]	Method for producing a three-dimensional auxetic with a cellular structure (variants)
EP4046777	HUVITZ CO LTD [KR]; HUVITZ OSSVIS CO LTD [KR]	Method for improving lifespan of lcd of a msla 3D printer
WO2022162260	UNIV VIGO [ES]	Photothermal response and shape memory 4D biomedical devices based on composites comprising pla and graphene
CN114699559	UNIV PEKING THIRD HOSPITAL	Construction method of cartilage scaffold
US2022258244	RAYTHEON CO [US]	Waveguide fence support
US2022249866	ADAPTIIV MEDICAL TECH INC [CA]	Patient-specific immobilization structure and system and method for fabrication thereof
CN114642764	SHENZHEN ADVANCED TECH RESEARCH INSTITUTE OF CHINESE ACADEMY OF SCIENCES	Bone tissue engineering shape-divided stent construction method
WO2022145743	MICROFIT CO LTD [KR]	Method for producing three-dimensional blood-brain barrier structure of blood-brain barrier organ-on-a-chip using reverse rapid liquid printing, and blood-brain barrier organ-on-a-chip comprising same
US2022212015	MEDTRONIC INC [US]	Surgical system and methods of use
WO2022147351	NANO DIMENSION TECH LTD [IL]; THE IP LAW FIRM OF GUY LEVI LLC [US]	Electromagnetic band gap element structure and fabrication methods
WO2022131037	KOBE STEEL LTD [JP]	Molded object manufacturing method and molded object
GB2604174	WAYLAND ADDITIVE LTD [GB]	Method of monitoring and influencing an additive layer manufacturing process
US2022258239	FIAT RICERCHE [IT]	Method for applying a reinforcement of metal material to a component of metal material, particularly in the construction of a motor-vehicle body or a sub-assembly thereof
WO2022153004	SAFRAN [FR]	Improved method for manufacturing a part by additive manufacturing

VOLVER A CONTENIDO

Materiales

Nº PUBLICACIÓN	SOLICITANTE Y PAÍS DE ORIGEN	CONTENIDO TÉCNICO
WO2022163524	TORAY INDUSTRIES [JP]	Resin powder mixture, method for producing same, and method for producing three-dimensional model
US2022204802	UNIV CALIFORNIA [US]	Hydrogels having tunable cross-linking densities and reversible phase transitions and methods for their use
WO2022150045	HEWLETT PACKARD DEVELOPMENT CO [US]	Three-dimensional printing with ductility agents
US2022243002	PROMERUS LLC [US]	Long shelf life stable photoactive mass polymerizable polycycloolefin compositions as optical materials
WO2022164790	DESKTOP METAL INC [US]	Improved interface material formulations for additive fabrication
CN114536744	PEI FENG	Space architecture composite material based on multi-material 3D printing technology
CN114524992	CHINESE PETROCHEMICAL INDUSTRY LTD COMPANY; BEIJING YANSHAN PETRIFACTION HIGH TECH LLC	Polypropylene composition, selective laser sintering product and preparation method thereof
JP2022100471	BEIJING YANSHAN PETRO-CHEM CORP INST; CHINA PETROLEUM & CHEM CORP	Polylactic acid resin composition
WO2022163358	NAGASE CHEMTEX CORP [JP]	Resin composition for three-dimensional photoshaping
CN113929869	(A) UNIV SICHUAN	Two-component polyurea material for 3D printing and method for 3D printing of polyurea product
JP2022104869	MITSUBISHI CHEM CORP	Three-dimensional modeling material having good formability by a three-dimensional printer
WO2022136717	UNIV CADIZ [ES]	Composite material for use in stereolithography and production method
WO2022136211	AGFA GEVAERT NV [BE]	Nir absorbing inkjet ink, method of recording
US2022177373	HRL LAB LLC [US]	Formulations with active functional additives for 3D printing of preceramic polymers, and methods of 3D-printing the formulations
PL434871	UCZELNIA PANSTWOWA IM SZYMONA SZYMONOWICA W ZAMOSCIU [PL]	Method for producing filaments with properties dedicated for 3D printers
FR3117399	EURENCO FRANCE [FR]; INST FRANCAIS TEXTILE & HABILLEMENT [FR]	Process for obtaining structures based on nitrocellulose by additive manufacturing
WO2022123185	ARKEMA FRANCE [FR]	Suspension polymerization of alkoxyamines with styrenic and (meth)acrylic monomers
US2022251399	MOLINARI MIKE [US]	Variable color 3D printer material using reversible thermochromic additive
CN114681677	THIRD HOSPITAL OF BEIJING UNIV THIRD CLINICAL MEDICAL COLLEGE OF BEIJING UNIV	Cartilage scaffold material and application thereof in cartilage scaffold construction

Nº PUBLICACIÓN	SOLICITANTE Y PAÍS DE ORIGEN	CONTENIDO TÉCNICO
CN114686732	NORTHERN NAVIGATION SICHUAN WESTERN INTERNATIONAL INNOVATION HARBOR SCIENCE AND TECH LIMITED COMPANY	High-temperature alloy repair material and preparation method thereof, and additive remanufacturing method and re-service evaluation method of high-temperature alloy repair part
CN114574739	GUIZHOU SPACEFLIGHT NEW FORCE SCIENCE AND TECH LIMITED COMPANY	3D printing aluminum-lithium alloy and application thereof
WO2022138233	FUKUDA METAL FOIL & POWDER CO LTD [JP]	Copper alloy powder for additive manufacturing and method for evaluating said copper alloy powder, method for producing copper alloy additively-manufactured article, and copper alloy additively-manufactured article
US2022212993	TECHNION RES & DEVELOPMENT FOUND LTD [IL]	Paste comprising amorphous calcium carbonate and dry 3D models prepared therefrom
WO2022123411	BEAMIT S P A [IT]	A Al-Ti-Cu-Mg-B-Ni-Fe-Si alloy for additive manufacturing
WO2022124359	SANYO SPECIAL STEEL CO LTD [JP]	Shaped body formed of powder
WO2022187308	KANDASAMY KUMAR [US]	Processes and/or machines for producing continuous plastic deformation, and/or compositions and/or manufactures produced thereby
WO2022168914	HITACHI METALS LTD [JP]	Ni-based alloy powder for lamination molding, lamination molded article, and lamination molded article manufacturing method
WO2022145077	KAO CORP [JP]	Metallic fine particle-containing ink

VOLVER A CONTENIDO

Dispositivos

Nº PUBLICACIÓN	SOLICITANTE Y PAÍS DE ORIGEN	CONTENIDO TÉCNICO
ES2915404	UNIV LA LAGUNA [ES]	Pressure measuring piston for three dimensional (3D) printers in extrusion of semi-solid masses, has mobile cylinder, central cylinder, pressure sensor and final area for attachment to container containing material to be extruded
WO2022125881	CARBON INC [US]	Forming three-dimensional object by providing apparatus comprising carrier, light transmissive window having build surface, vertically reciprocating carrier with respect to build surface in upstroke and downstroke, and irradiating build region with light through light transmissive window
WO2022131911	ULTIMAKER BV [NL]	Fused filament fabrication printer instructions creating method for printing infill structure of three-dimensional object, involves creating instructions for printing layer with traces running parallel to traces of another layer
DE102021103739	TE CONNECTIVITY GERMANY GMBH [DE]	Additive manufacturing system for simultaneous additive manufacturing multiple workpieces, comprises multiple manufacturing stations to carry out manufacturing step in each case, with laser beam coupling
WO2022174158	DESKTOP METAL INC [US]	Meniscus material composition used for liquid metal jetting in metal drop-on-demand printers, comprises meniscus formed on opening of nozzle, and alloying element comprising strontium, magnesium and/or zinc
DE102021200791	VOLKSWAGEN AG [DE]	Process arrangement to perform powder-based three dimensional printing, has printing station in which component can be produced in construction chamber in layered structure, and gripper unit to hold or remove component
DE102021101846	RWTH AACHEN [DE]	Method for additive manufacturing of metallic components, involves temperature-controlling component during build-up of layer or to build-up of layer and before build-up of further layer depending on locally resolved measured temperature value or cooling curve
DE102021200730	VOLKSWAGEN AG [DE]	Method for additive manufacturing of component from shapeless material, involves displaying item of information relating to property of structure produced additively during production of component in visual area of operator in visually perceptible manner by visualization device

Nº PUBLICACIÓN	SOLICITANTE Y PAÍS DE ORIGEN	CONTENIDO TÉCNICO
KR20220077425	LISSOTSCHENKO VITALIJ [DE]	Device for generating electron beam for three dimensional printing device, has deflection unit for deflecting electron beam having passed through opening of anode electrode, so that extension in line length direction is reduced
DE102021100057	XERION BERLIN LABORATORIES GMBH [DE]	Device for producing metallic and/or ceramic parts, comprises printer unit having layers of metallic or ceramic printed part made from filament of metal or ceramic powder mixed with binder, printing plate, and furnace including controller
WO2022150564	VULCANFORMS INC [US]	Additive manufacturing system, has optical phased array operatively coupled to laser energy sources, and Risley prism assembly comprising set of wedge prisms and directing laser energy towards build surface
DE102022100154	XEROX CORP [US]	Three-dimensional printer for printing three-dimensional object, comprises ejector with nozzle, heating element for heating solid in ejector that changes solid into liquid, coil, power source, substrate control motor, and vibration source
WO2022146991	IPG PHOTONICS CORP [US]	High-speed system for modulating line beam of light with microelectro-mechanical-system (MEMS), has modulation profile of projected image of modulated line beam profile corresponds to desired pixel array modulation profile
WO2022140688	UNIV CORNELL [US]	Additive manufacturing system comprises enclosure defining inlet, exhaust, and aperture and comprising substrate upon which workpiece is to be formed and optically transparent support, pulsed laser, feedstock, and feedstock advancement device
FR3118597	EPEIRE3D [FR]	Printing machine for designing three-dimensional printed unit, has reception tray provided below printing device, printing booth that comprises extraction mouth on walls, extraction mouth configured to be permanently positioned below reception tray
DE102020216123	ZEISS CARL AG [DE]	Exposure device for additive manufacturing of workpiece, comprises radiation source to generate non-rotationally symmetrical exposure area on exposure surface, and scanning unit for lateral movement of exposure area along exposure path
DE102020133402	3DBIZZ UG HAFTUNGSBESCHRAENKT [DE]	Switching unit for selectively transmitting torque from drive shaft to selector shaft of conveyor system for conveying material for additive manufacturing, has decoupling device that is designed to provide selective decoupling of drive shaft from transmission output
EP4008523	LITHOZ GMBH [AT]	Layered construction of component from photopolymerizable material, E.G. resin with ceramic or metallic filler, by forming component layers on top of each other, and lowering construction platform into material layer

Nº PUBLICACIÓN	SOLICITANTE Y PAÍS DE ORIGEN	CONTENIDO TÉCNICO
WO2022171875	ULTRA HIGH TEMPERATURE PROCESSES LTD [IE]	Device for use making tubular composite body E.G. filter, has moving unit moving movable structure upwards in direction parallel to axis of platform, and guiding unit guiding external and internal cylinders
DE102021201169	MTU AERO ENGINES AG [DE]	Avoiding resonance damage during cleaning of partially additively manufactured component of turbomachine from powder residues of additive layer construction method using cleaning device, machine plate and additively manufactured component
KR102429812	CHA KI RYONG [KR]	Extruder for three-dimensional printer, has control unit controlling rotation speed of drive motor and heating temperature of heating block according to type of material input through input unit, and heat dissipation unit provided in form
WO2022137641	FUJIKURA LTD [JP]	Method for manufacturing optical computation device, involves forming photo-diffractive element on one main surface of bottom wall by irradiating vicinity of interface between bottom wall and liquid material with light to cure photo-curable resin
FR3118600	EPEIRE3D [FR]	Three-dimensional printing device of three-dimensional printing machine, has circulation chamber that includes outlet arranged on downstream side of delivery conduit and oriented so as to eject heated gaseous fluid without interfering with print head and with space external surrounding nozzle outlet
US2015140145	MAKERBOT IND LLC [US]	Device such as extruder for use with three-dimensional printer, has extrusion head that is moveably coupled to housing to permit movement of extrusion head within housing parallel to axis of feedpath
WO2022148935	EPEIRE3D [FR]	Three-dimensional printing device for stabilizing internal temperature of print head and external temperature at nozzle outlet, has print head fitted with nozzle through which stream of molten material emerges, and thermal insulation system
WO2022172322	FUJI CORP [JP]	Three-dimensional modeling apparatus for forming three-dimensional object e.g. figure, has modeling unit that models three-dimensional model on pallet placed on stage, and transfer device to transfer pallet from stage using pair of arms that support side edges of pallet facing each other
DE102021104076	MUEHLBAUER TECH GMBH [DE]	Device for cleaning three-dimensional printed object e.g. dental prosthesis, has control device which is designed to determine cleaning capacity of cleaning agent from optical density predetermined characteristics for combination of cleaning agent and light-curing resin formulation

Nº PUBLICACIÓN	SOLICITANTE Y PAÍS DE ORIGEN	CONTENIDO TÉCNICO
KR102408777	KOREA INST MACH & MATERIALS [KR]	Powder melting type three-dimensional printer has milling unit that is arranged spaced apart from sweep unit at set distance from one side of housing and milling sintered powder after melting into predetermined shape
DE102021104659	DYEMANSION GMBH [DE]	Treating molded part useful as element for three-dimensional printing, comprises contacting molded part with solvent-A and forming concentration gradient on surface of molded part
KR102442916	ECO WORLD FARM [KR]	Three-dimensional bioprinter for use with a rotary print head, comprises multiple syringe holders that are formed in a ring shape to hold multiple syringes and a central shaft is connected between the syringe holder and the central shaft
US2022281007	PALO ALTO RES CT INC [US]	Build plate for an additive manufacturing device, comprises base and sacrificial plate coupled with the base, where etch rate of the sacrificial plates in etchant is greater than an etched rate of base in the etchant
US2020406546	HAMILTON SUNDSTRAND CORP [US]	System for removing powder from additive manufacturing systems, has powder drain below containment volume that receives powder dropping, and source of wetting agent that is provided in fluid communication with the powder collection volume
US2022281005	KANDASAMY KUMAR [US]	Producing extruded material from feedstocks for use in machine, involves feeding deformable solid-state first feedstock, continuously extruding stirred material from cavity through dies to generate material, where rotor defines rotational axis about which rotor is rotated
WO2022181634	TORAY INDUSTRIES [JP]	Method for manufacturing three-dimensional shaped article by powder floor melt bonding system, involves laminating resin powder and granular material, and giving thermal energy to resin powder and granular material, and selectively melting and sintering resin powder
US2020031051	INTREPID AUTOMATION [US]	Additive manufacturing system E.G. photo reactive three-dimensional (3D) printing system (PRPS), has stack of filters that comprises warp correction filter that provides geometric correction and edge blending bar at sub-image edges

VOLVER A CONTENIDO

Productos

Nº PUBLICACIÓN	SOLICITANTE Y PAÍS DE ORIGEN	CONTENIDO TÉCNICO
EP4029675	BOSTIK SA [FR]	3D-printing methods and systems
CN113895027	UNIV PEKING 3RD HOSPITAL PEKING UNIV 3RD CLINICAL MEDICAL COLLEGE	Personalized knee joint local tissue partition shaping system and method based on 3D printing
WO2022139677	NEOLT ASIA PTE LTD [SG]	Synthetic resin article and method of fabrication thereof
US2022168947	EATON INTELLIGENT POWER LTD [IE]	Thermally Conductive Thermoplastics for Fused Filament Fabrication
US2022222468	FORD GLOBAL TECH LLC [US]	Additive manufacturing counterfeiting obfuscation
WO2022103331	UNIV NANYANG TECH [SG]	Polymeric products formed using polybenzoxazines suitable for use in additive manufacturing
CN114664163	FIRST PEOPLE HOSPITAL IN YANCHUAN CITY	Female pelvic floor ultrasonic model and preparation method thereof
CN114848184	GUANGZHOU RITON BIOMATERIAL CO LTD	Portable orthodontic appliance
CN114715329	UNIV JILIN	Biomimetic heterogeneous pressure-resistant structure for unmanned underwater vehicle and its additive manufacturing method
CN114632944	UNIV WUHAN	Multi-energy-field-based dissimilar material additive manufacturing method
CN114532413	JIANGSAN UNIV	Emulsion gel for 3D printing of fat substitute and preparation method thereof
CN217066710	GUANGDONG ACAD SCI MEDICINE & HEALTH INS	3D printing brackets for treating bone tissue defects
US2022250203	APPLIED MATERIALS INC [US]	Structures formed using an additive manufacturing process for regenerating surface texture in situ
CN114840895	UNIV CHINA THREE GORGES	Side slope greening engineering construction
CN216702600	ORAL HOSPITALS OF TIANJIN ORTHOPAEDIC SURGERY HOSPITAL OF TIANJIN AND ORAL HOSPITALS OF NANKA UNIV	Maxilla extending osteotomy guide plate
CN217150853	CHINA RAILWAY CONSTR GROUP CO LTD	Swimming pool roof made by 3D printing process
CN217123079	SHANGHAI FOURTH REHABILITATION HOSPITAL	3D printed handle
WO2022164146	AON CO LTD [KR]	Artificial dental root, artificial bone, and manufacturing method thereof
WO2022146285	TUSAS TURK HAVACILIK VE UZAY SANAYII ANONIM SIRKETI [TR]	An absorber
CN217034499	JIANGSU BEECORE HONEYCOMB TECHNOLOGY CO	3D printing based Fresnel screen
KR20220104945	UNIV HALLYM IACF [KR]	Support of cervical vertebra for surgical operation

Nº PUBLICACIÓN	SOLICITANTE Y PAÍS DE ORIGEN	CONTENIDO TÉCNICO
EP4029677	T A SYSTEMS INC [US]; STOLTZ HENDRIK [US]; BROWN THEODORE ROBERT [US]; TODOROVIC MISO [CA]	Bracket presenter for ultrasonic welder
US2022239998	SONY INTERACTIVE ENTERTAINMENT LLC [US]	Headphone ear pad to optimize comfort and maintain sound quality
CN114533352	SUZHOU ZHENXINGYA TECH CO LTD	Carotid artery 3D printing degradable stent
US2022175494	ALIGN TECHNOLOGY INC [US]	Palatal expanders and methods of expanding a palate
WO2022129785	SAFRAN [FR]	Plate heat exchanger comprising profiled guide elements
WO2022128343	STRAUMANN INST AG [CH]	Ceramic dental implant

VOLVER A CONTENIDO

Procesamiento de Datos

Nº PUBLICACIÓN	SOLICITANTE Y PAÍS DE ORIGEN	CONTENIDO TÉCNICO
US11295513	ABLE HANDS REHAB PC [US]	Method for generating custom hand brace for patient, involves deforming interior surface of initial hand brace model into alignment with exterior surface of three-dimensional hand model, and queuing model for fabricating
JP2022115799	NIKKON CORP [JP]	Processing system for processing object, has machining device that performs addition processing with respect to first object and second object which is different from object of first object in several objects
JP2022112234	FUJI CORP [JP]	Apparatus for manufacturing three-dimensional (3D) molded article, has display processing unit that displays three dimensional model of 3D molded article on display, and displays 3D model of modeling unit in display
US2019102880	ALIGN TECHNOLOGY INC [US]; HO KWAN [US]; SHAH PAREN INDRAVADAN [US]; SAMBU SHIVA P [US]; SOLTERO ENRIQUE [MX]	Method for inspecting customized orthodontic aligner of manufacturing defects in manufacturing custom products, involves outputting output associated with determination of whether there is manufacturing defect
US2018326666	L LIVERMORE NAT SECURITY LLC [US]	Method for manufacturing three-dimensional object using computed tomography, involves providing optical projections with three-dimensional intensity distribution to cure or remove selected portions of volume of photo-responsive resin
US2022234279	PALO ALTO RES CT INC [US]	System for interactively designing support structure for three-dimensionally printed object, has processor that transmits support layout, printing orientation, and digital model to three-dimensional printer
US2022234297	STATE FARM MUTUAL AUTOMOBILE INSURANCE CO [US]	Method for generating partial material replacement, involves sending request to generate replacement material for material that correlates with original material and generating replacement material by manufacturing replacement material

Nº PUBLICACIÓN	SOLICITANTE Y PAÍS DE ORIGEN	CONTENIDO TÉCNICO
US2022219400	B9CREATIONS LLC [US]	Method for calibrating factors to correct hardware deviation in image system of additive manufacturing device, involves performing validation print to verify that manufacturing device is calibrated correctly based on corrected locations
US2022193987	FORMLABS INC [US]	Method for detecting contaminated region of film in additive fabrication device for fabricating solid objects, involves emitting light from light source included in movable stage, where movable stage is provided to move in first direction with respect to additive fabrication device
US2022184895	ROSEMOUNT AEROSPACE INC [US]	Method for determining speed of energy source translatable within region of additive manufacturing system, involves sensing change in electrical signal of electrical circuit associated with modifying electrical circuit
DE102021214709	MITSUBISHI HEAVY IND LTD [JP]	Control device E.G. computer system of modeling apparatus for modeling three-dimensional model object, has correction unit which performs correction modeling, in case where modeling layer is composed of lacking portion in which stacked height is not within range
KR20220082311	MOON WOO HO [KR]	Method for correcting error of three-dimensional printing, involves calculating cross-sectional area data for arbitrary layer of printing object by computer system from original digital data, and performing output operation of printer
US2022199233	MATSUMURA TAKASHI [JP]; NIIMI TATSUYA [JP]; SAITO TAKUYA [JP]; RICOH CO LTD [JP]	Method for evaluating accuracy of model i.e. human organ model, containing hydrogel with respect to organism, involves evaluating accuracy of model containing hydrogel with respect to organism based on organism shape information
JP2022086983	RICOH CO LTD	Method for manufacturing three-dimensional shaped object E.G. wig, involves deforming shape of area exceeding threshold value set by ratio of width in whole plane diagram along surface shape of whole solid shape
US2022258247	SEURAT TECH INC [US]	Additive manufacturing system, has phase patterning unit for receiving and altering phase of beam from one of two high power lasers, where mixing of phase patterned beam with another beam occurs at print bed

VOLVER A CONTENIDO