

NIPO: 116-19-020-3

En esta nueva andadura del Boletín de Vigilancia Tecnológica del Sector Transformador Plástico que comenzó el primer trimestre de 2021, la Oficina Española de Patentes y Marcas (OEPM) ha iniciado una nueva colaboración con AIMPLAS, Instituto Tecnológico del plástico que se encuadra dentro de una de las actividades de colaboración que la OEPM viene llevando a cabo con diferentes centros tecnológicos para hacer llegar a las empresas e investigadores que los integran, con periodicidad trimestral, una selección de las patentes más recientemente publicadas en el sector de transformación de los materiales plásticos.

AIMPLAS es un Centro Tecnológico con más de 30 años de experiencia en el sector del plástico que aporta soluciones a las empresas, en toda la cadena de valor, desde fabricantes de materia prima a transformadores y usuarios finales. A través de la I+D+i contribuye a resolver los retos que se plantea la sociedad en relación a los plásticos, para mejorar la calidad de vida de las personas y asegurar la sostenibilidad medioambiental.

La Oficina Española de Patentes y Marcas tiene como misión impulsar la innovación y compartir sus resultados como valores y activos de diferenciación y desarrollo tecnológico. Por ello sus dos objetivos principales son proteger la innovación tramitando distintos títulos de propiedad industrial y difundir la información técnica contenida en las patentes a través de sus servicios de Información Tecnológica, uno de ellos estos Boletines.

Como novedad de esta etapa, se reestructura el contenido del Boletín, intentando reflejar la realidad en propiedad industrial de la Industria del Plástico desde el punto de vista de nuevos productos en los principales sectores de aplicación, desarrollos que contribuyen al desarrollo sostenible, mejoras de procesos productivos y nuevos materiales plásticos con propiedades avanzadas. No se ha incluido en este Boletín información sobre la tecnología de impresión 3D, ya que esta aparece recogida en el [Boletín de Vigilancia Tecnología Impresión 3D](#) que la OEPM comenzó a publicar en el 2020 .

A través de las imágenes que representan cada sección y que aparecen en la portada del Boletín, se accede de forma directa a los contenidos de las mismas, donde encontraremos el número de publicación de cada patente, quien la solicita, una pequeña descripción de la invención y el enlace de acceso al texto completo del documento. De forma complementaria, se incluye una selección de novedades extraídas del Observatorio del Plástico junto con noticias sobre actividades relevantes de la OEPM.

Si se desea recibir este Boletín periódicamente basta con cumplimentar el correspondiente [formulario de suscripción](#)

Contenido



NUEVOS PRODUCTOS

SOSTENIBILIDAD Y
ECONOMÍA CIRCULARNUEVOS PROCESOS
INDUSTRIALESMATERIALES CON
PROPIEDADES AVANZADAS
O MEJORADAS

En el último trimestre, desde Europa se han aprobado cerca de 70 proyectos relacionados con la industria del plástico, los cuales ya están en ejecución o comenzarán a ejecutarse en los próximos meses. Las investigaciones financiadas giran principalmente en torno a 3 grandes bloques conceptuales: nuevos desarrollos, reciclado y gestión de residuos y proyectos de estudios sobre microplásticos. A continuación, se indican los más destacados para cada sección:

NUEVOS DESARROLLOS

SusBioLIG (Wearables) <https://cordis.europa.eu/project/id/101032167>

VIT - Polymer engineering via molecular design: embedding electrical and optical properties into VITrimers <https://cordis.europa.eu/project/id/101008237>

ScalePlantProt - Understanding phase behaviour in plant proteins for large scale production of films and microcapsules <https://cordis.europa.eu/project/id/101023947>

Sustainable - Library of inedited bio-based multicomponent resins for the 3D-printing of self-healing, recyclable thermosets. <https://cordis.europa.eu/project/id/101021859>

TemGPC - Thermal and mechanical behaviours of geopolymer concrete at elevated temperatures <https://cordis.europa.eu/project/id/101022142>

FuelHydrogel - Constructing chemically fueled hydrogels of polymers <https://cordis.europa.eu/project/id/101031072>

DISCOSH - The Impact of Polymer Dispersity and Monomer Sequence on Self-healing and Photodegradation of Dynamically Crosslinked Polymers <https://cordis.europa.eu/project/id/101030516>

CiMaC - Circular Thermoset Materials: How to exploit Precision Engineered Macromolecules in their Bottom-up Design? <https://cordis.europa.eu/project/id/101021081>

RECICLADO Y GESTIÓN DE RESIDUOS

Agro2Circular TERRITORIAL CIRCULAR SYSTEMIC SOLUTION FOR THE UPCYCLING OF RESIDUES FROM THE AGRIFOOD SECTOR <https://cordis.europa.eu/project/id/101036838>

CCLEANER - Develop, design and evaluate a sustainable marine litter-to-methanol process <https://cordis.europa.eu/project/id/101025906>

REWIND - ENZYMATIC RECYCLING OF WASTE COOKING OILS FOR THE PLASTIC INDUSTRY <https://cordis.europa.eu/project/id/101031186>

BIOP - Upcycling plastic wastes: biopolymers for a circular economy <https://cordis.europa.eu/project/id/101022598>

EcoFISHent - Demonstrable and replicable cluster implementing systemic solutions through multilevel circular value chains for eco-efficient valorization of fishing and fish industries side-streams <https://cordis.europa.eu/project/id/101036428>

MICROPLÁSTICOS

Microplastine - Microplastic removal from water using purposely-designed biodegradable gelatine hydrogels <https://cordis.europa.eu/project/id/101029810>

PlastiSol - Quantification of the participation of soils in the microplastic pollution cycle and evidence based model analysis of atmosphere to ocean soil microplastic interaction <https://cordis.europa.eu/project/id/101023635>

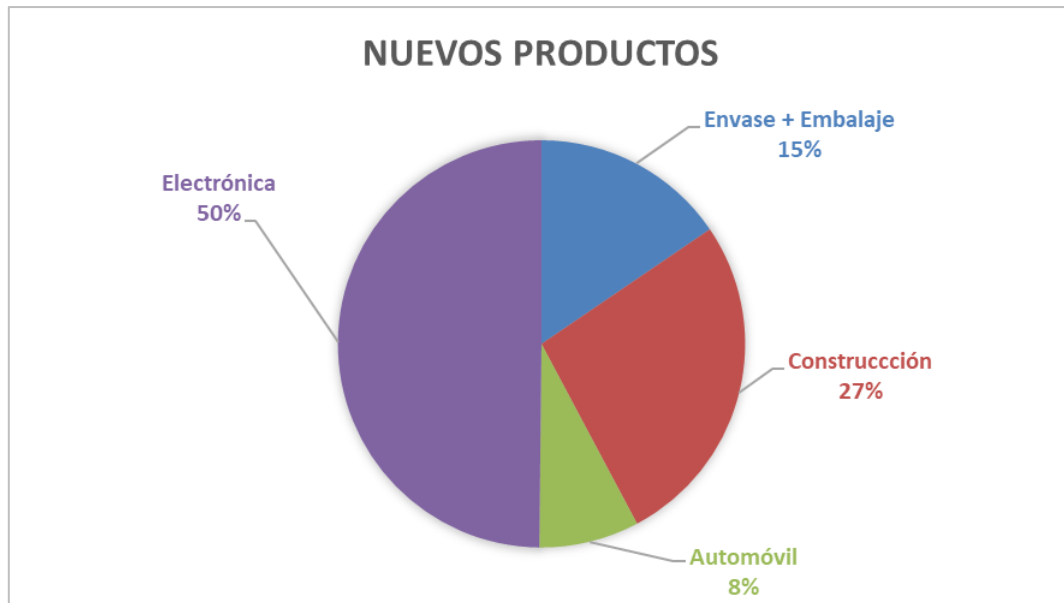
AppMarie - Studying the combined effect of microplastics, pesticides and global warming on the sea urchin: a multidisciplinary approach to protect marine ecosystems <https://cordis.europa.eu/project/id/101027681>

SCRAP - Plastic litter in macrophyte system: environmental fate and ecological implications
<https://cordis.europa.eu/project/id/101029198>

MS4PLASTICS Mass spectrometry for the characterization of micro- and nanoplastics
<https://cordis.europa.eu/project/id/101023205>

NUEVOS PRODUCTOS

En el siguiente gráfico se muestra la distribución de las 18.405 familias de documentos de patente recuperadas en este trimestre en el apartado de Nuevos Productos. Como se observa más de la mitad se refieren al campo de la electrónica.



Las siguientes tablas muestran una selección de los documentos más representativos, junto con un enlace directo a la base de datos Espacenet, el solicitante y una breve descripción de la invención.

Envase y Embalaje

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|--|
| JP2021138133 | (MITU) MITSUBISHI CHEM CORP | Film used as heat-shrinkable label, contains antistatic agent-containing layer having preset band voltage half-life, and has preset static friction coefficient, haze and shrinkage rate in main shrinkage direction when immersed in warm water |
| WO2021168581 | (IMPA-N) IMPACTFUL HEALTH RES & DEV INC | Packaging film useful in packaging product comprising films, trays and solid backing, and perishable item e.g. food, chemicals and plants, comprises polymer film having surface, and antimicrobial agent chemically linked to the surface |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|---|
| JP2021127429 | (SAKN) SAKATA INKS CO LTD | Printing ink composition used for forming easy-tear laminate, contains polyfunctional isocyanate compound comprising trifunctional isocyanate compound, and binder resin e.g. polyurethane resin comprising reactive group capable of reacting with isocyanate group of isocyanate compound |
| WO2021166911 | (MITU) MITSUBISHI CHEM CORP | Laminate used for shampoo packaging, consists of base material and resin layer formed from thermosetting or active-energy-ray-curable resin composition, and includes outermost surface with unevenness comprising wrinkle structure, on one surface side of base material |
| EP3864997 | (COSM-N) COSMAR CONSULTING DI LUCIO MARIOTTI SAS | Container for beauty products or cosmetic products, comprises two sections, closable one above the other, and single-piece and open container for containing cast or compact products that are subsequently inserted in make-up bags |
| US2019275781 | (NOVI-N) NOVIPAX LLC | Absorbent pad for food package has outer layers comprising permeable or non-permeable film, third layer fixed with chemical agent or system being either activated by contact with or soluble in liquid, and fourth layer comprising fluff |
| WO2021154209 | (AMCO-N) AMCOR RIGID PACKAGING USA LLC | Method for forming container and filling container with product, involves displacing base of container after hot-filling and capping to reduce total interior volume by less than specific value |
| WO2021145763 | (HUHT-N) HUHTAMAKI MOLDED FIBER TECHNOLOGY BV | Biodegradable multi-layer packaging element, such as a foil or wrap, for food packaging unit of food product comprises multi-layer comprising inner cover layer comprising biodegradable aliphatic polyester, and outer cover layer |
| BR202019027010 | (RODR-I) RODRIGUES D O Z | Package for use with coupled straw for packaging of juice, beverages and liquids, is provided with four-pack type, and is made of plastic, where package is developed in similar materials, and straw attached to interior is internally fixed |
| WO2021136828 | (AIRN-N) AIRNOV INC (BOIS-I) BOIS D (LEBO-I) LEBON J (LOGE-I) LOGEL V | Gas-permeable element for closing receptacle base, has porous membrane portion that extends across second end of tubular projection while attached to distal edge surface at periphery |
| WO2021134486 | (FREP) FRESENIUS MEDICAL CARE DEUT GMBH (FRES-N) FRESENIUS MEDICAL CARE R & D SHANGHAI CO | Medical-fluid-container for use as e.g. bag for administration of medical-fluids, has hand-held tool that is provided to open tube-seal, where hand-hand-held hand-operated tool is attached to container |
| AU2021203660 | (COKE) COCA-COLA CO | Making bio-based polyethylene terephthalate (PET) used to recycle bio-based PET packaging in e.g. software and firmware comprises forming PET component from bio-based material and processing the bio-based PET component into bio-based PET |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--|---|
| ES2825203 | (SAIZ-I) MUNOZ SAIZ M | Aseptic protective system for bottles and cans beverages and soft drinks against germs and dirt, has protective cover formed at end or mouth of bottles or cans of beverages and soft drinks, where protective elements include covers or caps |
| US2021147129 | (BEMI) BEMIS CO INC | Drug resistant, flexible, multilayer packaging film used in packaged pharmaceutical product has drug contact layer having ethylene norbornene copolymer, polyolefin bulk layer, first and second intermediate adhesive layers, oxygen barrier layer and exterior protective layer comprising e.g. paper |
| US2021190742 | (BRKS) BRASKEM SA | Encapsulated indicator used in intelligent polymer composition and packaging material in food packaging industry, comprises silica matrix encapsulating acid-base indicator, where acid-base indicator is present in basic form |
| WO2021116852 | (NIVE) NICOVENTURES TRADING LTD (HOLT-I) HOLTON D E | Pouched material used for human use, comprises outer water-permeable pouch defining cavity, and dissolvable oral composition positioned in cavity |

Construcción Tejados

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--|--|
| WO2021163009 | (DTIL-N) DAL TILE CORP | Porcelain roof tile for use in roof covering, has reinforcing element attached to lower surface of ceramic body, and support layer provided below reinforcing element, where support layer comprises solid polymer composite |
| WO2021158997 | (CHRO-N) CHROMATIC TECHNOLOGIES INC | Temperature indicator used in roofing membrane, comprises reversible color-changing system comprising dye, developer variably interacts with dye according to temperature of color-changing system, and solvent, in which dye and developer dissociates upon exposure to temperature threshold |
| EP3868554 | (SIKA) SIKA TECHNOLOGY AG | Expanded polystyrene board used in roof construction, comprises expanded polystyrene and scrim comprising nonflammable or hardly flammable material and is attached to expanded polystyrene, and arranged on surface of expanded polystyrene |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|---|
| WO2021144580 | (HEAT-I) HEATON L L M | Forming light transitive composite component, where component is used as non-load bearing structural or semi-structural components such as an infill wall panel or roof tile, involves inserting light-transmitting component into mold |
| EP3838589 | (CONT-N) CONTINUUS MATERIALS INTELLECTUAL PROPERT (CONT-N) CONTINUUS MATERIALS INTELLECTUAL PROPERTY LLC (CONT-N) CONTINUUS MATERIALS INTELLECTUAL PROPERTY | Cover board product with panel used for roofing applications, comprises top and bottom surface layer, and core layer comprising paper fragments and polypropylene fragments connected by thermoplastic bonding resin attached in random pattern |
| WO2021118515 | (BABA-I) BABADZHANIAN A A (BABA-I) BABAJANYAN A | Method for manufacturing glazed structural heat-exchanger photovoltaic thermal (PVT) panels for sloping roof, involves fastening glass-coating over entire surface with discrete spacer walls and posts with front side carrying photocells |

Construcción Conducciones

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|---|
| WO2021177286 | (KEIW) KEIWA INC | Structure protective sheet used in concrete block, surface reinforcement of civil engineering structures such as road bridges, tunnels, water gates and sewer pipes, comprises polymer cement hardened layer provided on structure side and resin layer provided on polymer cement hardened layer |
| US2018031337 | (GENE-N) GENERATIVE TECHNOLOGY OPERATIVES LLC | Bidirectional thermal energy-transfer system used in e.g. a grade beam, comprises thermally conductive concrete, location of energy supply or demand that is physically isolated from, and means of transferring thermal energy |
| KR102270451 | (PERF-N) PERFECT CO LTD | Rainwater reuse polymer composite material storage system used for collecting and storing rainwater, has upper and lower portions which are opened, guide pipe which is installed on open top, and cover which is formed with filter holes |
| EP3842113 | (CERN-I) MARCELO CERNA I | Filter of solid particles for pipe structure of oil, gas and water, has supporting rings that are mounted on pipe and placed on end of set of filtration rings, each rings is adjusted on pipe by fixing unit and adjusting and defining section |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|-----------------------------|---|
| US2021170454 | (IWAS-I) IWASAKI-HIGBEE J L | Cleaning large pipe, comprises taking enhanced water having specific gravity and viscosity so that it does not pass by static specific number mesh screen but partially passes by vibrating specific number mesh screen, and cleaning accumulated sediment to loose by discharging enhanced water |

Construcción Muros

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---------------------------------|--|
| US2021237402 | (CHAM-N) CHAMPION LINK INT CORP | Panel for constructing floor or wall covering, has core that is used with mineral material and pair of opposite side edges, and opposite side edges that are provided with interconnecting coupling unit for interconnecting adjacent panels |
| WO2021149014 | (TOWE-N) TOWER IPCO CO LTD | Polyurethane core for use in a floor or wall panel or floor or wall covering panel comprises polyol made from recycled materials, and an isocyanate |
| WO2021123318 | (LILI-N) LI & CO AG | Panel for constructing a floor or wall covering, includes flat support element comprising an upper surface, a lower surface, a first pair of opposed side edges and a second pair of opposed side edges, and support element is waterproof |

Construcción Aislamientos

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|--|
| JP2021121493 | (KURA-I) KURATA K | Fire-resistant heat insulating sheet used for e.g. cable, is obtained by applying coating material containing resin binder, inorganic filler, polyhydric alcohol, phosphorus-based compound, melamine-based compound, heat-expandable graphite and glycerol, to both sides of base material and fixing |
| EP3868555 | (ARMA-N) ARMACELL ENTERPRISE GMBH & CO KG | Multilayer insulation product for use in e.g. heating and plumbing ducts, has three layers A, B and C, where first layer A is outer layer comprising flexible elastomeric foam, and second layer B and third layer C are bonded together |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|---|
| EP3868551 | (ELEM-N) ELEMENTS SRL | Backing layer for multi-layer insulation construction panel, comprises reinforcing layer made of fibrous material, and coating layer for reinforcing layer, where coating layer is made by applying compound on reinforcing layer |
| TW202041758 | (SENS-N) SEN SAN ENTERPRISE CO LTD | Energy-absorbing and shock-absorbing sound insulation device, has energy-absorbing and shock-absorbing layer arranged on upper surface of sealing layer, where energy-absorbing and shock-absorbing layer is made of polyurethane elastomer |
| WO2021156764 | (GURD) GUARDIAN GLASS LLC | Insulating glass (IG) unit has dynamically controllable shade which is arranged between first and second substrates, and shade includes first conductive layer provided, directly or indirectly, on interior major surface of first substrate, and conductive coatings that are connectable to power source |
| KR20210069925 | (UYKN) UNIV KONGJU NAT IND ACAD COOP GRO | Reinforcing material for preventing spread of fire installed along perimeter of windows and doors on outer wall surface of external insulation building, comprises base composition comprising thermally expansible resin and textile materials |
| ES1266680 | (U Y) ASOCIACION SOCIOEDUCATIVA ALDEATRON CANARIAS [ES]; DE LA CUESTA PRIETO ANTONIO [ES] | (U) Eco-friendly building block (Machine-translation by Google Translate, not legally binding) |
| EP3584230 | (JOHM) JOHNS-MANVILLE CORP | Fiber-containing composite such as insulation batt, comprises woven or non-woven fibers and a binder that holds the fibers together, where the binder comprises a reaction product of a starch and polycarboxylic acid |
| WO2021120094 | (JIAN-N) JIANGSU JINGXUE INSULATION TECHNOLOGY CO LTD | Double-layer rock wool fireproof heat-insulation sandwich panel used for building, has rock wool layers formed on central polyurethane layer and steel plates formed on surfaces of rock wool layers and distant from central polyurethane layer |
| EP3839171 | (MEAB-N) MEA BAUSYSTEME GMBH (MEAB-N) MEA BAUTECH GMBH | Thermal insulation for a building wall in the basement area of a house, includes fastening point, to which a light shaft is attached with the insulation, and insulation is glued to the building wall made of the fresh concrete |
| US2021156140 | (HAGE-I) HAGER T W | Manufacturing flexible insulation element from recycled expanded polystyrene foam involves providing wrapper having two opposing longitudinal edges, top edge and bottom edge, providing sheet of recycled paper, lining the sheet |

Construcción Ventanas

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|---|
| US2015064374 | (CORG) CORNING INC (JAIN-I) JAIN A (LAUR-I) LAURIN M M (MAAS-I) MAAS C J J (MOOR-I) MOORE M J (WOOD-I) WOOD C W | Laminate structure used for manufacture of e.g. multilayer article, comprises glass layers and polymer interlayer structure containing polymeric core between polymer layers containing polysiloxane and polyester, between glass layers |
| KR20210109965 | (PLAS-N) PLASUM INC | Gasket for windows and doors, has support portion and slip portion that are integrally formed with foamed sponge, and coating layer that is provided on surface of slip portion, where foam sponge is made of flame-retardant thermoplastic resin material |
| WO2021166781 | (ASAG) AGC INC (TOKD) TOKYO INST TECHNOLOGY | Power-source-less transparent cooling device installed in window of building, has heat radiating layer which is comprised of preset absorption peak in certain wavelength region, and infrared reflecting layer that is comprised of preset average reflectance in certain wavelength range |
| WO2021144755 | (GRAF-N) GRAF SYNERGY SRL | Welding machine for plastic profiled element e.g. window/door, has intermediate welding device with intermediate machining assembly for machining main profiled and transverse profiled elements |
| DE102020100410 | (ROTO-N) ROTOX BESITZ & VERW GES MBH | Method for connecting plastic profile sections e.g. window or door frames, involves forming bead on joining area during melting and/or during joining of profile sections by two partial tools which move towards one another |
| US2021207387 | (ROCK-N) ROCKWELL LLC | Modular step for window wells, has long fiber reinforced thermoplastic and fibers within long fiber reinforced thermoplastic are omnidirectional, relative to other fibers in thermoplastic and have length of greater than predetermined value |
| EP3839189 | (DECE-N) DECEUNINCK NV | Connection piece for joining post with frame element, sash or other post in window or door frame, comprises tubular body defining through and shoulder at proximal end and pen or protrusion at distal end, and screw extending through body |

Automoción

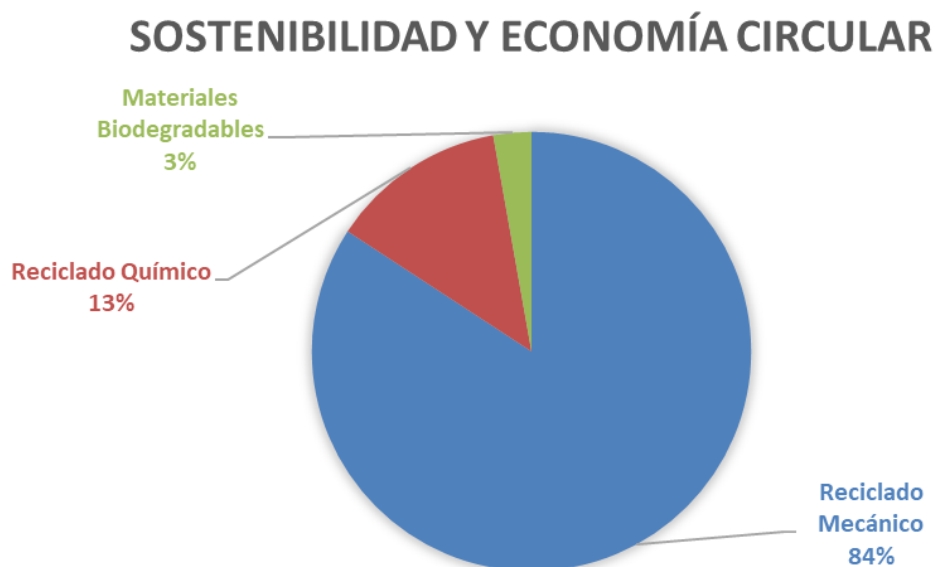
| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|--|
| US2021260858 | WABASH NATIONAL LP [US] | Composite structures with embedded electrical grids |
| WO2021161765 | (SUME) AUTONETWORKS TECHNOLOGIES LTD (SUDE) SUMITOMO DENSO KK (SUME) SUMITOMO ELECTRIC IND LTD (SUME) SUMITOMO WIRING SYSTEMS LTD | Thermoconductive material used for e.g. wire harness for electric vehicle, comprises base resin and insulating filler comprising heat conductive filler and hollow filler which are particles comprising air layer |
| CN113232560 | (UNUA) UNIV NANJING AERONAUTICS & ASTRONAUTICS | Artificial cartilage bionic material and negative Poisson ratio structure based children safety seat for vehicle, has negative Poisson energy absorbing device fixed in seat safety rear portion and seat plate |
| US2016229457 | (HOND) HONDA MOTOR CO LTD | Vehicle frame structural element assembly for vehicle, has reinforcement structure formed from plastic material, and structural foam is attached to reinforcement structure |
| DE102020201326 | (ZAHF) ZF FRIEDRICHSHAFEN AG | Method for manufacturing stabilizer for chassis of motor vehicle, involves forming one end of dry perform into dry plate-like end section, and injecting duromeric plastic into fiber material to form stabilizer housing with plate-like assembly section to be cured |
| WO2021146525 | (CTST-N) CONTINENTAL STRUCTURAL PLASTICS INC | Cargo construct used in vehicle, consists of floor, side wall panels, and end wall panel formed using composite sandwich panel material having open area core defining several pores provided between backing sheet and surface sheet |
| CN213861031 | (HUBE-N) HUBEI XIANGYUAN NEW MATERIAL TECHNOLOGY | Automobile interior trim panel comprises a glass fiber reinforced polypropylene layer, a foaming polypropylene layer and a sound insulation layer, where the upper surface of the glass fiber reinforced polypropylene layer is provided with a first sawtooth |
| EP3100951 | (BOE) BOEING CO | Method for forming embedded light source for e.g. cabin lighting, in composite panel, involves processing assembly comprising first layer of material, electrodes, and light source to form multilayer panel with embedded light source |
| WO2021136230 | (SUZH-N) SUZHOU GREENTECH CO LTD (SUZH-N) SUZHOU RUIGAO NEW MATERIAL CO LTD | Light weight automobile interior material for automobile instrument panel, door plate and seat back plate comprises e.g. surface treatment layer, thermoplastic polyurethane/thermoplastic polyolefin blending layer and back processing layer |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--|--|
| US2021213884 | (FORD) FORD GLOBAL TECHNOLOGIES LLC | Footboard assembly for vehicle e.g. all-terrain sedan, has tie layer which is formed from unfilled polymer-based material, and arranged along outer surface of tubular support element, and decorative sheet that is attached to tie layer |
| US2021213899 | (MAZD) MAZDA KK (MAZD) MAZDA MOTOR CORP | Shock absorbing element for dampening collision energy in vehicle, includes distal end portion attached to bumper reinforcement, base end flange portion fixed to vehicle body, and cushion element body |
| US2021214021 | (GENK) GM GLOBAL TECHNOLOGY OPERATIONS INC | Multilayer impact protection structure useful for underbody protection panels of vehicle, comprises layer of continuous fibers embedded in polymer matrix, second layer of elastomeric polymer and third layer of fiber-reinforced polymer |
| RO134957 | (STAN-I) STANCIU I | Brake pedal made from glass-fiber-reinforced polyester resin used in machinery building industry, has bores which are arranged for making connection with pedal assembly related elements |
| US2021170932 | (HYMR) HYUNDAI MOTOR CO LTD (KIAK) KIA CORP (KIAK) KIA MOTORS CORP (HYUN-N) HYUNDAI SYNTHETIC CO LTD (MITO-N) MITOMO TCS KK (SAMW-N) SAMWOO TCS CO LTD | Composite mat for vehicle, has composite by stacking fiberglass mat and polyurethane resin layer on surface of honeycomb layer, and layer of woven fabric, stacked on top of composite so that layer of woven fabric integrated with composite |
| WO2021126177 | (CVST) COVESTRO DEUT AG (CVST) COVESTRO LLC (HOWC) HOWA KK | Soundproof housing for body panel of motor vehicle, has sound insulating layer is formed with urethane resin as to have basis weight within predetermined low basis weight range |

VOLVER A
CONTENIDO

SOSTENIBILIDAD Y ECONOMÍA CIRCULAR

En el siguiente gráfico se muestra la distribución de las 1216 familias de documentos de patente recuperadas en este trimestre en el apartado de Sostenibilidad y economía circular. Como se observa la gran mayoría se refieren al reciclado mecánico.



Las siguientes tablas muestran una selección de los documentos más representativos, junto con un enlace directo a la base de datos Espacenet, el solicitante y una breve descripción de la invención.

Materiales Biodegradables

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|--------------------------------|------------------------------|---|
| JP2021130250 | (TOYJ) TOSOH CORP | Resin composition used for producing filament-form molded article for three-dimensional printer, comprises biodegradable resin and ethylene-vinyl acetate copolymer |
| DE202021102569 | (LEAN-N) LEANG YU INT CO LTD | Biodegradable composition used for forming film of biodegradable film product e.g. packaging bag, comprises bio-based polyester material containing bio-based poly(butylene succinate), powder material comprising calcium oxide powder and filler powder, and additive(s) e.g. oil |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|---|
| US2021171692 | (ITR) IND TECHNOLOGY RES INST | Biodegradable polyester is transesterification reaction product or esterification reaction product of reactant A and reactant B, where reactant A is modified saccharide oligomer, and reactant B is polyester and comprises dihydric alcohol |
| CA3070705 | (HARP-I) HARPER B P | Biodegradable macromolecular mulch film used for agricultural industry, comprises formation of film which involves delivery of dilute fiber suspension in water on woven plastic wire belt, to form wet fiber network using Fourdrinier machine |
| JP2021118825 | (TORE) TORAY MONOFILAMENT CO LTD | Handle for brush e.g. toothbrush, paintbrush and makeup brush, comprises aliphatic polyester as main component, and has preset biodegradation degree after one month in artificial seawater |
| WO2021153250 | (KANF) KANEKA CORP | Biodegradable polyester solution used for forming biodegradable adhesive, biodegradable ink and biodegradable laminate, comprises poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) copolymer and organic solvent |
| RU2746725 | (UYMO-N) UNIV MOSC ELECTRONIC TECHNOLOGY INST | Method for producing a biodegradable coating with high hydrophilicity based on a biopolymer |
| WO2021131181 | (MITU) MITSUBISHI CHEM CORP | Decomposition promoter used in resin composition for producing biodegradable resin molding e.g. food packaging film, comprises cellulose, hemicellulose and lignin, and preset mass ratio of nitrogen and carbon |
| PL436213 | (POLI-N) POLITECHNIKA CZESTOCHOWSKA | Layered biodegradable film comprises two external layers made of polylactic acid, polyhydroxy butyrate, polyhydroxy alkanooate or polybutylene succinate, and one internal functional layer containing organic additive and/or inorganic additive |
| RU2020121755 | (SCFO-N) FEDERAL SCI FOOD SYSTEMS CENT | Biodegradable thermoplastic composition for production of polymer products, comprises glycerol, distilled monoglycerides, low density polyethylene, and thermoplastic starch obtained by extrusion in presence of plasticizers and glycerin |

Reciclado Mecánico

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---------------------------------------|--|
| JP6935963 | (REFI-N) REFINVERSE INC | Method for recycling fishing net, involves pulverizing fishing net piece after drying to fiber piece of specific value, and processing fiber piece into pellet shape by extrusion molding |
| FR3107658 | (SUEZ-N) SUEZ GRP | Method for separating polymer materials from assembly of elements, involves providing a support coated with thermoplastic polymer having glass transition temperature, and dry ice is projected against thermoplastic polymer |
| EP3858571 | (POLY-N) POLYTECHNYL SAS | Treatment of object comprising first material and second material bound to first material, involves physically treating object to obtain micronized particles, and detaching and/or disaggregating the micronized particle |
| WO2021152124 | (EOEE-N) EOE EYEWEAR AB | Recycling method of discarded eyewear e.g. glasses and sunglasses for fashion or esthetic purposes and for vision correction, involves subjecting mixture to separation to separate crushed plastic material(s) from metal(s) |
| JP2021112867 | (MORI-I) MORITA K JP | Method for melting and disposing synthetic resin products e.g. plastic, involves melting synthetic resin, iron and timber |
| DE102020102310 | (KURZ) KURZ STIFTUNG & CO KG LEONHARD | Method for recycling transfer product, involves winding up transfer product on roll, compressing transfer product snippets, in particular carrier film shreds to form compact product or extrusion of transfer product snippets, in particular carrier film shreds to form extrusion product |
| ES2836884 | (ALBA-I) SALCEDO ALBARRACIN F | Thermo melter for recycling plastics, has a casing in which the rotors, crushers, drive motor, melted drawer, elements and the control module are mounted |
| DE102020101426 | (ISSI-I) ISSINGHOFF P | Method for producing pourable or blowable thermal insulation material, involves mechanically comminuting core layer made of heat-insulating material and metallic cover layers to form granules with grain size for thermal insulation purposes |
| TWM602470 | (GUOH-I) GUO H (GUOW-I) GUO W | Styrofoam waste recycling equipment, has controller electrically connected to temperature sensors, crushing mechanism, feeding mechanism and discharging heating tube, where waste material is passed through temperature control areas in sequence |
| WO2021140087 | (MYRE-N) MYREPLAST SRL | Mechanical selection and separation of at least two polymers from mixture of polymers originating from commercial and/or industrial plastic waste, comprises e.g. identifying flakes of colored and white plastic material by near-infrared spectroscopy |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--|--|
| WO2021130485 | (TOOT-N) TOOTHBRUSH CLUB LTD | Method for recovering material from toothbrush or toothbrush head, involves providing material from one of first and second recycling processes to process for forming new item, where bristles extracted from casing are provided with clamping |
| RU2019135311 | (SERB-I) SERBINOVA G A | Method for disposal of highly contaminated waste polymers without special purification, involves grinding polymer by deformation of mechanical rupture in installation of above type, for purposeful production of highly dispersed particles |
| EP3838538 | (GAIK-N) FUNDACION GAIKER | Method for recycling carbon fiber prepreg involves subjecting flow of mixture of carbon fiber particles and polymeric film fragments to airflow of opposite direction, and collecting carbon fiber particles in carbon fiber particles collector |
| US2016236378 | (CROU-I) CROUGHWELL C | Method for recycling plastic materials utilized as filler, involves collecting used plastic articles and shredding used articles into shredded plastic pieces having desired maximum dimension, where pieces are provided as plastic filler |
| EP3858907 | (GREE-N) GREEN UNION SRL | Recycling waste and/or scrap polystyrene of foam polystyrene (EPS) and/or extruded polystyrene (XPS) type by compressing and grinding waste and/or scrap polystyrene of EPS and/or XPS type, and adding antioxidant additive and strong bases |
| ES2823925 | (UYPV) UNIV VALENCIA POLITECNICA (ASIN-N) ASOC INVESTIGACION IND DEL JUGUETE CONEX | Obtaining recycled material from multilayer PET containers by mixing crushed multilayer PET material with compatibilizing mixture formed by thermoplastic matrix, vegetable-derived reactive agent, and rosin tackifying agent, and extruding |

Reciclado Químico

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|------------------------|--|
| WO2021180893 | (INDA-N) INDAVER | Recovering styrene monomer from plastic material which contains styrene-containing polymer by heating plastic material in pyrolysis reactor, cracking styrene-containing polymer to produce a product, and separating the product |
| EP3778744 | (UABN-N) UAB NEO GROUP | Recycling post-consumer polyethylene terephthalate for polymeric polyethylene terephthalate material, involves combining a post-consumer polyethylene terephthalate material with ethylene glycol, heating, purifying, and re-polymerizing |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--|--|
| US2021230485 | (SAOI) ARAMCO SERVICES CO (SAOI) SAUDI ARABIAN OIL CO | Depolymerizing of a plastic polymer involves supplying the plastic polymer and aromatic bottoms from an aromatic recovery complex, dissolving plastic polymer in the aromatic bottoms, and cracking dissolved plastic polymer solution |
| WO2021167556 | (SETA-N) SETAS KIMYA SAN AS | Chemical recycling method used for production of packaging materials, involves passing mixture comprising cotton through filter, removing cotton from medium, feeding mixture into centrifuge, and separating mixture from centrifuge separator |
| WO2021157399 | (FJIS) FUJI SEAL INT INC | Removal of ink layer from shrink label used on plastic products, involves preheating shrink label provided with ink layer, fracturing preheated label to form shrink label pieces, and removing ink layer from label pieces by alkali desorption |
| WO2021151071 | (PREM-N) PREMIER PLASTICS INC | Depolymerizing plastic involves flowing mixture containing solid plastic particles in solvent through line in heating chamber at particle speed sufficient to maintain suspension of the plastic particles in the solvent |
| FR3107059 | (AQOR) ARKEMA FRANCE | Treating recycled composition based on polyamides used e.g. to make article involves kneading mixture comprising the composition, polyamide chain cutting agent and filler and/or additive in molten state and recovering the composition |
| EP3865534 | (UYTR-N) UNIV TRIESTE | Recycle of ionic-polymeric-network continuous-phase-containing material used as element of e.g. sound-absorbing panel, involves decomposing complex of aqueous mixture comprising polyanionic polymer(s) and complex(s) of cation(s) to form hydrogel comprising ionic polymeric lattice and dehydrating |
| WO2021148713 | (VALW) VALTION TEKNILLINEN TUTKIMUSKESKUS | Degrading polyester used in isolated enzyme, micro-organism or host cell, expression vector or plasmid for producing the enzyme or fragment, involves providing polyester containing material and enzyme |
| WO2021146237 | (CARB-N) CARBON INC | Method of recycling additively manufactured material into reusable thermoplastic polymer involves comminuting additively manufactured material comprising light- and heat-polymerized polymers, extracting and separating |
| WO2021140016 | (INSF) IFP ENERGIES NOUVELLES | Depolymerization of feedstock containing polyethylene terephthalate in manufacture of foodstuff container, involves depolymerizing polyester feedstock, separating diol fed with effluent, and decolorizing pre-purified monomer effluent |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|---|
| WO2021136802 | (PURI-N) PURIFUNGI | Treating of cigarette butts polluted with toxic substances for producing biopolymers, involves inoculating phase of mycelial growth of strain(s) of fungi into inoculated culture substrate and drying of de-polluted culture substrate |
| EP3269754 | (CYTE) ALLNEX BELGIUM SA (ALLN-N) ALLNEX BELGIUM SA | Forming (meth)acrylated compound involves reacting thermoplastic polyester with polyhydric alcohol, reacting the resultant with fatty acid and/or polybasic carboxylic acid and reacting formed polyester polyol with (meth)acrylating compound |
| WO2021123299 | (CARB-N) CARBIOS | Degrading plastic product comprising polymer, used to make monomers and/or oligomers and/or degradation products, comprises partially foaming plastic product, and depolymerizing target polymer of the partially foamed plastic product |
| FR3105236 | (INSF) IFP ENERGIES NOUVELLES | Depolymerization of polyester filler used as feed, involves depolymerizing conditioned polyester feed, separating liquid monomer-rich effluent into pre-purified monomer effluent, and decolorizing monomer effluent to obtain pure monomer |
| WO2021123210 | (TEIJ) TEIJIN ARAMID BV | Continuous process for recycling of aramid fiber used in e.g. multifilament yarn comprises combining aramid fibrous material with sulfuric acid to obtain spin dope comprising aramid and processing spin dope into continuous aramid fiber |
| WO2021126936 | (EACH) EASTMAN CHEM CO | Treating product stream from polyester methanolysis depolymerization process involves hydrogenating dimethyl terephthalate to form dimethyl 1,4-cyclohexanedicarboxylate and 1,4-cyclohexanedimethanol, hydrogenating side species |
| US2021189093 | (WOOD-I) WOOD C E | Composting polyurethane plastic waste, by combining organic matter e.g. leaves, stems or roots, Bordetella species utilizing polyurethane as carbon source, and polyurethane material, mixing mixture, and exposing for microbial degradation |
| EP3842482 | (DECH-I) DECHNIK M A (MATU-I) MATUSIAK T | Composite from recycled thermoplastic plastic waste, refuse-derived fuel, used in wood-based materials, boards and plywoods, comprises waste thermoplastic binding material containing basic polymer comprising thermoplastic polymers |
| WO2021120149 | (RHOD) RHODIA OPERATIONS | Fragmentation of polymer chain into chemical species of lower molecular weight than polymer chain, involves subjecting oxidative degradation, and providing polymer chain containing chemical groups |
| WO2021119776 | (QUEV-I) JOAQUIM ANTUNES QUEVEDO E (DARA-I) SILVA DE ARAUJO H | Method for recycling laminated polymeric package through ethylene glycol involves immersing polymeric package made of polyethylene, polypropylene and aluminum, in glycol, separating aluminum and polymer, and removing glycol residue |

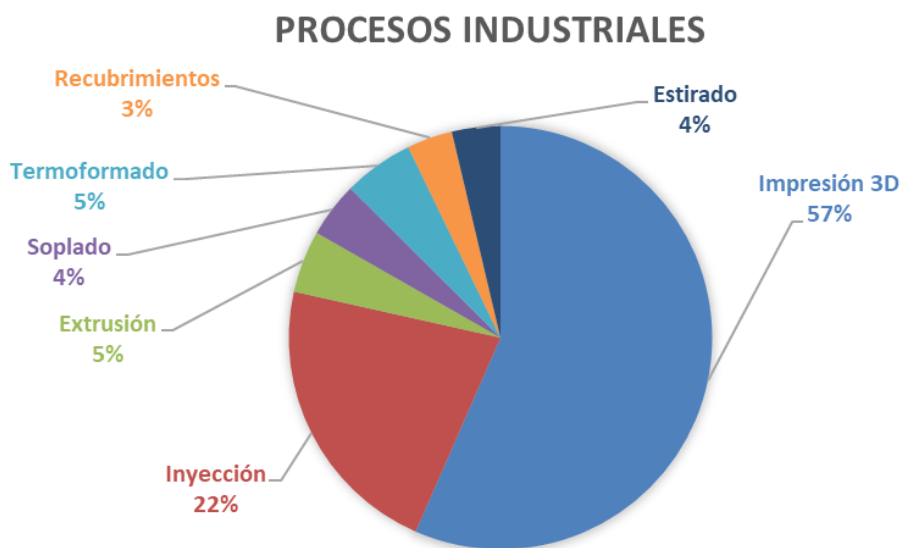
| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--|--|
| FR3105235 | (INSF) IFP ENERGIES NOUVELLES | Depolymerizing polyester filler having polyethylene terephthalate, involves e.g. conditioning step involving conditioning section to produce flow of conditioned feed, and mixing section to produce mixed flow and depolymerizing |
| WO2021119389 | (BIOC-N) BIOCELECTION INC | Decomposition of polypropylene waste for forming decomposition product e.g. skincare products, involves adding polypropylene waste, and oxidizing agent to reaction vessel to obtain mixture, and subjecting mixture to decomposition |
| EP3835347 | (TAIS-N) TAI SU ENERGY TECHNOLOGY CO LTD (TAIS-N) TAISU ENERGY TECHNOLOGY CO LTD | Device useful for increasing intrinsic viscosity of recycling polyester waste, comprises shredding unit, melting unit, filtration unit, reactor tank (40) i.e. linked to vacuum unit and control unit and a cutting unit |
| EP3838976 | (CARB-N) CARBIOS | Degrading plastic product comprising polymer used to make monomers and/or oligomers and/or degradation products involves submitting plastic product to spinning step to form fibers of plastic product and depolymerizing polymer of the fibers |
| WO2021123475 | (UYEA) UNIV ALICANTE | Method for decontaminating recycled plastic materials e.g. polyester from domestic waste, involves performing extraction by using water-soluble solvent having predetermined boiling point at atmospheric pressure |
| ES2832598 | (GAIA-N) GAIA OIL & ENERGY SL | Preparing biofuel from plastic waste involves selecting the fuel mixture to be produced, formulating the recipe for pyrolyzable plastics, optically separating the pyrolyzable plastics to be used from the waste in a sorting station |
| EP3831502 | (CURT-N) CURTI COSTR MECCANICHE SPA | Plant for recovering carbon or glass fibers from composite materials comprising fibers in a polymer matrix comprises tunnel kiln along which materials are conveyed inside containers and comprises pyrolysis zone, and gasification zone |
| WO2021163123 | (EACH) EASTMAN CHEM CO | Processing waste plastic involves introducing terephthalyl column bottoms coproduct stream from solvolysis facility into partial oxidation gasification facility, pyrolysis facility, cracker facility, and energy generation/energy production facility |
| WO2021165964 | (TRIP-N) TRIPLEW LTD | Producing L-lactate salt from combined recycling of polylactic acid (PLA) and organic waste, involves hydrolyzing PLA waste with metal oxide, fermenting organic waste with lactic acid-producing microorganism and purifying |
| WO2021145822 | (SGST) AGENCY SCI TECHNOLOGY & RES | Modified cyclic polypeptide used in composition for hydrolysing polyethylene terephthalate, comprises first amino acid sequence comprising PETase enzyme or active fragment, and second and third amino acid sequence |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|------------------------|--|
| WO2021163132 | (EACH) EASTMAN CHEM CO | Processing waste plastic involves introducing reactor purge coproduct stream from solvolysis facility into partial oxidation gasification facility, pyrolysis facility, solidification facility or cracker facility |
| WO2021163104 | (EACH) EASTMAN CHEM CO | Processing waste plastic involves introducing glycol column bottoms coproduct stream from solvolysis facility into partial oxidation gasification facility, pyrolysis facility, cracker facility, and energy generation/energy production facility |

VOLVER A
CONTENIDO

NUEVOS PROCESOS INDUSTRIALES

En el siguiente gráfico se muestra la distribución de las 11980 familias de documentos de patente recuperadas en este trimestre en el apartado de Nuevos procesos industriales. Como se observa más de la mitad de ellos se refieren a la impresión 3D.



Las siguientes tablas muestran una selección de los documentos más representativos, junto con un enlace directo a la base de datos Espacenet, el solicitante y una breve descripción de la invención.

Inyección

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--------------------------------------|--|
| EP3881997 | (KING-N) KING STEEL MACHINERY CO LTD | Injection molding method for injecting molding article, involves injecting second material into second mold cavity defined by first mold and third mold, and forming second layer from second material arranged over first layer |
| EP3878622 | (ADVA-N) ADVAL TECH HOLDING AG | Method for injection molding of product from thermoplastic material using production tool with molding cavity, involves introducing slider(es) into cavity to separate cavity into at least two areas which are separated transverse direction |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|---|
| WO2021176346 | (SPIA) SIPA SOC IND PROGETTAZIONE & AUTOMAZIONE | Component of nozzle for injecting molten plastic into molding cavity of container e.g. test tube or bottle preform, has main portion that is inserted in sub portion so that molten plastic passes from sub stretch to main stretch |
| WO2021181940 | (OMRO) OMRON CORP (OMRO) OMRON KK | Mold exchange device of molding apparatus for performing injection molding of resin, has exchange-type metal mold whose one portion is positioned between first and second matrix molds, and intermediate matrix mold whose through-hole is penetrated from first matrix mold to second matrix mold |
| WO2021177032 | (SUMH) SUMITOMO HEAVY IND LTD | Injection molding machine of injection molding machine system, has monitoring unit that restarts information processing unit automatically in predetermined starting mode in which function is limited rather than normal starting mode |
| WO2021164842 | (WESF) HELLA GMBH & CO KGAA | Mould for injection moulding of optical components of automotive lighting devices, comprises mould body with coating comprising electroless nickel |
| WO2021170217 | (ZZZZ-N) Z-WERKZEUGBAU-GMBH | Plastic injection mold for producing plastic injection molded component, has sliding jaw tool component actively moved independently of initially given undercut connection to injection-molded component |
| WO2021164606 | (CXST) CHANGXIN MEMORY TECHNOLOGIES INC (CXST) CHANGXIN STORAGE TECHNOLOGY CO LTD | Injection mold for packaging chip, has chassis that is formed with glue injection channel for injecting plastic package material, and is connected with through hole on substrate |
| WO2021156001 | (KAUF-N) KAUFMANN FORMENBAU AG GEORG | Injection molding tool for producing composite molded part, has die slide, punch or die including folding arrangement with curved area defining folding edge and another area spaced apart from former area |
| WO2021157253 | (NSSK) NISSEI PLASTICS IND CO LTD | Injection molding assistance apparatus of injection molding machine, has calculating unit which calculates estimated solid-phase rates of resin material by using high-speed computation method, on basis of basic information and restriction information |
| WO2021156501 | (LEGO) LEGO AS | Clamping unit for injection molding machine, has main guide rail pillar whose first end is fixedly connected to base plate of clamping unit, and whose second end is connected to second end structure |
| WO2021156367 | (STAM) DSM IP ASSETS BV | Cavity mold for use in injection molding process, has injection channels with double gating system with two injection gates, where gates are located at opposite sides of cavity and at position near middle of length direction of cavity |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|--|
| WO2021157503 | (FUFA) FANUC CORP (FUFA) FANUC LTD | Injection molding machine for opening and closing metal mold, has adjustment tool which can be adjusted to extending direction for regulation position while slider is regulated so that slider may not slide to die-opening direction of metal mold |
| US2021206041 | (PROC) IMFLUX INC | Adjusting melt pressure in an injection molding machine, involves measuring, by sensor of injection molding, property associated with injection of polymeric material being injected by injection molding machine based on measured property |
| WO2021134141 | (GUOQ-I) GUO Q | Injection molding machine for forming plastic products with various shapes made of thermoplastic plastics or thermosetting plastics, comprises base, fixing plate, pedal control plate, hydraulic lifter, telescopic rod, and guide rail |
| WO2021127776 | (HUIN) HUSKY INJECTION MOLDING SYSTEMS LTD | Injection molding machine for molding multilayer article has controller that generates indicator of pullback effectiveness based on relationship of post pullback pressure indicated by one physical parameter and threshold pressure |
| WO2021127691 | (GOOG) GOOGLE LLC | Making housing of electronic device, comprises fabricating polymer device housing for electronic device though injection molding process, and applying layer of microspheres to surface of the polymer device housing |
| DE102019135127 | (BRAU-N) BRAUNFORM GMBH | Tool for injection molding of injection molded plastic portions, has specific structural unit which is set for ejecting injection-molded portion from cavity relative to overall frame and other structural unit which is arranged displaceably |
| WO2021123093 | (LEGO) LEGO AS | Injection-moulding tool for mounted in injection-moulding apparatus, has stretch of downstream end of primary runner has cross section area being smaller than cross section area of primary runner further upstream from junction |
| WO2021124370 | (DEON) DE LONGHI APPLIANCES SRL (DEON) DELONGHI APPLIANCES SRL | Method for production of component made of plastic material, involves injecting second plastic material into second molding volume defined between first layer obtained in first injection step and second matrix to make second layer |
| EP3838575 | (ENGE-N) ENGELBERT STRAUSS GMBH & CO KG | Method for producing a transparent outsole by injection or casting with plastic in upper punch or displacer and a lower punch or bottom punch, involves providing the first tool portion, has suction openings connected to one vacuum source |
| DE102020101748 | (KLOC) FERROMATIK MILACRON GMBH | Multi-component injection molding machine for producing plastic articles, has second clamping element which mechanically interlocked with first clamping element in such way that coupling device provides pressing force of nozzle head |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|--|
| EP3838533 | (CVST) COVESTRO DEUT AG (CVST) COVESTRO INTELLECTUAL PROPERTY GMBH & CO | Producing thermoplastic polyurethane used in a molding process of thermoplastic polyurethane for producing interior components for vehicles, involves introducing prepolymer stream containing OH-functional prepolymers into extruder |

Extrusión

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--|--|
| EP3878617 | (RECY-N) RECYPLAST HOLDING AG | Production of recyclate sheet from residual waste that arises from recycling of packaging, by shredding residual waste into chips, agglomerating residual waste shreds, degassing hot strand of material, and extruding degassed strand |
| WO2021170608 | (CHES) LENZING AG | Producing spunbond nonwoven fabric, comprises extruding solvent-containing spinning mass via multiple nozzle holes of spinneret to form filaments, stretching filaments in extrusion direction, and depositing filaments to form spunbond fabric |
| DE102020001456 | (HENN-I) HENNES J | Extruder with a screw for processing a processing material, includes one screw where homogenization zone HZ1 is mixing zone which has height-limited gap-wall area on screw flight and has height-limited flow area on screw flight |
| EP3871852 | (WERN) COPERION CORP (WERN) COPERION GMBH | Comprehensive cutter head used in granulating device to granulate strands of material, comprises knife carrier, granulating knife attached to knife carrier, and adjusting element for fine positioning rests against granulating knife |
| EP3871854 | (XIOA-I) XIOASHA T | Method for manufacturing high-density polyethylene terephthalate foam board, involves passing mixture through plank extruder, heating mixture, and curing mixture to form foam board |
| DE102020105362 | (WEBE-N) WEBER MASCHFAB GMBH HANS | Extrusion device for extrusion-based production of three-dimensional object, has second extrusion unit that is assignable or assigned material introduction device which is set up to introduce additional material into extrusion material |
| WO2021161782 | (HITF) HITACHI ZOSEN CORP | Manufacture of fiber-containing sheet involves performing extrusion molding from T-die in state in which resin for forming core layer and resin for forming skin layers on both surfaces of core layer are layered, during extrusion molding of resin containing fiber material into sheet shape using T-die |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|--|
| DE102020101387 | (BCEX-N) BC EXTRUSION HOLDING GMBH | Method for reducing temporal fluctuations in output of plastic mass during extrusion of e.g. plastic pipes, involves conveying pasty plastic mass with build-up of pressure along extrusion axis by rotating extruder screws |
| US2021178662 | (TICN) TICONA LLC | Performing three-dimensional printing method involves supplying polymer composition to extruder system, where polymer composition comprises multiple reinforcing fibers embedded and distributed within thermoplastic polymer matrix |
| EP3865277 | (BARR-I) BARR R A | Extruder screw used in material extruder for transforming solid materials into molten mixture, has channel with first channel portion containing solid particles of material moved toward pushing surface as main portion is rotated |
| WO2021148898 | (PATE-I) PATEL H | Multi-layer extruded product e.g. plastic, manufacturing system, has splitter device receiving line of extruded layer material from extruder and dividing received line into two lines of layer material |
| EP3848171 | (GOOR) GOODRICH CORP | Method of extrusion additive manufacturing for veneer applications, involves actuating working surface and depositing additional portion of mixture on extruder proximate to first position of mixture deposited on working surface |
| WO2021149524 | (ASAE) ADEKA CORP | Manufacture of resin composition for forming molded product, involves heating, melting and kneading mixture comprising thermoplastic resin and granular nucleating agent, and extruding in twin-screw extruder at preset volume-based discharge amount and strain rate |
| EP3848178 | (NOVO-N) NOVOPLAST SCHLAUCHTECHNIK GMBH | Production of extruded hoses involves melting and extruding plastic granulate in single-screw extruder, where ultra-high molecular weight polyethylene is introduced via intake of extruder |
| EP3858582 | (NEDE) NEDERLANDSE ORG TOEGEPAST NATUURWETENSCH | Print head module for extrusion print head, has first meshing gear of two meshing gears of first pump is arranged for being actuated by first actuator axle that extends through stackable arrangement |
| EP3851626 | (COMP) SAINT-GOBAIN GLASS FRANCE | Extrusion nozzle for discharging profile strand, has two extrusion nozzle openings which are arranged on upper side of extrusion head, and distributor element which is arranged on extrusion nozzles head |
| EP3842489 | (SUMO) SUMITOMO CHEM CO LTD | Heterophasic propylene polymer material useful for airbag cover material and molded article, comprises propylene homopolymer component and ethylene-propylene copolymer component comprising ethylene-propylene copolymer components |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---------------------------------------|--|
| FR3105064 | (MICL) CIE GEN ETAB MICHELIN & CIE | Extrusion machine used for manufacture of strips of elastomeric material has guide path that extends in longitudinal direction so that profile can engage and progress in guide path, between auxiliary rollers and receiving surface |
| WO2021130618 | (MINN) 3M INNOVATIVE PROPERTIES CO | Coextruded article for cushioning applications, comprises coextruded first and second layers, a series of microchannels between coextruded layers, and at least one layer of pressure sensitive adhesive adjacent one major surface of article |
| EP3838537 | (BOEI) BOEING CO | Recycling expanded polymer pellets by reducing expanded polymer pellets into reduced polymer pellets, treating reduced polymer pellets to yield partially purified recovered polymer composition, and collecting polymer composition |
| DE102019135737 | (GREI-N) GREINER EXTRUSION GROUP GMBH | Extrusion nozzle with nozzle plate for extrusion device for extrusion of plastic profiles, which has holding device, that is arranged within one flow channel, and holding device is molded onto surface of flow channel |

Soplado

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|----------------------------------|---|
| WO2021181299 | (SIAP-N) SIAPI SRL | System for producing plastic containers from preforms, comprises blowing stations comprising first and second blowing stations for blowing preforms and movement system for moving preforms comprising delivery line for delivering preforms |
| DE102020102970 | (SALZ) KHS CORPOPLAST GMBH | Cassette for use in opening of wall of blow-molded portion of blow mold for stretch blow molding plastic hollow body, includes shaping element is arranged inside a cassette housing, and fluid cylinder is arranged within cassette housing |
| WO2021173448 | (PEPS) PEPSICO INC | Container e.g. beverage container, blow molding method, involves applying pressurized air to mold cavity so that heated preformed puck stretches to conform to shape of inner wall of mold cavity |
| WO2021145314 | (NASB) NISSEI ASB MACHINE CO LTD | Manufacturing method of resin-made container used as cosmetic container for accommodating skin lotion, involves blow-molding multilayer preform obtained with heat to manufacture resin-made container having pinstriped color pattern by layer |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|----------------------------------|--|
| EP3753583 | (SMIS-N) SMI SPA | Disinfection unit mounted in blowing and filling system, has disinfection portions that comprises disinfection element which emit UV-C radiation or is connected with laser source that emits UV-C or visible-infrared radiation (VIR) radiation |
| WO2021137189 | (DAUN-N) DAUNIA PLAST SPA | Assembled preform for making blown container, has locking unit integrally obtained on material of internal preform and cooperating by blocked interference with internal surface region of neck part of external preform |
| WO2021153671 | (NASB) NISSEI ASB MACHINE CO LTD | Metal mold for blow molding device and injection molding device used in production of resin-made container, has fixed lubricant which is embedded under sliding face of neck mold and cavity mold, and sliding face of neck mold and core injection mold |

Termoformado

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--|--|
| ES1275124 | (DECA-N) DECAM TECHNOLOGY SOLUTIONS 2000 SL | Packaging thermoforming machine for containers, comprises thermoforming station, equipped with press that is fed by units of sheet of previously heated thermoforming material, sheet is dragged by chain arranged in guides |
| EP3871856 | (ESSI) ESSILOR INT (SHAM-N) SHAMIR OPTICAL IND LTD | Thermoforming machine for laminating functional multi-layer film on optical article e.g. ophthalmic lens, has regulator comprising heated air flow regulating mask receiving air flow, and flow restricting elements providing air flow restrictions |
| WO2021154078 | (DUTH-N) DUTCH THERMOPLASTIC COMPONENTS BV | Method for forming thermoplastic composite, involves clamping common outer part in between second and third mold parts during mutually moving first and second mold parts while allowing inner parts to move relative to first mold parts |
| EP3868542 | (MOTH-N) MOTHERSON INNOVATIONS CO LTD | Method for manufacturing three-dimensional inlay part for interior trim part of vehicle, involves inserting thermo-formable main layer including adhesive layer and releasable foil into forming unit |
| WO2021151170 | (UNIQ-N) UNIQCO-IP PTY LTD | Manufacturing sheeting by forming recesses in symmetrical repeat pattern on sheet of material, extruding molten material to form upper outside wall and lower outside wall, interposing formed sheet between upper and lower outside walls, and fixing interposed sheet to upper and lower outside walls |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|-----------------------------------|--|
| WO2021157588 | (MITN) MITSUBISHI GAS CHEM CO INC | Thermoforming laminate for forming molded product, comprises base material layer containing thermoplastic resin, after-cure hard coating layer containing polymerization inhibitor and active energy ray-curable resin, and protective film |
| ES2836884 | (ALBA-I) SALCEDO ALBARRACIN F | Thermo melter for recycling plastics, has a casing in which the rotors, crushers, drive motor, melted drawer, elements and the control module are mounted |
| EP3858585 | (ROHR) ROHR INC | Method for forming fiber-reinforced thermoplastic panel, involves compressing skin between roller and mandrel, and cooling skin after consolidating and conforming skin to mandrel to temperature below recrystallization temperature of resin |
| EP3744501 | (VARI-N) VARIOTECH GMBH | Tool for producing transport container from plastic, has wall that is moved from molding position into demolding position in which distance between end of wall protruding in molding position and side wall section is reduced |
| US2021154970 | (SHAW-N) SHAWMUT LLC | Discontinuous thermoformable composite product for thermoforming molding machine operated to produce molded composite product, comprises polyurethane foam, rigid substrate, and cover that is bonded to polyurethane foam |
| WO2021133668 | (SONO) SONOCO DEV INC | Thermoformable sheet useful for making food tray or other article, comprises a polyolefin substrate, and a coated film comprising a ceramic film (comprising a polyolefin film coated with a metal oxide) and a copolymer layer |

Recubrimientos

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|-------------------------|--|
| WO2021145202 | (NITL) NITTO DENKO CORP | Coating device used for manufacturing film, comprises coating component which applies coating liquid to base material, ejection openings which discharges coating liquid, and flow path which connects manifold and ejection opening |

Estirado

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|------------------------------------|---|
| US2021246576 | (REDB-N) RED BANK TECHNOLOGIES LLC | Polymer element used as composite material in fabric, comprises polymeric material that has been hot drawn by process that comprises series of two or more stretching cycles that are interspersed with periods |
| WO2021149815 | (NIRA) UNITIKA LTD | Manufacture of polyamide resin film used for forming laminated film, involves forming polyamide resin by polymerizing using raw material containing monomer, refining and forming unstretched film using starting material containing refined polyamide resin and stretching unstretched film |
| EP3854569 | (MARC-I) MARCHANTE C | Stretching device for stretching film of synthetic material, has first and second endless chains that are deformable between first state in which grippers are arranged in proximity to each other, and second state |
| WO2021127350 | (TAGH-N) TAGHLEEF IND INC | Multilayer, oriented shrink film includes a core layer, skin layers on opposed sides of the core layer, and an interlayer between each skin layer and the core layer for bonding each skin layer to the core layer |

Curvado

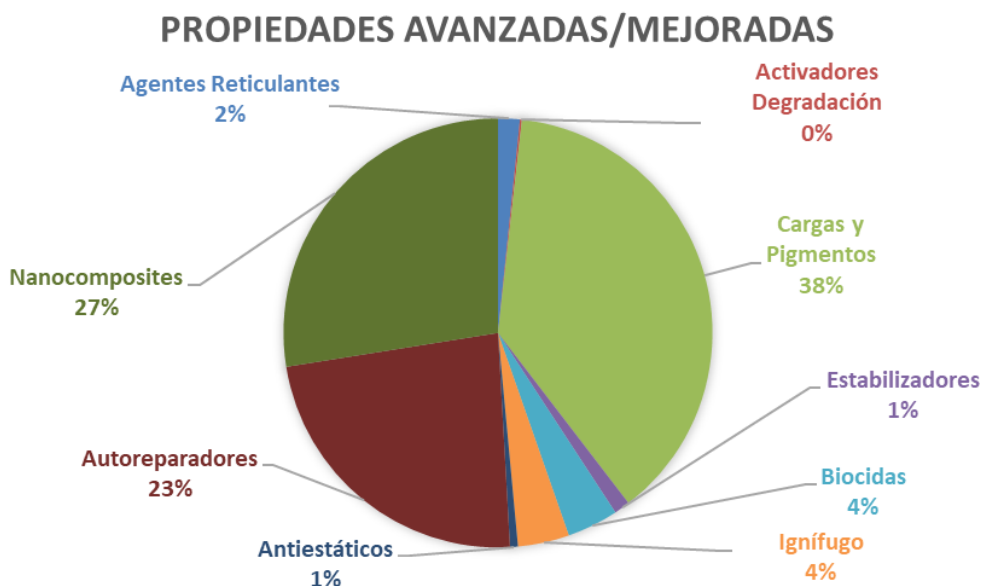
| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|-------------------------------------|--|
| US2021231237 | (KEYS-N) KEYSTONE TOWER SYSTEMS INC | Tubular structure for off-shore wind turbines, comprises base having first surface defining elongate cavity and tubular shape defining longitudinal axis extending along elongate cavity and wrap is supported on second surface of base |
| US2021260795 | (BOEI) BOEING CO | Method for forming curved composite charge for stringers, involves inserting die into cavity such that hat portion is positioned between die and cavity surface, and rotating pallet portions relative to each other around axes |
| EP3865667 | (RORO) ROLLS-ROYCE PLC | Method for fabricating variable stator vane, involves providing fiber sheet, rolling fiber sheet around mandrel to form spindle section, and using excess of material of fiber sheet to form aerofoil section of variable vane |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|------------------------|--|
| WO2021155908 | (KAKA-N) KA GROUP AG | Preformed thermoplastic tube for use in heat exchanger, has tube wall provided with pattern of corrugations with minimal dimensions in terms of number of grooves on inner curve of bend |
| FR3106648 | (AQOR) ARKEMA FRANCE | Multilayer structure used in storage of hydrogen comprises sealing layer composite, reinforcing layer, waterproofing layer, layer, composition, short-chain polyamide thermoplastic polymer, modifier shock, modifier impact and plasticizer |
| WO2021148982 | (MANZ-N) MANZ ITAL SRL | Winding apparatus for production of power storage devices, has core that is arranged on support in rotary manner and is driven in rotation by second actuator device through second drive element |
| EP3845370 | (BOEI) BOEING CO | Method for forming composite structural panel e.g. sandwich panel, involves arranging composite tubular structures on support structure, and bonding composite tube structures together by co-curing, co-bonding, or secondary bonding |



MATERIALES CON PROPIEDADES AVANZADAS O MEJORADAS

En el siguiente gráfico se muestra la distribución de las 487 familias de documentos de patente recuperadas en este trimestre en el apartado de Materiales con propiedades avanzadas o mejoradas. Como se observa el grupo más numeroso es el de Cargas y Pigmentos.



Las siguientes tablas muestran una selección de los documentos más representativos, junto con un enlace directo a la base de datos Espacenet, el solicitante y una breve descripción de la invención.

Cargas y pigmentos

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--|---|
| WO2021178119 | (DOWC) DOW GLOBAL TECHNOLOGIES LLC (DOWO) DOW SILICONES CORP (ROHM) ROHM & HAAS CO | Composition useful in article, comprises, organoclay, alkoxy functional linear polysiloxane, and roundish or crushed thermally conductive fillers comprising small thermally conductive fillers, medium thermally conductive fillers and large thermally conductive fillers |
| JP2021130737 | (SUMB) SUMITOMO BAKELITE CO LTD | Sealing resin composition used in sealing material of electronic device, comprises epoxy resin, curing agent, inorganic filler and coloring agent and satisfying specific condition that cured product of composition has specific dielectric loss tangent |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--|--|
| KR20210100236 | (HANW) HANWHA COMPOUND CORP (ONCO-N) ONCO QUEST PHARM INC | Composition useful in preparing sound insulating material for automobile carpet, comprises ethylene vinyl acetate resin, linear low-density polyethylene resin, synthetic rubber, and inorganic filler containing e.g. wollastonite and kaolin |
| DE202021103994 | (DORF-N) GEBR DORFNER GMBH & CO KAOLIN & KRISTALL | Composite material used for e.g. kitchen sinks, comprises organic binder and mineral filler comprising elastomer granulate as filler |
| WO2021171765 | (JAPS) JSR CORP | Dispersion composition used for forming e.g. transparent conductive film, comprises to-be-dispersed material, dispersion medium, and polymer which is partially-imidized polyamic acid, having specific structure such as steroid structure and/or partial structure |
| EP3868816 | (SABI) SHPP GLOBAL TECHNOLOGIES BV | Thermoplastic composition for e.g., component of LED, comprises high-heat base resin, reinforcing filler, laser direct structuring additive comprising tin oxide and/or antimony oxide, and reflection additive comprising titanium compound |
| WO2021168075 | (DOWO) DOW SILICONES CORP | Photocurable silicone composition used in potting agent, sealing agent and adhesive agent for e.g. optical devices has organopolysiloxane, polysiloxane block copolymer of polysiloxane and organo block, photoinitiator and inorganic filler |
| WO2021161764 | (SUME) AUTONETWORKS TECHNOLOGIES LTD (SUDE) SUMITOMO DENSO KK (SUME) SUMITOMO ELECTRIC IND LTD (SUME) SUMITOMO WIRING SYSTEMS LTD | Thermoconductive material used for e.g. wire harness for electric vehicle, comprises base resin and insulating filler comprising heat conductive filler and hollow filler which are particles comprising air layer |
| JP2021102675 | (TOXW) TOYO INK SC HOLDINGS CO LTD | Colored resin composition for molded object comprises polyolefin resin, inorganic pigment, and compatibilizing agent which is a polymer which has acidic functional group |
| WO2021161996 | (POPL) POLYPLASTICS KK | Manufacture of polyarylene sulfide resin composition for forming molded articles, involves mixing alkoxy silane compound with polyarylene sulfide resin, condensing alkoxy silane compound, and adjusting condensate in obtained masterbatch |
| WO2021158497 | (LUBR) LUBRIZOL ADVANCED MATERIALS INC | Composition used for producing masterbatch, comprises particulate solid, plastic material and polymer |
| KR20210092543 | (GLDS) LG ELECTRONICS INC | Lightweight composite composition useful as component material for finished products, covers of various electronic devices comprises polypropylene-based resin, hollow glass, inorganic fibers, maleic anhydride and nano-inorganic powder |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|--|
| WO2021157605 | (UBEI) UBE IND LTD | Polyamide resin composition used for forming molded article such as air intake ducts, intake manifolds, fuel filler tubes and fuel delivery pipes, comprises polyamide resin comprising aliphatic homopolyamide resin and aliphatic copolyamide resin, impact resistant material, and inorganic compound |
| WO2021149690 | (SEKI) SEKISUI CHEM CO LTD | Thermally conductive sheet used in laminate, comprises layer made of composition containing boron nitride particles having preset average aspect ratio measured from long and short diameters of primary particles using image analysis software |
| EP3851482 | (EAYT) EATON INTELLIGENT POWER LTD | Composition for forming article e.g. tube, comprises single nylon polymer, conductive nanomaterials, dielectric filler comprising an inorganic, non-conductive, non-platelet nanomaterial containing alumina nanotubes, and dispersing agent |
| WO2021137520 | (LOTT) LOTTE CHEM CORP | Thermoplastic resin composition used for forming reflector, comprises polyester resin comprising formic acid-containing repeating unit, white pigment, glass fiber comprising circular cross-section glass fiber, boehmite, and zinc borate |
| WO2021131803 | (FUJF) FUJI FILM CORP | Composition used in heat conductive sheet for device e.g. personal computers, general home appliances, and automobiles, comprises disk-shaped compound, polymer compound comprising thermoplastic resin and rubber, and/or inorganic particles |
| WO2021125402 | (HARM-I) HARM J Y (HARM-I) HARM J | Polylactic acid filament composition for forming molded article, comprises polylactic acid, polybutylene succinate, polybutylene adipate terephthalate, additive, crystallization nucleating agent, inorganic filler and crosslinking agent |
| WO2021122182 | (CVST) COVESTRO INTELLECTUAL PROPERTY GMBH & CO | Producing molding compound used to produce injection molded body, comprises e.g. preparing masterbatch containing polycarbonate, reinforcing filler and other masterbatch components, and adding polycarbonate and reinforcing filler |
| EP3848410 | (BRUE-N) BRUEGGEMANN GMBH & CO KG L | Stabilization of polyamides used in e.g. sensors and engine compartment, involves mixing polyamide with polyol compound, halogen and copper free antioxidant |
| WO2021122183 | (CVST) COVESTRO INTELLECTUAL PROPERTY GMBH & CO | Production of master batch for forming molding compound, involves compounding polycarbonate, reinforcing filler selected from titanium dioxide, talc, dolomite, kaolinite and/or wollastonite, and other master batch components in kneader |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|----------------------|--|
| WO2021123691 | (AQOR) ARKEMA FRANCE | Composition used to make thermoplastic, thermoset or composite acrylic or methacrylic resins comprises e.g. (meth) acrylic monomer, (meth) acrylic polymer, organic peroxide having hemiperoxyacetals and inorganic filler |

Estabilizadores

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|-------------------------------------|--|
| EP3848410 | (BRUE-N) BRUEGGEMANN GMBH & CO KG L | Stabilization of polyamides used in e.g. sensors and engine compartment, involves mixing polyamide with polyol compound, halogen and copper free antioxidant |

Biocidas

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|---|
| TW202043343 | (MENG-N) MENG SIN MATERIAL CO LTD | Antibacterial film comprises plastic powder, antimicrobial powder or antibacterial liquid, and additives |
| KR102289858 | (NTRI-N) NTRIUM INC | Antibacterial and antiviral ink useful in flooring of schools, kindergartens, and children's houses, comprise acrylic resin, hydroxyapatite, calcium carbonate, zinc oxide, and other additives |
| DE202021001844 | (BRIN-N) BRINKHUS KUNSTSTOFFVERARBEITUNG GMBH | Bactericidal, fungicidal and antiviral polymer composition used for producing molded article, is made of polyamide, polyolefin or styrene polymer and is added with oxide of magnesium or calcium |
| JP2021107429 | (IBIG) IBIDEN CO LTD | Antimicrobial component used for handle, handrail and grip portion of strap, comprises base material surface comprising elastomer comes to securely form binder cured material containing antimicrobial material and dispersed in island shape and fixed to surface of base material surface, or region |
| JP2021107428 | (IBIG) IBIDEN CO LTD | Anti-microbial member i.e. antiviral member for use in handrails, comprises cured binder containing antimicrobial component fixedly formed on surface of base material made of polyurethane resin, where binder is dispersed in island shape |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|-------------------|---|
| KR20210083519 | (SHIN-I) SHIN D S | Manufacturing polyester masterbatch containing antibacterial and deodorant substances comprise melting polyester, heating in first section, adding deodorant zeolite and antimicrobial agent and extruding zeolite coated with titanium |

Ignífugos

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|---|
| WO2021170599 | (BADI) BASF SE | Polyolefin composition used to flame-retardant article e.g. films, fibers, tapes and molding comprises amine compound, hydrotalcite or inorganic oxide and hydroxylamine stabilizer or amine oxide stabilizer |
| EP3872124 | (INTU-N) INTUSEAL SP ZOO | Thermoplastic composite material for passive fire protection device having a form of fire protective, comprises polymer matrix material having Vicat softening point below a given value, expandable graphite, vermiculite, and halloysite |
| KR102292688 | (DAIN-N) DAIN POWERTEC CO LTD (SHIN-N) SHINMYUNGPP CO LTD | Flame-retardant double insulation pipe useful for e.g. underground burial and building, comprises e.g. inner pipe, heat insulating material made of polyurethane material, coupling agent, dispersant, polyethylene wax and antioxidant |
| WO2021153988 | (GLDS) LG ENERGY SOLUTION LTD (UKUK) UNIV KONKUK IND COOP CORP | Composite pad used for secondary battery module, comprises laminate of polymer resin monolayer film comprising fire-extinguishing material which acts in lower temperature range than that another polymer resin monolayer film |
| GB2591121 | (FLOR-N) FLOREON-TTRANSFORMING PACKAGING LTD | Flame resistant blend used for forming article, comprises polylactic acid, impact strength or flow rate modifier containing polybutylene adipate-co-terephthalate, polybutylene terephthalate and polybutylene succinate, and flame retardant |
| KR20210077061 | (KANG-I) KANG W S | Flame retardant composition useful for interior and exterior materials of buildings, comprises urethane, expandable graphite, tris(2-chloroethyl) phosphate, aluminum hydroxide and/or calcium carbonate, and rice husk and/or rice bran |
| WO2021140552 | (POPL) POLYPLASTICS KK | Flame-retardant polybutylene terephthalate resin composition used for forming insulation component, contains polybutylene resin and flame retardant, and has preset content of halogenated aromatic compounds other than flame retardant |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|--|
| WO2021133295 | (IZMI-N) IZMIR EGITIM SAGLIK SANAYI YATIRIM AS | Composite material used for e.g. rail vehicle, comprises polyketone as main matrix component, organic phosphonate or melamine polyphosphonate and synergetic substance such as zinc borate, boehmite, magnesium hydroxide or siloxane |
| KR102270833 | (ACEM-N) ACE METAL CO LTD (SUNB-I) SUN B W (YOUR-I) YOU-RAK C | Flame-retardant insulation bar useful in flame-retardant insulated windows comprises comprises thermal insulation composition containing base resin i.e. polyamide, polyurethane, polyester, additive, nitrogen-based flame retardants |
| DE102020007597 | (JACK-N) JACKON APPL GMBH | Manufacturing flame-retardant/fire-retardant foam products from mixture with atactic polystyrene, comprises e.g. introducing feedstock including polystyrene and lignin and/or lignin derivatives into extruder, melting polystyrene, and mixing |
| WO2021124726 | (TORA) TORAY IND INC | Molding material used for forming fiber-reinforced resin molded article, comprises amorphous thermoplastic resin, reinforced fiber and phosphorus-based flame retardant, and has preset thermal reduction under preset conditions |
| EP3875516 | (ELEX) ELECTROLUX APPLIANCES AB | Flame resistant component that is made of composition comprising raw polyamides, mineral filler, masterbatch comprising bi- and/or polyfunctional monomers and masterbatch polymer, and additives, used e.g. in electrical household appliances |

Antiestáticos

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|----------------------------------|---|
| KR20210085163 | (YOOC-N) YOOCHANG HI TECH CO LTD | Manufacturing transport wheel e.g. for preventing static electricity using composition, comprises e.g. preparing free polymer mixture of polyol-isocyanate, and preparing antistatic composition by mixing solvent-antistatic agent |
| KR20210086177 | (KOLO) KOLON IND INC | Multilayer polymer film for manufacturing circuit board using photosensitive laminate, comprises e.g. antistatic coating layer formed on one surface of polyester substrate layer, and including binder resin and organic particles |

Autorreparadores

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--|---|
| KR20210102719 | (INHI) UNIV INHA RES & BUSINESS FOUND (NOVA-N) NOVATECH INT CO LTD | Self-healing conductive wire containing shape memory polymer material useful in portable electronic device comprises core of polymer material, conductive film coating surface of core, and droplets of non-volatile liquid |
| WO2021175799 | (FINM) LEONARDO SPA | Multifunctional composite material used for aeronautics applications contains polymeric matrix filled with electrically conductive nanoparticles combined with self-healing molecular filler contains molecules and oligomers containing groups |
| US2020061967 | (SMSU) SAMSUNG ELECTRONICS CO LTD | Laminate used in flexible window film i.e. used in electronic device e.g. smart phone, comprises substrate, self-healing layer on substrate, protective layer between substrate and self-healing layer, and surface layer on self-healing layer |
| WO2021149911 | (UYKR) UNIV KOREA RES & BUSINESS FOUND (USKK) UNIV SUNGKYUNKWAN RES & BUSINESS FOUND | Self-healing nerve suture patch comprises self-healing polymer and hydrogel patch, where hydrogel patch is alginate, polyacrylamide, polyetherimide, polyethylene glycol, polyethylene oxide and polyhydroxyethyl methacrylate |
| US2021206992 | (AUTO-N) AUTONOMIC MATERIALS INC | Self-healing coating formulation used for protecting substrate and maintaining adhesion of protective material to substrate, comprises one-component waterborne resin system, and healing agent encapsulated within microcapsule |
| US2021189187 | (TENE) UNIV TENNESSEE RES FOUND (UTBA) UT-BATTELLE LLC | Self-healing adhesive composition used to seal space in e.g. building or construction materials contains homogeneous mixture of self-healing polymer having hydrogen bonding groups or long-chain alkyl groups and extrudable adhesive polymer base having curable property and no self-healable property |
| WO2021138140 | (AUTO-N) AUTONOMIC MATERIALS INC | Self-healing coating formulation for protecting substrate and maintaining adhesion of protective material to substrate after degradation, comprises one-component waterborne resin system and healing agent encapsulated within a microcapsule |
| WO2021127807 | (EVON) EVONIK IND AG (JIAN-I) JIANG J | Preparation of dual-crosslinked hydrogel used as hydrogel precursor, involves functionalizing glycosaminoglycan with methacrylate, crosslinking methacrylate and hydrazide group, and photopolymerizing dynamic acylhydrazone |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|---|
| WO2021126128 | (ERME-N) ERMETAL OTOMOTIV VE ESYA SANAYI TICARET | Self-healing filament embodiment is made of polylactic acid polymer in which microcapsules comprises linseed oil in their core structure, comprises chitosan in shell structure which are integrated, microcapsules comprises hydrochloric acid |
| WO2021125880 | (GLDS) LG HAUSYS LTD | Sheet used for protecting automobile paint film, comprises base layer and coating layer comprising polyurea urethane polymer including urea repeating unit and urethane repeating unit |
| JP2021091782 | (TOYT) TOYOTA BOSHOKU CORP | New polyamide compound used in e.g. coating agents, comprises dicarboxylic acid units, and diamine unit |
| JP2021091779 | (TOYT) TOYOTA BOSHOKU CORP | New polyamide compound used in e.g. coating agents, comprises dicarboxylic acid units, and diamine unit |

Nanocomposites

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|---|--|
| US10766167 | (UYPR-N) UNIV PRINCE MOHAMMAD BIN FAHD | Making polyolefin-carbon nanomaterial composite involves e.g. mixing graphene nanoplatelets with low density polyethylene powder to form mixture, ball milling the mixture in high-energy shaker and molding the formed composite powder |
| RU2751882 | (UYST-N) UNIV STANKIN MOSC TECHNOLOGY | Method for production of composite material with oriented carbon nanotubes |
| US2021206089 | (BOEI) BOEING CO | Method for fabricating additive manufacturing materials and particularly for making additive manufacturing pieces with contiguous paths of nanomaterial, involves depositing a first heated filament and a second heated filament |
| WO2021167881 | (XGSC-N) XG SCI INC | Article of graphene-modified polymeric foam used for forming plastic material, comprises polymer resins which are intermixed as filler, and graphene-based cell modifier comprising two-dimensional flake material with preset thickness and diameter, incorporated by infusing precursors for polymer resin |
| US2021190995 | (SHAM-N) SHAMIR OPTICAL IND LTD | Lens with antifog coating comprises lens comprises antifog hydrophilic layer comprises polymeric matrix and migratory surfactant compounds only on first surface of lens and first hydrophobic nanolayer comprises fluorinated organic silicon |

| Nº DE PUBLICACIÓN | SOLICITANTE | CONTENIDO |
|-------------------|--------------------------------------|---|
| KR20210096953 | (ADRE-N) ADVANCED MFG KOREA RES CENT | Method for manufacturing fuel cell separator, involves preparing carbon composite plate comprising thermoplastic resin containing conductive nanomaterials, and providing mold for forming separator with channel shape |
| US2021197450 | (ITRI) IND TECHNOLOGY RES INST | Composition for selective laser sintering three-dimensional printing, comprises nanoscale inorganic powder and thermoplastic vulcanizate powder comprising thermoplastic and crosslinked polymer and having preset particle size distribution |
| EP3851482 | (EAYT) EATON INTELLIGENT POWER LTD | Composition for forming article e.g. tube, comprises single nylon polymer, conductive nanomaterials, dielectric filler comprising an inorganic, non-conductive, non-platelet nanomaterial containing alumina nanotubes, and dispersing agent |
| US2021098888 | (SOCR-I) SOCRANSKY A | Parabolic reflector for moldable material for terrestrial, marine, aeronautical and space applications, includes monolithic structure comprising carbon nanotubes for reflecting radio frequency energy, and carbon nanofiber |
| EP3838973 | (SABI) SHPP GLOBAL TECHNOLOGIES BV | Forming polymer bead foam in article for component of aircraft, by saturating pellets with blowing agent to form saturated pellets comprising matrix polymer component, and/or nanostructured fluoropolymer, and forming foamed beads |
| US2019159937 | (IBMC) INT BUSINESS MACHINES CORP | Antimicrobial bandage apparatus, has attachment mechanism for removably attaching substrate, and nanostructure film provided on surface of substrate and contacting wound when substrate is attached to part of body comprising wound |
| WO2021161864 | (POPL) POLYPLASTICS KK | Composition for forming molded article e.g. electrical and electronic component, comprises carbon nanotubes having preset length and aspect ratio, and polyarylene sulfide resin having preset melt viscosity measured at preset temperature and shear rate |

VOLVER A
CONTENIDO

NOTICIAS

LA OFICINA EUROPEA DE PATENTES PUBLICA UN ESTUDIO CON EL TÍTULO "PATENTES PARA LOS PLÁSTICOS DEL MAÑANA: TENDENCIAS MUNDIALES DE INNOVACIÓN EN MATERIA DE RECICLAJE, DISEÑO CIRCULAR Y FUENTES ALTERNATIVAS"



La Oficina Europea de Patentes (EPO) acaba de publicar recientemente un estudio bajo el título "Patentes para los plásticos del mañana: Tendencias mundiales de innovación en materia de reciclaje, diseño circular y fuentes alternativas" con objeto de ser un modelo a considerar para la clase política y empresarial, y así optimizar recursos orientándolos hacia vías de innovación tecnológica basadas en el crecimiento sostenible a largo plazo.

El estudio sitúa a Europa y Estados Unidos como líderes en tendencias de innovación en materia de tecnologías de reciclaje de plásticos y plásticos alternativos.

El informe se basa en el análisis exhaustivo de la información contenida en documentos de patentes del periodo comprendido entre los años 2010 y 2019, concretamente en el número de familias de patentes internacionales (IPF por sus siglas en inglés) que representan invenciones de alto valor.

El estudio manifiesta que las tecnologías de reciclado basadas en métodos químicos y biológicos, son las que más patentes concentran, liderando la innovación en bioplásticos las industrias relativas a cosméticos, detergentes y salud.

El campo de los plásticos alternativos, cuya tecnología de reciclaje es más sencilla, manifiesta una tasa de crecimiento anual media del 10% desde el principio del periodo en estudio. La innovación en este tipo de plástico alternativo denominado unión covalente dinámica, que es de naturaleza duradera y autoreparable, sería potencialmente aplicable a los sectores aeroespaciales, el transporte, las turbinas eólicas y la microelectrónica.

Atendiendo a los datos obtenidos en el informe, se concluye que Europa y Estados Unidos representan conjuntamente el 60% de la totalidad de patentes relativas al reciclaje de plásticos y bioplásticos, siendo Alemania el país europeo que mayor dinamismo patentario mostró en estos campos.

Con respecto a España, nuestro país se sitúa por encima de la media europea en reciclaje de plásticos y tecnologías de innovación de bioplásticos.

Las empresas españolas y centros de investigación, entre los que destaca como principal innovador el [Consejo Superior de Investigaciones Científicas](#) (CSIC), presentaron un mayor número de patentes en el campo de reciclaje y bioplásticos en comparación con el resto de países europeos. Por ello, el informe otorga a España el tercer grado de especialización en tecnologías de reciclaje y bioplásticos. Nuestro país supone el 5% de la Unión Europea de los documentos de patente de familias internacionales (IPF) relativos a bioplásticos y el 4% relativos a reciclaje.

En palabras del Presidente de la EPO, António Campinos: "*Este informe destaca la contribución de Europa hacia una economía circular para los plásticos, pero muestra que se puede hacer más para transferir la investigación fundamental a la industria.*"

[Informe completo](#)

DEL RECICLAJE AL UPCYCLING: UNA FORMA MÁS INTELIGENTE DE LIDIAR CON EL PLÁSTICO

Reciclar plástico de manera limpia puede ser costoso y, por lo general, produce productos de menor valor, lo que a menudo lo hace financieramente inviable. Un nuevo método desarrollado por investigadores de la Universidad RMIT puede producir productos de alto valor a partir de plástico (nanotubos de carbono y combustible líquido limpio) al mismo tiempo que recicla los desechos agrícolas y orgánicos. El proceso convierte los desechos orgánicos en una forma de carbón rica en carbono y de alto valor, y luego lo usa como catalizador para reciclar el plástico.

<https://phys.org/news/2021-09-recycling-upcycling-smarter-plastic.html>

EL USO DE RESIDUOS PLÁSTICOS EN EL HORMIGÓN SE PRESENTA COMO SOLUCIÓN.

La empresa CRDC (Center for Regenerative Design and Collaboration) explica cómo introducir residuos plásticos en hormigón u otras aplicaciones en construcción se puede presentar como una alternativa circular respecto al uso de los residuos plásticos. Agregar material reciclado hace que los materiales de construcción sean hasta un 15 por ciento más livianos o más fuertes con un aislamiento hasta un 20 por ciento mejor, según la aplicación.

<https://plasticmoldingnews.com/developers-see-hope-in-the-use-of-plastic-waste-in-concrete/>

I SEMINARIO INTERNACIONAL DE RECICLADO DE PLÁSTICOS

La valorización y el reciclado de plásticos es el mayor reto actual para implementar el modelo de economía circular que permita el uso de los residuos como materia prima de partida. El reciclado y en general la valorización de residuos plásticos es el mayor reto actual para implementar el modelo de economía circular que permita el uso de los residuos como recursos como nuevas materias primas más sostenibles. En este Seminario trataremos los retos y oportunidades actuales relacionados con la gestión y reciclado de los residuos plásticos, así como daremos a conocer todas las iniciativas que se están poniendo en marcha a nivel internacional para alcanzar los objetivos marcados a nivel europeo.

<https://www.aimplas.es/plasticsacademy/convocatoria/i-seminario-internacional-de-reciclado-de-plasticos-2/>

LA INDUSTRIA EUROPEA DEL RECICLAJE CELEBRA EL OBJETIVO DEL 30% DE CONTENIDO RECICLADO EN LOS ENVASES PROPUESTO POR LOS PRODUCTORES DE PLÁSTICOS

La Confederación Europea de Industrias de Reciclaje (EuRIC) ha acogido con gran satisfacción el llamamiento realizado por PlasticsEurope para lograr un objetivo de contenido reciclado obligatorio para envases de plástico del 30% para 2030 en la UE, y espera trabajar con toda la cadena de valor de envases para respaldar una ambiciosa revisión de la Directiva sobre envases y residuos de envases

Con un espacio sustancial para mejorar la absorción de materias primas provenientes del reciclaje en varios tipos de envases de plástico, la industria del reciclaje espera cooperar con la del plástico para cumplir con ese objetivo para 2030.

<https://www.residuosprofesional.com/euric-objetivos-contenido-reciclado-plasticseurope/>

NUEVOS CONVENIOS FIRMADOS POR LA OEPM

La colaboración entre instituciones resulta fundamental para el avance de la sociedad en general y de la economía del país. Desde la **OEPM** esto lo tenemos muy claro, y por ello impulsamos la firma de diferentes convenios con distintas entidades de ámbitos tan diversos como la alimentación, el agua, los muebles y metales, el plástico o la energía solar entre otros.



La finalidad de estos convenios es impulsar la competitividad de la industria española en el ámbito de la innovación y su protección mediante la Propiedad Industrial (PI). Para ello, en sus correspondientes resoluciones se contempla la realización de actividades conjuntas, entre otras las jornadas formativas sobre los derechos de PI, que pretenden dar a conocer la utilización de los servicios de información tecnológica que ofrece la OEPM, los mecanismos de protección de los resultados de investigación y desarrollo tecnológico. Además, la OEPM les ofrece el apoyo

necesario en la protección de sus activos intangibles con el fin de facilitar, impulsar y estimular el conocimiento y la utilización de los derechos de PI.

Sin duda alguna, estos convenios van a resultar una herramienta de cooperación muy útil para la promoción de la PI y sus beneficios en el desarrollo científico, económico y social de nuestro país.

Más información

[La Oficina Española de Patentes y Marcas, O.A., y la Federación Española de Industrias de Alimentación y Bebidas \(FIAB\) firman un nuevo convenio de colaboración](#)

[La OEPM firma cuatro nuevos convenios de colaboración en materia de propiedad industrial con las siguientes plataformas y asociaciones tecnológicas: AIMPLAS, PLATECMA, PTECO2 y SOLAR CONCENTRA – PROTERMOSOLAR](#)

[La OEPM y la Plataforma Tecnológica Española del Agua firman un nuevo convenio de colaboración en materia de Propiedad Industrial](#)

[Nuevo convenio de colaboración entre la OEPM y el Instituto Tecnológico Metalmecánico, Mueble, Madera, Embalaje y afines, para impulsar la Propiedad Industrial dentro de la plataforma Tecnológica Forestal Española, PTFOR](#)

CÓMO PROTEGER TUS DERECHOS DE PROPIEDAD INDUSTRIAL (DPI) SI ERES UNA PYME, EMPRESA O EMPRENDEDOR

¿Sabrías cómo proceder si infringen uno de tus Derechos de Propiedad Industrial?

[La Oficina Española de Patentes y Marcas, O.A. \(OEPM\)](#) ha publicado recientemente un folleto que recoge las pautas de cómo actuar y defenderse si sufrimos vulneración de una creación que implique un Derecho de Propiedad Industrial (DPI): una marca, un diseño, o una invención.

Dividido en cuatro líneas principales, el folleto desglosa qué medidas deben tomarse frente al uso no autorizado de terceros de nuestros DPI:

1. **Comenzando un negocio:** registra los activos intangibles para poder probar que son tuyos. Aprovecha los servicios de asesoramiento gratuitos que ofrece la OEPM, como el Servicio de Apoyo a la Empresa y evita los errores más comunes.
2. **Gestiona tu negocio:** infórmate sobre los servicios de vigilancia y haz un seguimiento activo del estado de tus DPI.

3. **Haz que tu negocio crezca:** infórmate de cómo proteger tus marcas, diseños e invenciones si vas a exportar o a exhibirlas en ferias o exposiciones. También valora la idoneidad de informar a aduanas.
4. **Defiende tu negocio:** se pueden tomar diversas vías y todas tienen ventajas e inconvenientes y debe decidirse cuál es la más adecuada según el caso. Muchas veces es una cuestión de elección del perjudicado de una vía u otra y otras veces, en función de dónde se produce la infracción o cuál es el resultado que se desea obtener. Por tanto, siempre es buena idea disponer de asesoramiento profesional. Se debe estudiar bien la situación y valorar costes y beneficios. Recabar todas las pruebas posibles de la presunta infracción. En el folleto también se ofrece una guía de actuación dependiendo del lugar donde se produce la infracción: en el mercado español, en la frontera de España, en el mercado interior de la Unión Europea, en terceros países o en el mundo digital.



Protege tu negocio. Mientras determinadas empresas apuestan por la calidad y la innovación de sus productos para crear valor añadido y diferenciarse de la competencia, existen agentes, en muchos casos mafias, que no dudan en infringir los derechos exclusivos y aprovecharse de la reputación ajena. Protege tus DPI, para que puedas defenderte y otros no se aprovechen de tus creaciones e invenciones.

El folleto puede descargarse [aquí](#) y también pueden visualizarse en el portal [Stopfalsificaciones](#).

VENTAJAS DE TRABAJAR EN LA OEPM



La **Oficina Española de Patentes y Marcas, O.A. (OEPM)** es un organismo dependiente del Ministerio de Industria, Comercio y Turismo dedicado a la Propiedad Industrial, de carácter dinámico y con vocación internacional.

¿Te interesaría trabajar en la OEPM? ¡Conoce las ventajas de trabajar en la OEPM!

Recientemente, se ha publicado un folleto explicativo y un catálogo en el que figuran los

motivos por los que es atractivo trabajar en la Oficina Española de Patentes y Marcas, O.A. (OEPM).

El objetivo de estos documentos no es otro que el de atraer talento y hacer más visible a la OEPM como destino para trabajar, dentro de un contexto de una competitividad cada vez mayor y unos recursos humanos cada vez más escasos.

Más información:

https://www.oepm.es/es/sobre_oepm/empleo/index.html

[Folleto Ventajas OEPM](#)

[Catálogo Ventajas OEPM](#)

