VT BIOMASA
PATENTES
34
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Vigilancia Tecnológica
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PRODUCTOS BIOFARMACÉUTICOS: PROYECTOS EUROPEOS

La biofarmacéutica destaca como uno sector de rápido crecimiento e interés dentro de la industria farmacéutica. Los biofármacos -que incluyen vacunas, alergénicos y terapias génicas- son biomoléculas desarrolladas mediante la biotecnología, la cual utiliza procesos biológicos para diseñar o fabricar medicamentos y otros productos valiosos.

Los proyectos europeos en el ámbito de la biofarmacéutica vienen experimentando un extraordinario crecimiento desde las primeras covocatorias (Figura 1), habiéndose identificado 64 proyectos en el programa H2020. La Tabla 1 recoge los proyectos actualmente en curso.

En la Figura 2 se muestran los países líderes de los proyectos del programa H2020 en este campo, siendo Reino Unido, España e Irlanda los situados a la cabeza de este Programa.

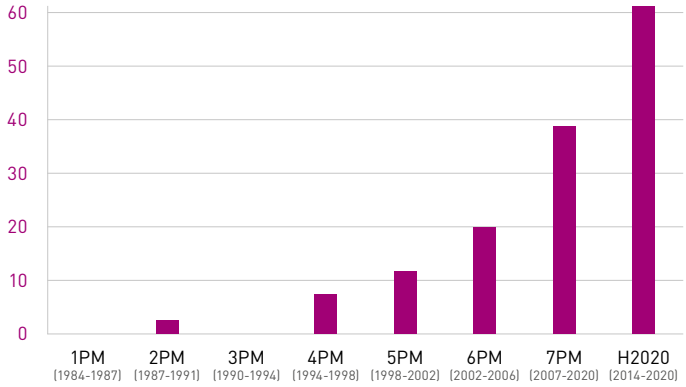

Figura 1. Proyectos europeos financiados en los distintos Programas Marco y H2020

Tabla 1. Proyectos H2020

IM2PACT: Investigating Mechanisms and Models Predictive of Accessibility of Therapeutics (IM2PACT) into the brain	
Fecha de inicio: 01/01/2019 **Coordinador:** The Chancellor, Masters and Scholars of Oxford Univ (Reino Unido)	**Fecha de finalización:** 31/12/2023
Newcotiana: Developing multipurpose nicotiana crops for molecular farming using new plant breeding techniques	
Fecha de inicio: 01/01/2018 **Coordinador:** CSIC (España)	**Fecha de finalización:** 30/06/2022
iConsensus: Integrated control and sensing platform for biopharmaceutical cultivation process high-throughput development and production	
Fecha de inicio: 01/05/2018 **Coordinador:** Kungliga Tekniska Hoegskolan (Suecia)	**Fecha de finalización:** 30/04/2022
iReceptor Plus: Architecture and tools for the query of antibody and T-cell receptor sequencing data repositories for enabling improved personalized medicine and immunotherapy	
Fecha de inicio: 01/01/2019 **Coordinador:** Bar Ilan University (Israel)	**Fecha de finalización:** 31/12/2022
ORBIS: Open Research Biopharmaceutical Internships Support	
Fecha de inicio: 01/03/2018 **Coordinador:** Univ Medyczny im Karola Marcinkowskiego W Poznaniu (Polonia)	**Fecha de finalización:** 28/02/2022
PEPPER: Industrial-scale plant-based protein production in a cell-free platform	
Fecha de inicio: 01/12/2019 **Coordinador:** LenioBio GmbH (Alemania)	**Fecha de finalización:** 30/11/2021
Light4Sight: Light-activated carriers for the controlled delivery of therapeutic peptides in posterior segment eye diseases	
Fecha de inicio: 01/11/2019 **Coordinador:** Queen Mary Univ London (Reino Unido)	**Fecha de finalización:** 31/10/2021
EuroNanoMed III: ERA-net on nanomedicine	
Fecha de inicio: 01/11/2016 **Coordinador:** Instituto de Salud Carlos III (España)	**Fecha de finalización:** 31/10/2021
IL7RsignaTHER: Antibody-based IL-7R targeted therapies	
Fecha de inicio: 01/01/2020 **Coordinador:** Instituto Medicina Molecular Joao Lobo Antunes (Portugal)	**Fecha de finalización:** 30/06/2021
PATGlycoPrint: Development of a new process analytical technology based on an innovative nanoplasmonic detection array for monitoring glycosylation of monoclonal antibodies	
Fecha de inicio: 01/05/2019 **Coordinador:** Linkopings Univ (Suecia)	**Fecha de finalización:** 30/04/2021
GlycoMabs: Chemoenzymatic glyco-engineering of therapeutic monoclonal antibodies	
Fecha de inicio: 16/04/2019 **Coordinador:** Asociación Centro de Investigación Cooperativa en Biociencias (España)	**Fecha de finalización:** 15/04/2021
SeaBest: Launching first large-scale organic seaweed-to-food cultivation and processing in EU	
Fecha de inicio: 01/03/2019 **Coordinador:** Seaweed Energy Solutions AS (Noruega)	**Fecha de finalización:** 28/02/2021
LCxLCProt: Comprehensive two-dimensional liquid chromatography for the characterization of protein biopharmaceuticals at the protein level	
Fecha de inicio: 01/01/2020 **Coordinador:** Univ Gent (Bélgica)	**Fecha de finalización:** 31/12/2020
CARBOMET: Metrology of Carbohydrates for Enabling European Bioindustries	
Fecha de inicio: 01/01/2017 **Coordinador:** Univ Manchester (Reino Unido)	**Fecha de finalización:** 31/12/2020
AMECRYS: Revolutionising downstream processing of monoclonal antibodies by continuous template-assisted membrane crystallization	
Fecha de inicio: 01/10/2016 **Coordinador:** Consiglio Nazionale delle Ricerche (Italia)	**Fecha de finalización:** 30/09/2020
MiChomAbs: Synthetic Mini-Chromosomes for Antibody production	
Fecha de inicio: 01/12/2019 **Coordinador:** Ribbon Biolabs GmbH (Austria)	**Fecha de finalización:** 31/05/2020

PHOTO-FLUOR: Enantioselective Carbon-Fluorine Bond Formation: A molecular editing approach toward drug discovery
Fecha de inicio: 09/05/2018 **Fecha de finalización:** 09/05/2020 **Coordinador:** Institut Catala D'investigacio Quimica (España)
PEARRL: Pharmaceutical Education And Research with Regulatory Links: Innovative drug development strategies and regulatory tools tailored to facilitate earlier access to medicines
Fecha de inicio: 01/05/2016 **Fecha de finalización:** 30/04/2020 **Coordinador:** Univ Cork-Natl Univ Ireland (Irlanda)
GlypStx: Glycoprotein-based inhibitors of shiga-like toxin
Fecha de inicio: 01/02/2018 **Fecha de finalización:** 30/03/2020 **Coordinador:** Univ Leeds (Reino Unido)
DiViNe: Sustainable downstream processing of vaccines through incorporation of nanobiotechnologies: Novel affinity ligands and biomimetic membranes
Fecha de inicio: 01/03/2015 **Fecha de finalización:** 29/02/2020 **Coordinador:** Instituto de Biologia Experimental e Tecnologica (Portugal)
MABIOS: The first microalgae platform for the production of anticancer biopharmaceuticals
Fecha de inicio: 01/08/2019 **Fecha de finalización:** 31/01/2020 **Coordinador:** Microalgae Works BV (Países Bajos)

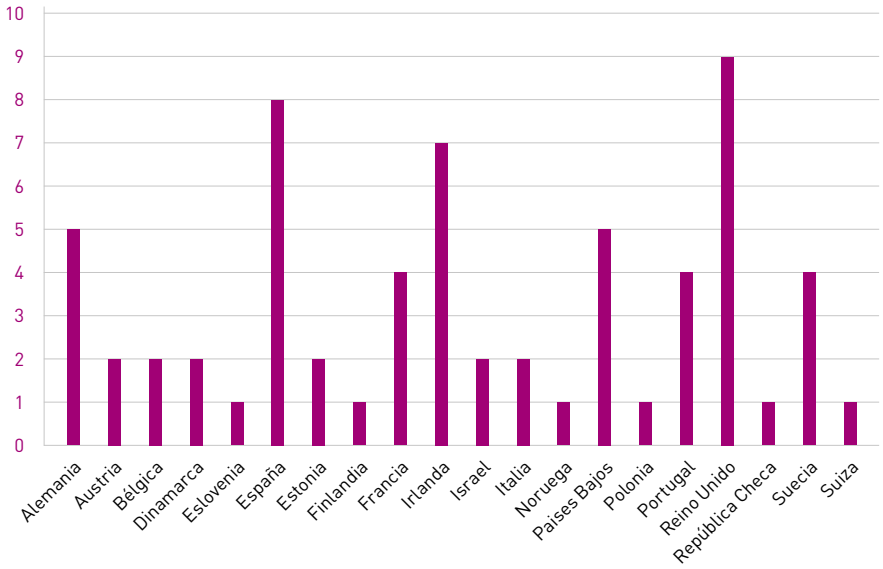

Figura 2. Países líderes de los proyectos H2020

PATENTES BIOENERGÍA

Biocombustibles sólidos (pellets, biochars, bio RDFs, bio SRFs, etc.)

Nº Publicación	Solicitante (País)	Contenido técnico
WO2019186216	Agricarbon KFT (HU)	**Method and apparatus for processing biomass.** In a process for the treatment of biomass, the moisture content of the biomass feedstock is reduced, if necessary, to less than 12%; the dried feedstock is fed in vacuumed portions to a heat treatment roasting furnace and roasted at heat treatment temperature in the range of 220-300°C, predetermined in function of the target calorific value of the end-product; the end-product is delivered from the roasting furnace to the cooler and cooled to below its ignition temperature, then withdrawn for further utilisation. Before feeding the first portion of the dried feedstock into the roasting furnace, the interior of the roasting furnace is evacuated; the gaseous medium generated during roasting is disposed of; and during heat treatment of the feedstock in the roasting furnace, the pressure in the roasting furnace is maintained continuously at a pressure exceeding 1.0 bar (a) by no more than 200 mbar(a). The drying air stream (a) used to reduce the moisture content of the raw material is warmed by the heating air stream (e) exiting the roasting furnace, the warmed-up cooling medium stream (f) used for cooling the end-product and the heat energy generated by the combustion of the gaseous medium generated during roasting; the cooling medium stream (f) used to cool the end-product is pre-cooled by the drying air stream (a) used to reduce the moisture content of the feedstock. The invention also concerns a device for implementing the biomass treatment method.
WO2019229526	Borregaard AS (NO)	**Antl-autooxidative wood pellet binder.** Formulations and methods of making wood pellets treated with lignin sulfonate as an anti-autooxidative component to reduce the rate of self-heating of bulk wood pellets. The lignin sulfonate may be used as a binder in the wood pellets or the wood pellets may be sprayed with lignin sulfonate for an encapsulated wood pellet. Wood pellets having the lignin sulfonate have a lowered potential of self-heating below high reactivity pellets and better structural durability during storage and transportation without adversely affecting the fuel value of the wood pellets.
GB2573217	Brian Elliott (GB)	**Solid fuel burner.** A burner comprises a primary combustion chamber with means for adjusting the volume of the primary combustion chamber, a means of delivering solid fuel to the primary combustion chamber, and a secondary combustion chamber. The primary combustion chamber may have a grate with the means for adjusting the volume of the primary combustion chamber formed by a further grate. The secondary combustion chamber may also have a grate. The primary combustion chamber may be directly above the secondary combustion chamber so that during combustion, solid fuel from the primary combustion chamber passes into the secondary combustion chamber. The burner may have a removeable ash tray which retains fully combusted solid fuel. The burner is suitable for burning biomass fuel and may comprise an induction chamber to extract heat to a connected heat load such as a water boiler, space heater, or oven.
EP3423751	Microsystemfuel SRL (IT)	**Biomass auto combustion chamber**. A combustion chamber comprises an internally hollow tank containing biomass to be combusted and gasified, air supply means to supply air inside the tank, gas supply means connected to a gas source to supply gas inside the tank, and valve means electrically connected to the control means to control the air flow and the gas flow inside the tank.
WO2019193084	Nibe AB (SE)	**Method for providing clean residential comfort heating.** The disclosure relates to a method for providing clean residential comfort heating in a space in a building, the method comprising: burning biomass in a burn chamber of a room heater, the room heater being positioned in a space to which space the room heater is intended to provide residential comfort heating, directing hot exhaust gases resulting from the burning of biomass from the burn chamber via a flue pipe to an outdoor environment outside the building, purifying said exhaust gases by directing said exhaust gases through a purifying filter in a smoke channel of the room heater or in the flue pipe, and regenerating the purifying filter by providing hot exhaust gases at a regeneration temperature of the purifying filter.

Nº Publicación	Solicitante (País)	Contenido técnico
US10436439	Original Pellet Grill Company LLC (US)	**Wood pellet burner unit with sliding floor hopper.** Embodiments include a wood pellet burner unit with a sliding floor hopper. The wood pellet burner unit includes a wood pellet fire pit, a wood pellet kettle burner, a wood pellet barbeque burner, and/or a wood pellet smoker, or the like. The sliding floor hopper includes an upper loading section having an opening therein that receives wood pellets, and a staging section coupled to the upper loading section and stages the wood pellets received from the upper loading section. A sliding floor is disposed atop a staging surface of the staging section and through a slit in the staging section. The sliding floor oscillates between a forward position and a back position. The sliding floor oscillates between a forward position and a back position to automatically and periodically feed the wood pellets to a lower region of the wood pellet burner unit on a continuous basis.
ES2733481	Pellasx Spolka ZOO Spolka Komandytowa (PO)	**Pellet burner with a rotary combustion chamber.** The subject of the invention is a cover of the combustion chamber in the pellets burner, having a housing with an inlet whole for pellets and rotary combustion chamber surrounded with a cylindrical cover, connected with the housing, in addition, a space between the combustion chamber and the cover is a ring-shaped duct supplying air into the combustion chamber circumferentially placed on it. The ring-shaped duct supplying air into the combustion chamber is closed in front of the cover with its flange ring directed towards inside of the chamber and a sealing ring operating together with it, connected permanently with the outer surface of the combustion chamber. According to the invention, a rear part of the cover is permanently connected with a compensatory plate, a surface of which is perpendicular to the longitudinal axis of the cover whereas, the compensatory plate is elastically connected with the burner housing.
WO2019224839	Rana Sukhdeep Singh (IN)	**Oil sludge based bio-fuel pellets and method thereof.** The present invention discloses bio-fuel pellets and the method for production of bio-fuel pellets which includes oily sludge and biomass. The proportion of biomass may vary from 50% -80% depending upon the water content of oil sludge, type of biomass used and application of the pellets more preferably comprises 65%-70 % of the total mass of the fuel pellet. Oil sludge content of total mass of the fuel pellet may vary from 20% to 50%. Biomass absorbs the excess water content of oil sludge and embodies with its oily content. The present invention provides a means to use the refinery oil sludge to manufacture easily usable and marketable product, without any segregation or further process.
WO2019240619	Solonin Mark (RU)	**Heating device.** The utility model relates to heat engineering, in particular to heating devices based on solid biofuel. The problem to be solved is to provide stable and ecologically clean combustion of wood which has a high moisture content. Said result is achieved in that an afterburning chamber is arranged within a gasification chamber (primary combustion chamber) and afterburning of coal-water gasification products is carried out in a swirl burner, wherein the gasification chamber does not have contact with the relatively cold heat carrier (water) at any point.
LT2019024	Vytauto Didziojo Univ (LT)	**Faba bean waste biofuel pellets and/or sorbent, fertilizer.** The invention relates to the field of bioenergy that solves the problems of the utilization of faba bean harvest waste for the production of biofuel because pellets produced from 100 % faba bean harvest waste comply with quality and environmental standards and are suitable for use in biofuels. Faba bean waste is usually dry enough at harvesting time and does not need to be dried for pelleting, which makes the production process cost-effective and environmentally friendly. The removal of faba bean waste from the field, unlike grain straw, does not reduce soil fertility which remains stable. Faba bean biofuel pellets have a greater bulk density than those produced from grass, straw or wood waste, making logistic more convenient and cheaper. In addition, faba bean waste biofuel pellets are resistant to crushing, resulting in less crumbling during transportation and packing. Faba bean waste pellets provide a high-quality and efficient burning process, and the emissions of harmful pollutants (carbon dioxide and monoxide, nitrogen oxides, unburned hydrocarbons and sulphur dioxide) do not exceed the permitted limits, so their use is permissible in low-power (up to 100 kW) boilers. The invention also relates to the field of agriculture that solves the problems of manure and slurry disposition and soil fertility restoration, because faba bean pellets effectively absorb moisture, and by saturating animal faeces and urine, they are excellent organic fertilizers, because the granules themselves contain up to 3 - 4 times more general crop macronutrients (N, P, K, Ca, Mg) compared to straw and sawdust.

Syngas		
Nº Publicación	Solicitante (País)	Contenido técnico
US2019334411	All Power Labs INC (US)	**Compact gasifier-genset architecture.** A compact biomass gasification-based power generation system that converts carbonaceous material into electrical power, including an enclosure that encases: a gasifier including a pyrolysis module coaxially arranged above a reactor module, a generator including an engine and an alternator, and a hopper. The generator system additionally includes a first heat exchanger fluidly connected to an outlet of the reactor module and thermally connected to the drying module, a second heat exchanger fluidly connected to an outlet of the engine and thermally connected to the pyrolysis module, and a third heat exchanger fluidly connected between the outlet of the reactor module and the first heat exchanger, the third heat exchanger thermally connected to an air inlet of the reactor module. The system can additionally include a central wiring conduit electrically connected to the pyrolysis module, reactor module, and engine, and a control panel connected to the conduit that enables single-side operation.
US2019359903	Aries Gasification LLC (US)	**Gasification reactor with discrete reactor vessel and grate and method of gasification.** A fluidized bed biogasifier is provided for gasifying biosolids. The biogasifier includes a reactor vessel and a feeder for feeding biosolids into the reactor vessel at a desired feed rate during steady-state operation of the biogasifier. A fluidized bed in the base of the reactor vessel has a cross-sectional area that is proportional to at least the fuel feed rate such that the superficial velocity of gas is in the range of 0.1 m/s (0.33 ft/s) to 3 m/s (9.84 ft/s). In a method for gasifying biosolids, biosolids are fed into a fluidized bed reactor. Oxidant gases are applied to the fluidized bed reactor to produce a superficial velocity of producer gas in the range of 0.1 m/s (0.33 ft/s) to 3 m/s (9.84 ft/s). The biosolids are heated inside the fluidized bed reactor to a temperature range between 900° F. (482.2° C.) and 1700° F. (926.7° C.) in an oxygen-starved environment having a sub-stoichiometric oxygen level, whereby the biosolids are gasified.
EP1841519	BTG Bioliquids BV (NL)	**Method for pyrolysis/gasification of biomass in a plant with dipleg.** The present invention relates to a dipleg. The concept of a dipleg is a tubular construction at whose top side solid matter is introduced, which will pile up to a certain height in this vertical tube. A dipleg may, for example, be used as solid matter outlet of a cyclone. The dipleg according to the invention is provided with an additional inlet for matter, allowing the composition of the solid matter in the dipleg to be varied as desired. In this manner the discharge properties and the packed weight of the solid matter in the dipleg can be adjusted with precision.
US2019367814	CHZ Tech LLC (US)	**Multistage thermolysis method for safe and efficient conversion of treated wood waste sources.** Clean, safe and efficient methods, systems, and processes for utilizing thermolysis methods to processes to convert various treated wood sources, such as rail road ties, cross ties, RR crossing roadways, telephone poles, utility poles, cross arm members, bridge timbers, decking, walkways, dock timbers and wharf pilings, lake and ocean pier/pilings, landscaping timbers and edging, treated outdoor engineering structural and other reinforced wood composites, and other end-of-life treated wood materials, into a Clean Fuel Gas and Biochar are disclosed. The invention processes the treated wood sources using thermolysis methods to destroy and/or separate halogen and other dangerous components to provide a Clean Fuel Gas and Biochar source.
GB2574335	Clean Thermodynamic Energy Conv LTD (GB)	**Energy generation system.** A heated gas generation system for generating heated gas from waste product, the system comprising: a gasifier which includes a primary chamber for receiving waste product and includes at least one air inlet and at least one gas outlet, wherein the gasifier is controlled, in a first mode of operation, to heat the waste product to extract syngas or synthetic gas from the waste product and deliver a stream of syngas through the at least one gas outlet, and subsequently, in a second mode of operation, following extraction of syngas from the waste product, to burn the waste product to provide a stream of heated gas and deliver the stream of heated gas through the at least one gas outlet; and a combustor which includes a secondary chamber which includes at least one gas inlet which is fluidly connected to the at least one gas outlet of the primary chamber, at least one air inlet and at least one gas outlet, wherein the combustor is controlled, in a first mode of operation, to maintain the secondary chamber at a temperature of at least 850°C and burn the stream of syngas which is delivered from the primary chamber in the first mode of operation of the gasifier to generate a stream of heated gas through the at least one gas outlet of the combustor, and, in a second mode of operation, delivers the stream of heated gas which is delivered from the primary chamber in the second mode of operation of the gasifier through the at least one gas outlet of the combustor.

Nº Publicación	Solicitante (País)	Contenido técnico
US10435295	Eddy Thomas L (US)	**Coupling an electric furnace with a liquid fuel synthesis process to improve performance when processing heterogeneous wastes.** An improved method for processing heterogeneous municipal solid waste, biomass and even construction and demolition waste into liquid hydrocarbon fuels and chemicals is obtained by coupling the synthesis process with an electric furnace. The furnace separates the metals and inorganics from the organic materials. The high temperatures gasify the organics into a relatively clean syngas after particulate and acid gas removal. The yield is increased above that expected from the feedstock by the addition of waste effluents from the synthesis process, such as CO2, H2O and possibly tail gas constituents. The recycled effluents are heated by the syngas being quenched in heat exchangers. Excess high pressure effluents are also heated by the syngas for power generation via gas or steam turbine generators. The optimum concentration of added effluents and heat exchanger configurations are determined by novel methods for maximum yield, energy efficiency and minimum carbon footprint.
GB2572409	George Hurudza Munyaradzi Mkushi (GB)	**Methods and systems of upgrading syngas via CO2 recovery.** An apparatus and method of upgrading/purifying syngas (CO and H2), comprising the step of; removing carbon dioxide (CO2) from input syngas to produce output syngas at a variable output flowrate, and using a buffer element before delivery of the output syngas to an end user in order to minimise variation in the output flowrate. The input syngas may be produced from biomass. Optionally, 85%-99.99% of CO2 is removed from the input gas. The apparatus comprises; i) a gas scrubber for removing CO2; ii) a buffer element for storing the output syngas. The buffer element may be a tank, vessel or balloon for storing the purified syngas. Second and third aspects are directed towards a method and system for producing syngas respectively. A fourth aspect is directed towards a method of delivering a consistent and/or high-quality syngas from a variable and/or low-quality input fuel using a method according to the first aspect.
US2019322953	Massachusetts Inst Technology (US)	**Novel engine concepts for handling producer gas from biomass.** Internal combustion engines tolerant to tar-containing producer gas are disclosed. Two concepts are described. The engines are tolerant to producer gas from a biomass gasifier with minimal pretreatment. When biomass is gasified to be burned for power generation or to be used to synthesize chemicals such as biofuels, a large fraction of the installation cost is spent on equipment to clean up the heavy organic components (also referred to as 'tars') from the gas stream, hereafter referred to as 'producer gas'. The invention described herein may be used to enable power generation from gasified biomass with minimal treatment. It may also be used to treat biomass at a very low cost for other uses such as synthesizing chemicals. The producer gas is not necessarily limited to biomass derived. Producer gas derived from coal or other sources has similar issues and the invention described herein would be equally applicable.
WO2019193098	Rosmarin Holdings Ltd (GB)	**Fixed-bed gasifier for generating a product gas from pourable biomass particles.** The invention relates to a downdraft fixed-bed gasifier for generating a product gas form purable biomass particles, in particular fibre-containing or slag-forming materials. The fixed-bed gasifier has a gasifier container, a feed for biomass particles in the upper region of the gasifier container, a grate for supporting the biomass particles in the gasifier container, an air feed for feeding combustion air into the gasifier container, and a gas outlet leading out if the gasifier container from the region under the grate. The substantially plane grate is arranged obliquely in the gasifier container and thus forms an inclined plane, on which the biomass is supported. By means of a grate drive device, the grate is movable to and fro in a direction transverse to the inclined plane and thus repeatedly forces slag lumps that fall in against the side wall opposite the grate, in order to break said lumps up. The movable grate co-operates with the the side wall of the gasifier container that is located opposite the same as a type of jaw crusher, as is known from the construction industry for comminuting demolition material. Sufficiently comminuted, the slag lumps then fall through the gaps in the grate or the gap at the lower end of the grate, between grate and side wall. Ash and comminuted slag lumps are led out of the gasifier container from the region underneath the grate.

Biogás

Nº Publicación	Solicitante (País)	Contenido técnico
US2019321780	Air Liquide Advanced Tech LLC (US)	**Multi-stage membrane for N2 rejection.** Nitrogen is removed from biogas using a three-stage separation system based on gas separation membranes. The first stage separates a biomethane feed stream into a first permeate gas stream and a first retentate gas stream. The second stage separates the first permeate stream into a biomethane product gas and a first low quality biomethane gas stream. The third stage separates the first retentate into a second low quality biomethane gas stream and a waste gas. A biogas feed stream is pretreated to remove amounts of water, VOCs, and CO2 to yield a methane-enriched biogas stream. The methane-enriched biogas stream is compressed together with the first and second low quality biomethane gas streams to form the biomethane feed stream.
WO2019240577	Biobrella BV (NL)	**A method of generating biogas, and a column.** A method of generating biogas in a pond, said pond comprising - pond water comprising digestible organic material, and - micro-organisms capable of forming biogas by digesting said digestible organic material; wherein at least part of the surface of the pond water in the pond is provided with a cover for collecting the generated biogas, the cover cooperates with a column; wherein the method comprises the steps of - supplying water containing digestible organic material to the pond, and - extracting biogas generated by the micro-organisms; For improved circulation of water in the pond below the cover, the column is a hollow column and pond water from the pond is passed through the hollow column.
WO2019231407	Bowornpatsajakorn Pongkorn (TH)	**Bio-methane production system.** A bio-methane production system is provided. The system is used for new source of clean energy that safety, could reduce pollution and also increase the value of waste with the standard production system in condition of safety and continuous operation. The system comprises a waste pump truck that sends the waste to the blend tank, a preparing waste tank, a fermentation tank, a gas pump, a gas separation system, a methane storage tank, and the other devices that necessary to the production system.
WO2019183702	Cava Antonio Carlos Barberena (BR)	**Modular system for capturing gas or biogas from organic material containment structures.** A modular system is described for capturing gas or biogas from organic material containment structures, said modular system comprising a containment structure in which the organic matter undergoes an anaerobic biological transformation process, said containment structure having at least one opening for access to the internal region provided with closing means or a seal; a collection pipe line provided with an extractor head coupled to the opening of the containment structure; a flexible pipe interlinked at one end to the extractor head and at the opposite end to an intermediary pipe line, and a main linear manifold pipe to which the intermediary pipe line is connected.
ES2735300	Consejo Superior Investigacion (ES)	**Method for the direct methanation of biogas.** The present invention relates to a method for obtaining a stable, selective and highly active catalyst and to its use in the direct methanation of biogas in intensified reactors that operate in a single stage with a high conversion level. The catalyst developed comprises a ruthenium-based formulation supported on cerium-modified alumina.
WO2019189994	Eco Bio Holdings Co Ltd (KR)	**Biogas Upgrading Pretreatment Method.** The present invention relates to a biogas upgrading pretreatment method for removing water, siloxanes, sulfides, vegetable oils and volatile organic compounds, which are all contained in biogas to be generated by anaerobic digestion in organic waste, the method comprising a compression step of compressing biogas by means of a water-lubricated oil-free type compressor.
WO2019185315	IFP Energies Now (FR)	**Method for pooled production of biomethane for injection into the natural gas network.** The invention relates to a process for pooled production of biomethane suitable for the centralized injection into the natural gas network using one or more biogas production sites Pi, i being between 1 and n, comprising the following steps: a) production of biogas by methanization of an organic feedstock at each production site Pi, b) partial purification, at each production site i, of the biogas produced including a partial decarbonation in order to obtain a partially purified biogas having a CH4 methane content of greater than 60% by volume at each production site Pi; c) packaging of the partially purified biogas in gaseous or supercritical form at each production site Pi; d) collection and transportation of all of the partially purified biogases of each of the production sites Pi using a collection device to a site for additional purification in the vicinity of said natural gas network; e) pooled additional purification of the partially purified biogases collected in step d) at said site for additional purification in order to obtain a pooled stream of biomethane. The biomethane produced may be injected into natural gas distribution networks or transportation networks, and/or directly supply local consumers, and/or supply a bioNGV fuel station.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2019239381	Sysadvance € Sist de Engenharia SA (PT)	**Multi-stage psa process to remove contaminant gases from raw methane streams.** The present application refers to a multi-stage process to remove contaminant gases from raw methane streams. The present technology is an innovative solution to recover and purify biogas by use of a process comprising at least two pressure swing adsorption stages. Taking advantage of the presence of carbon dioxide in the raw biogas streams, nitrogen and oxygen are bulky removed in the first stage, using selective adsorbents, and a nitrogen and oxygen-depleted intermediate stream is yielded to the second stage. The second stage employs an adsorbent or adsorbents to selectively remove carbon dioxide and trace amounts of remaining nitrogen and oxygen, thus producing a purer methane stream that meets pipeline and natural gas specifications.
MD20180031	Univ de Stat din Moldova (MD)	**Biogas plant.** The invention relates to alternative energy sources, in particular to biogas plants, and can be used in various fields of agriculture and the processing industry for producing biogas. The plant, according to the invention, comprises a reservoir-reactor with a spiral stirrer with a rod, feed and outlet branch pipes for the processed biomass, a gas exhaust pipe, connected to a gasholder. The reservoir-reactor, with a conical base with an opening, is placed inside an external conical silo reactor, equipped with openings for biomass loading. In the reservoir-reactor, on a shaft, is installed a spiral auger with a defoamant, coupled with a motor-reducer, and on the side face of the plant is placed a water seal. The liquid is discharged from the upper part of the reservoir-reactor, enriched with CO2, soluble therein, and directed to a granular floating filter, and then to a microalgae cultivation pool.
WO2019238151	Whiterock AG (DE)	**Method and device for generating methane, lng, and nutrients from an organic substance such as sludge, biomass, or plastics using electrochemically generated hydrogen.** The invention relates to a system for generating methane from organic substances such as sludge, biomass, or plastics by means of hydrogenation and methanization while simultaneously generating the required hydrogen by means of electrolysis. The electrolysis is carried out by fuel cells under the same or comparable pressure and temperature conditions. The system is used to generate methane as base chemical products or energy carriers, LNG, and inorganic nutrients. The system is suitable for intermittently absorbing excess electric energy in terms of a sector coupling of power generation, energy carriers, and chemical raw material production.

Bioalcoholes (bioetanol, biometanol, etc.)

Nº Publicación	Solicitante (País)	Contenido técnico
WO2019195382	Danisco Inc (US)	**Increased alcohol production from yeast producing an increased amount of active hac1 protein.** Described are compositions and methods relate to modified yeast that produces an increased amount of active HAC1 transcriptional activator involved in the unfolded protein response pathway. Such yeast is well suited for use in fuel alcohol production to increase yield.
RU2701643	Federalnoe Gosudarstvennoe Byudzhetnoe Uchrezhdenie Nauki Institut Problem Khimiko Energeticheskikh (RU)	**Method of producing bioethanol from cellulose-containing material.** Invention relates to the field of biotechnology. Disclosed is a method of producing bioethanol from cellulose-containing material. Method involves preliminary treatment of the raw material with diluted acid solution with concentration of 1-12 % at atmospheric pressure, combined stage of fermentative hydrolysis and alcohol fermentation, extraction of bioethanol from wort. At the stage of enzymatic hydrolysis with initial concentration of dry substances of 6-9 %, total concentration of dry substances is 15-27 % by portion introduction of substrate and enzyme preparations with interval of 4-8 hours. Stage is carried out until conversion of substrate into reducing substances by 40-50 %, after which ethanol of synthesizing microorganisms, ethanol biosynthesis stimulators are added and alcohol fermentation combined with enzymatic hydrolysis is performed. EFFECT: invention increases output of the product and minimizes costs during the stages of distillation and rectification of bioethanol.

WO2019223710	Heilongjiang Splendid Land Biotech Co Ltd (CN)	**Method for producing fuel ethanol using elaeagnus angustifolia as raw material.** A method for producing fuel ethanol using Elaeagnus angustifolia as a raw material, comprising: the pretreatment of Elaeagnus angustifolia, beating, solid-liquid separation or a liquefaction treatment, fermentation, and the distillation and dehydration of ethanol. The described processing method is simple, and the conversion efficiency of sugar to alcohol is basically kept consistent with the conversion efficiency during fermentation using corn and other starches as a raw material. A new non-grain biological resource, Elaeagnus angustifolia, is used to produce liquid bio-energy without consuming food resources, which broadens the scope for the types of raw materials used in fuel ethanol production.
RO133618	Iordache Catalin et al. (RO)	**Integrated system for treating expired and/or waste alcoholic products.** The invention relates to a process for treating expired and/or waste alcoholic products while using the resulting products in high value added goods, free of toxicity for the environment. According to the invention, the process has the following stages: transfer of the expired and/or waste alcoholic product into a basin provided with heating means, thermal treatment of the liquid at a temperature in the range of 90...100°C for 5 seconds, at the most, with a view to destroying a possible microbial charge, separation of the ethyl alcohol from the rest of aqueous liquid containing a series of compounds, such as flavours and taste agents, natural colours, traces of inorganic salts, proteins or the like, using a membrane process, reversed osmosis/nanofiltration, followed by concentrating the liquid rich in alcohol-stripped water, with an alcohol content of 0.5% at the most, and traces of natural products, at a temperature in the range of 15...30°C, using a tangential flow diafiltration process, in order to use it subsequently in the process of preparation of alcoholic drinks, in irrigation of plant crops or in preparation of animal food, and finally treating the alcohol extracted by evaporation in vacuum at 30...60°C, at a pressure of 0.04...0.2 bar or vacuum distillation, at a temperature ranging between 42...46°C, at a pressure of 0.04...0.2 bar, for producing bioethanol, other alcoholic drinks or derived chemical products.
WO2019220073	Johnson Matthey Davy Technologies Ltd (GB)	**Process for synthesising methanol.** A process for synthesising methanol is described comprising the steps of (i) passing a feed gas comprising a make-up gas containing hydrogen and carbon dioxideto a methanol synthesis loop, (ii) recovering a product gas mixture containing methanol from the methanol synthesis loop, (iii) cooling the product gas mixture to below the dew point to condense crude methanol, (iv) separating the crude methanol from an unreacted gas mixture, (v) passing a portion of the unreacted gas mixture to the methanol synthesis loop and (vi) recovering a portion of the unreacted gas mixture as a purge gas stream, characterised by contacting the crude methanol and a portion of the purge gas in a stripping unit to strip dissolved gases from the crude methanol thereby forming a stripped crude methanol and an enriched gas mixture, and feeding at least a portion of the enriched gas mixture to the methanol synthesis loop.
EP3546586	Indian Oil Corp Ltd (IN)	**A bio-assisted process for conversion of mixed volatile fatty acids to selective drop-in fuels.** The present invention relates to a two-stage process for production of drop-in fuels/alcohols (methanol, ethanol or butanol) from volatile fatty acids produced either synthetically from fossil resources or as metabolic intermediates in acidification step of anaerobic digestion process from waste biomass and organic materials.
WO2019186540	Technion Res & Development Foundation Limited (IL)	**Probiotic bacteria for yeast bioethanol production.** The present invention is directed to compositions comprising hydrolase- secreting bacteria and fermenting microorganisms and use thereof, such as for fermentative production of ethanol.

Biodiésel		
Nº Publicación	Solicitante (País)	Contenido técnico
RU2702067	Federalnoe Gosudarstvennoe Byudzhetnoe Obrazovatelnoe Uchrezhdenie Vysshego Obrazovaniya Penzenskij (RU)	**Automotive vehicle dual-fuel diesel power system.** The invention relates to engine building and can be used in the power supply system of motor vehicle diesel engines. Dual fuel fuel system for diesel engine of automotive equipment contains mineral fuel tank, vegetable oil tank, mineral fuel filters and vegetable oil, fuel filter of fine purification, electric pumps for supply of mineral fuel and vegetable oil, high-pressure fuel pump, nozzles and mixer, in the inlet channels of which are installed injection and bypass valves and electric dampers electrically connected to electronic control unit (ECU), three-position electric switch, load-speed mode sensor and thermistor arranged in input channel of high-pressure fuel pump, tuned to actuation temperature 30±2 °C and electrically connected through electric signal amplifier with electric pump for supply of vegetable oil and ECU. Loading mode sensor is a fuel flow meter electrically connected to ECU 21 and hydraulically communicated with mixer, while the speed mode sensor functions as one of the phase windings of standard alternator of the automotive vehicle.EFFECT: automatic control of electric doses of mineral fuel and vegetable oil depending on loading and speed modes of diesel engine operation.
RU2706123	Federalnoe Gosudarstvennoe Byudzhetnoe Obrazovatelnoe Uchrezhdenie Vysshego Obrazovaniya Krasnoyarsk (RU)	**Method of cleaning biofuel compositions based on rapeseed oil.** The invention relates to a method of cleaning biofuel compositions based on rapeseed oil, involving neutralization of fatty acids of rapeseed oil, separating the precipitate, mixing 70 % neutralized rapeseed oil with 30 % mineral diesel fuel, or 75 % neutralized rapeseed oil with 25 % kerosene TS-1 with subsequent winterisation, characterized by that stages of cleaning from mechanical impurities and waxes are carried out after mixing components of mixture, winterisation is carried out at temperature of +10 °C, and filtration efficiency is achieved by reducing viscosity when adding mineral diesel fuel. EFFECT: technical result is maximum extraction of waxes and wax-like substances from rapeseed oil while increasing low-temperature properties of biofuel compositions.
WO2019180012	Omya Int AG (CH)	**Method for transesterification of carboxylic acid esters.** The present invention relates to a method for transesterification of carboxylic acid esters by heterogeneous catalysis using a catalyst that is obtainable by calcination of surface-reacted calcium carbonate. The invention further relates to the use of said method in the production of fuel or fuel components, such as biodiesel. Further aspects of the present invention relate to the transesterified ester obtainable by the inventive method and to its use as fuel or as fuel component. Still another aspect of the present invention relates to a corresponding transesterification catalyst and to its use in transesterification reactions.
WO2019213290	Renewable Energy Group Inc (US)	**Methods and devices for producing biodiesel, diesel-range hydrocarbons, and products obtained therefrom.** A process for producing crude biodiesel from renewable feedstocks (such as fats, oils, and greases) containing unsaponifiable materials; purifying the crude biodiesel through a purification process; recovering a purified biodiesel distillate stream and a less volatile biodiesel residue stream; and further recovering valuable chemicals from the biodiesel residue. Specifically, the present technology relates to the concentration of valuable chemicals in the biodiesel residue product of biodiesel production and the subsequent recovery of these valuable chemicals. The process may further include the conversion of the biodiesel residue into diesel range hydrocarbons using hydrodeoxygenation and the subsequent purification of the hydrocarbon traction produced thereby.
WO2019221751	Saola Renewables Llc (US)	**Process for renewable fuels using a multistage approach.** The invention relates to a method to reduce the formation of high molecular weight compounds and catalyst coking in the production of renewable diesel. Renewable diesel is produced using hydrogenation, decarboxylation, decarbonylation, and/or hydrodeoxygenation of renewable feedstocks such as animal and/or plant fats, oils, and/or greases (FOG). By first reacting the most reactive species in the FOG in an initial reaction zone prior to the main reaction zone, maximum reaction temperatures and side reactions that lead to the formation of high molecular weight compounds are reduced. This reduces catalyst coking (extends catalyst life) and improves product quality.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2019229072	Total Res & Technology Feluy (BE)	**Renewable diesel fuel production in retrofitted fossil petroleum refinery to produce biofuel and bio-feedstock for steam crackers.** The present invention relates to a process for the conversion of a feedstock comprising at least 50 wt % related to the total weight of the feedstock of triglycerides, fatty acid esters and/or fatty acids having at least 10 carbon atoms into hydrogen, olefins, dienes, aromatics, gasoline, diesel fuel, jet fuel, naphtha and liquefied petroleum gas comprising : a) introducing of said feedstock in a first reactor to produce linear paraffins in presence of a hydrodesulfurization catalyst and hydrogen, b) separating the effluent of said first reactor in at least three parts to produce at least a first stream comprising part of said linear paraffins and at least a second stream comprising part of said linear paraffins, and at least a third stream comprising part of said linear paraffins c) sending said first stream to a steam cracker to produce hydrogen, olefins, dienes, aromatics and gasoline, diesel fuel being further fractionated; d) introducing said second stream into a second reactor in presence of a hydrocracking or hydroisomerization catalyst to produce a mixture comprising diesel fuel, jet fuel, naphtha and liquefied petroleum gas being further fractionated e) blending said third stream with the diesel fuel obtained at said step d) wherein said feedstock of said first reactor is diluted in order to limit the temperature increase within said first reactor; and wherein before entering the first reactor said dilution is performed with a weight ratio diluent : feedstock being 1:1, and wherein said diluent comprises at least part of said paraffins obtained at step b).
WO2019193499	Univ King Abdullah Sci & Tech (SA)	**Biodiesel from karaya oil.** Embodiments of the present disclosure describe methods of producing fuel additive compositions from karaya oil comprising reacting a karaya oil extract with an alcohol in the presence of a catalyst to produce fatty acid esters in a crude product mixture; and separating the fatty acid esters from the crude product mixture to obtain the fuel additive composition. Embodiments of the present disclosure further describe fuel additive compositions comprising a mixture of fatty acid esters from karaya oil, and fuel compositions comprising a fuel additive composition and optionally diesel fuel.
US10501698	Univ South Florida (US)	**Countercurrent and cross current high pressure extraction techniques for biodiesel fuel.** Methods of extracting biodiesel from a mixture of biodiesel and alcohol are provided. The methods can include contacting the mixture of biodiesel and alcohol with a petrodiesel to form a two-phase system including a polar phase and a nonpolar phase, wherein the alcohol preferentially partitions into the polar phase and the petrodiesel and biodiesel preferentially partition into the nonpolar phase, and separating the nonpolar phase from the polar phase to extract the biodiesel. The methods can include using a multi-stage extraction apparatus, for example in countercurrent or crosscurrent extraction arrangement. Methods of making a biodiesel blend are also provided. The methods can include making a biodiesel blend with a biodiesel content from about B2 to about B25.
WO2019237328	World Houseware Producing Company Ltd (CN)	**Method for preparing biodiesel from kitchen waste.** A method for preparing biodiesel from kitchen waste, the present invention relating to a production method for preparing biodiesel from oil and fat, food waste, and related waste oil. A technical solution of the present invention is as follows: a method for preparing biodiesel from kitchen waste, the method comprising the following steps: (1) performing degumming treatment on raw oil produced by removing solid impurities and water from kitchen waste; (2) producing fatty acid methyl esters; and (3) removing impurities from the crude product. The beneficial effects of the present invention are being suitable for the treatment of the kitchen waste oil of Hong Kong, which has high oil content and high animal fat content, and extracting biodiesel complying with the EN 14214 standard.

Bio-jet fuels

Nº Publicación	Solicitante (País)	Contenido técnico
WO2019221287	Hibd Laboratory Ass, et al. (JP)	**Production method for bio-jet fuel.** This production method for a bio-jet fuel includes a reaction step in which a crude oil, obtained by deoxygenating a raw material oil which contains a triglyceride and/or a free fatty acid, is hydrogenated, isomerized, and decomposed in a hydrogen atmosphere by using a hydrogenation catalyst and an isomerization catalyst, under the conditions of a reaction temperature of 180-350°C and a pressure of 0.1-30 MPa.
WO2019196703	Mohan Co Ltd, et al. (JP)	**Preparation method for catalyst for use in synthesizing aviation fuel from synthesis gas, catalyst.** A method for preparing a catalyst for use in synthesizing an aviation fuel from a synthesis gas, the catalyst prepared per the method, and uses of the catalyst in synthesizing the aviation fuel from the synthesis gas. The catalyst comprises a carrier and, loaded thereon, a catalytic active component and a catalytic additive, comprising: (A) an element of 1-50 weight% selected from Ru, Fe, Ni, Co, Pt, and Pd and serving as the catalytic active component; (B) an element of 1-20 weight% different from the catalytic active component, selected from the metal elements of the first main group, transitional elements, and the lanthanide, and serving as the catalyst additive, and (C) the carrier. For the catalyst, a weak acid or strong base is used in a heat treatment on the carrier before the carrier catalyzes an active metal, when the catalyst prepared as such is used in preparing the aviation fuel from the synthesis gas, the ASF distribution of a conventional Fischer-Tropsch reaction is disrupted, high aviation fuel selectivity is acquired, and additionally, an acceptable or increased CO conversion rate is acquired.

Otros biocombustibles (bio-hidrógeno, bio-oils, biopropano, etc.)

Nº Publicación	Solicitante (País)	Contenido técnico
US2019330547	Beijing Sanju Environmental Prot & New Materials Co Ltd (CN)	**Conversion process for an inferior oil.** Provided is a conversion process for an inferior oil, relating to the field of biomass utilization, energy and chemical industry. The conversion process is carried out in presence of a catalyst selected from the group consisting of an iron oxide compound, a desulfurization waste agent resulting from use of an iron oxide compound as desulfurizer, and a regeneration product of the desulfurization waste agent, under a controlled molar ratio of iron element to sulfur element. It is found that free radical condensation polymerization of inferior oil during cracking process can be blocked effectively by using carbonylation, and hydrogenation is achieved with active hydrogen produced from the conversion of CO and water. In the conversion process, inferior oil can be, directly converted, thereby increasing liquefaction yield and calorific value of the obtained oils. No large amount of waste water is generated after completion of the conversion.
WO2019229255	Cambridge Entpr Ltd (GB)	**Photocatalyst and photocatalytic methods for producing hydrogen.** The invention provides methods for producing hydrogen using a carbon nitride (CN x) photocatalyst or a carbon dot (CD) photocatalyst. The method may include exposing a photocatalyst to visible and/or ultraviolet light in the presence of an organic substrate, such as a biomass or an organic component having a molecular weight of 200 or more, and a co-catalyst that is a hydrogen evolution catalyst. The method may include exposing a photocatalyst within untreated water to visible and/or ultraviolet light in the presence of a co-catalyst that is a hydrogen evolution catalyst.
GB2535797	Future Blends Ltd (GB)	**Process for removal of water and light organics from pyrolysis oil.** Described is an integrated process for converting biomass pyrolysis oil into products that will be more useful for transportation fuels as well as industrial solvents. In one embodiment, a method of stabilizing the pyrolysis oil using stabilizing agents (e.g. ethanol, methanol) is disclosed. In other embodiments, a method of obtaining a vacuum heavy fraction (VHF) and vacuum light fraction (VLF) through a vacuum distillation process of stabilized pyrolysis oil is disclosed. In other embodiments, a method to extract the stabilizing agent, and industrial chemicals from the VLF through atmospheric distillation is disclosed. Also, in other embodiments the method includes recycling the extracted stabilizing agent to stabilize the pyrolysis oil. In other embodiments, the VHF can be upgraded to transportation fuel through emulsification and catalytic processes.

Nº Publicación	Solicitante (País)	Contenido técnico
AU2019101001	Univ Tsinghua, et al. (CN)	**Method for synthesizing sodium zirconate and application thereof.** Disclosed are a method for synthesizing sodium zirconate and application thereof, belonging to the field of solid waste resourcing. The method comprises two steps: (1) mixing a certain amount of YSZ solid with sodium carbonate solid; and (2) calcining a product obtained in step (1) at a calcining temperature of 750 °C to 850 °C for a calcining time of 5-8 hours. The present invention can achieve the recycling of the crown material waste, and realize the reduction and resourcing effect of the dental solid waste; and the sodium zirconate synthesized by the simple and easy-to-operate synthesis method of the invention can be used as a carbon dioxide adsorbent with excellent carbon dioxide adsorption capacity, and can also be used in hydrogen production process from biomass and biomass waste pyrolysis.
US2019358585	US Energy, et al. (US)	**Di-substituted siloxane solvents for gas capture.** The present disclosure provides a method for the separation of a gas constituent from a gaseous mixture. The disclosure also provides polyethylene glycol disubstituted siloxane based solvents for use in the method. These solvents are of use for pre-combustion CO2 capture and are capable of replacing glycol-based solvents while offering operation at a higher temperature region. These solvents are also of use for generation of hydrogen from reformed natural gas or syngas, adjusting CO/H2 ratio for Coal & Biomass to Liquids, removal of CO2 from syngas for coal & biomass to NH3/Fertilizer, natural gas sweetening, and upgrading of landfill and biogas

PATENTES BIOPRODUCTOS

Biomateriales (de construcción, medicina, embalaje, etc.)		
Biocomposites y biofibras		
Nº Publicación	Solicitante (País)	Contenido técnico
WO2019230970	Asahi Chemical Ind (JP)	**Highly heat-resistant resin composite including chemically modified, fine cellulose fibers.** Provided is a resin composite having high mechanical properties which make the resin composite moldable into and usable as members for use in applications such as vehicle-mounted members and electrical materials. The resin composite comprises 0.5-40 mass% chemically modified, fine cellulose fibers and a resin, wherein the chemically modified, fine cellulose fibers have a pyrolysis initiation temperature (TD) of 270°C or higher, a number-average fiber diameter of 10 nm or larger but less than 1 μm, and a degree of crystallinity of 60% or higher. In a preferred embodiment, the chemically modified, fine cellulose fibers have a coefficient of variation (CV) in DS unevenness ratio, DSs/DSt, of 50% or less, the DS unevenness ratio being the ratio of the modification degree (DSs) of the surface layers of the fibers to the modification degree (DSt) of the whole of the fibers.
US10426865	Bionutratech Inc (US)	**Absorbent pad that includes a fatty acid composition for odor control.** An absorbent pad includes a batt of cellulose fibers, superabsorbent particles intermixed within the batt of cellulose fibers, and an odor control material intermixed within the batt of cellulose fibers, wherein the odor control material is a particulate material including one or more fatty acid. The odor control material preferably further includes selected inorganic compounds, such as sources of nitrogen, phosphorus and iron. Various embodiments incorporate the absorbent pad in a diaper or other disposable hygiene product.
US10472767	CNH Ind Canada Ltd (CA)	**Method of removing odors from fibrous materials used in forming biocomposite materials.** A method to treat fibrous materials for use in the formation of a biocomposite material that significantly reduces or eliminates the odors emitted from the fibrous materials is provided. In the method, the fibers or fibrous materials are initially treated to extract the raw fiber from the source plant material and the remove unwanted fractions of the fiber, such as the hemicellulose, lignin, and pectin, among others, leaving only the intact cellulose fibers. These cellulose fibers are then further processed in a second step to remove the odor from the cellulose fibers. The second step includes a combination of a second chemical treatment, dehumidification, and/or a cold plasma modification to render the cellulosic fibers odorless.
WO2019221256	Daio Seishi KK (JP)	**Cellulose microfibers and method for manufacturing same.** [Problem] To provide: cellulose microfibers that, if the cellulose microfibers are put into a dispersion, will give the dispersion extremely high transmittance and viscosity; and a method for manufacturing the cellulose microfibers. [Solution] Cellulose microfibers have a fiber width of 1-200 nm, an ester of a phosphorous oxoacid is introduced by replacing some hydroxy groups of the cellulose fibers with prescribed functional groups, and the quantity of the functional groups introduced is greater than 2.0 mmol per 1 g of the cellulose fibers. Moreover, when these cellulose microfibers are manufactured, a solution with a pH below 3.0, comprising an additive (A) that includes a phosphorous oxoacid and/or a metal salt of a phosphorous oxoacid and an additive (B) that includes urea and/or a urea derivative, is added to the cellulose fibers and then the result is heated and fibrillated.
US10448644	Draexlmaier Lisa GmbH (DE)	**Fungicide composition for natural fibers and natural fiber components.** A method for producing a natural fiber part may comprise applying an aqueous solution of an inorganic aluminum salt to the natural fiber part and drying the natural fiber part applied with the aqueous solution. The aqueous solution may contain the aluminum salt in a concentration of 2 to 40% by weight. The aluminum salt may include an alum compound. At least one of an inorganic thickening agent or an inorganic stabilizing agent may be added to the aqueous solution.

Nº Publicación	Solicitante (País)	Contenido técnico
US2019300660	Fibria Celulose SA, et al. (BR)	**Process for obtaining thermoplastic composite pellets reinforced with cellulose pulp and additive cellulose pulp.** The present invention refers to a process for obtaining thermoplastic composite pellets reinforced with cellulose pulp or additive cellulose pulp, cellulose fibers, and/or hydrophilic material from renewable source, and/or natural source material comprising the steps of cellulose pulp dry processing carried out in a binder mill, and/or plastic agglomerator and/or densifier, and preparation of the masterbach comprising the steps of drying the pulp and the thermoplastic materials, preparing the compositions of polymer and cellulose fiber, milling the masterbatch produced, drying the product, extruding the polymer and the masterbatch, and injecting the obtained material.
WO2019237466	Jiangsu Goldsun Textile Science and Tech Co Ltd (CN)	**Method for preparing regenerated cellulose fiber dyeable with natural dye.** Disclosed is a method for preparing a regenerated cellulose fiber which is dyeable with a natural dye, comprising firstly adding a chitosan solution to a viscose spinning solution to prepare a viscose spinning solution-chitosan mixed solution, then adding a tannic acid solution, mixing and then fully reacting same, and finally subjecting the resulting tannic acid viscose spinning solution to wet spinning so as to prepare the regenerated cellulose fiber which is dyeable with a natural dye. After dyeing the prepared regenerated cellulose fiber with a natural dye, yarns or fabrics prepared with the fiber have better various color fastnesses, and can satisfy production and apparel use requirements.
WO2019240128	Kao Corp (JP)	**Method for producing modified cellulose fiber, and modified cellulose fiber.** The present invention relates to a method for producing a modified cellulose fiber having a cellulose I type crystal structure, and in the method a step A and a step B are carried out either simultaneously or in the order step A and then step B. Step A: a step for introducing a substituent group A into a cellulose fiber via an ether bond in a water-containing solvent in the presence of a base. Step B: a step for introducing a substituent group B into the cellulose fiber via an ether bond in a water-containing solvent in the presence of a base. This cellulose fiber, which is obtained using this production method, exhibits good dispersibility in hydrophobic media and is suppressed in terms of viscosity increase.
WO2019190513	Kimberly Clark Co (US)	**Cross-linked cellulosic fibers**. Disclosed are processes for manufacturing cross-linked cellulosic fibers and tissue products comprising cross-linked cellulosic fibers, manufactured by reacting an oxidized polyol, in particular, an oxidized sugar having at least two aldehyde groups with a plurality of cellulosic fibers to yield treated fibers and heating the treated fibers at a temperature greater than about 140°C to cure the treated fibers. In particular, said sugar is sucrose and the oxidising agent comprises hydrogen peroxide. The instant cross-linked fibers are manufactured without well-known cross-linking agents such as formaldehyde or polycarboxylic acids, and have good brightness and color and resist yellowing. Furthermore, the cross- linked cellulosic fibers are generally free from off odors and the instant cross-linked cellulosic fibers have enhanced properties, such as improved wet bulk, compared to uncross-linked fibers.
EP3571232	KTH Holding AB (SE)	**Melt-processed material with high cellulose fiber content.** The present invention relates to a product comprising cellulose fibers wherein the cellulose fibers are at least partly modified to contain dialcohol cellulose and a melt-processing method of preparing the same.
EP3569210	Procter & Gamble (US)	**Disposable absorbent articles.** An absorbent article including an absorbent core having a fluid distribution layer and fluid storage layer, the fluid distribution layer being formed of two or more sublayers. A first sub-layer has a first amount of multiple component binder fibers or crosslinked cellulose fibers, or a combination thereof. A second and/or subsequent sub-layer comprises treated or untreated pulp and a second amount of multiple component binder fibers, crosslinked cellulose fibers, or a combination thereof. The % by weight of the first sub-layer of the first amount of multicomponent binder fibers and/or crosslinked cellulose fibers is greater than the % by weight of the second or subsequent sub-layer of the second amount of multiple component binder fibers and/or crosslinked cellulose fibers.
WO2019228621	Xylo Tech AG (CH)	**Method of manufacturing a wood-based panel.** The present invention concerns a method for the manufacture of a wood-based panel comprising providing wood fibers which are impregnated with a phenolic resin, the ratio of resin (based on the solids content) to wood fibers being 10 to 50 % by weight. The impreganted fibers are pre-compacted in a press at press temperatures below 110 °C to a chemically reactive fiber board and then pressed to compact panels at temperatures between 130 and 180 °C.

Bioplásticos		
Nº Publicación	Solicitante (País)	Contenido técnico
WO2019220806	BP Consulting Inc (JP)	**Method for producing polylactic acid-based hot melt adhesive.** To provide a method for easily producing a polylactic acid-based hot melt adhesive having thermal stability in practical use. [Solution] The present invention provides a method for producing a polylactic acid-based hot melt adhesive, the method comprising: (1) a step in which 100 parts by weight of a first polylactic acid having a relative viscosity of 2.5-4.0 as measured according to ASTM D5225 is added to a liquid mixture of a dithiocarbamate and a plasticizer at a temperature of 180-280°C, the resultant mixture is melt-mixed, and then phosphite and hindered phenol are added to prepare a first polylactic acid composition, wherein 10-100 parts by weight of the plasticizer, 0.02-0.3 parts by weight of the dithiocarbamate, 1-10 parts by weight of the phosphite, and 1-10 parts by weight of the hindered phenol are added with respect to 100 parts by weight of the first polylactic acid, and the viscosity of the first polylactic acid composition is 70-700 mPa·s at 180-220°C; and (2) a step in which a second polylactic acid having a relative viscosity of 2.5-4.0 as measured according to ASTM D5225 is mixed with the first polylactic acid composition at a temperature of 180-280°C such that the weight ratio of first polylactic acid/second polylactic acid is 2/8-8/2.
WO2019219546	BYK Chemie GmbH (DE)	**A polylactic acid composition.** The invention provides a polylactic acid composition comprising: i) polylactic acid, ii) mineral silicate compound, and iii) polylactic acid grafted with an acid- and/or acid anhydride- functional ethylenically unsaturated polymerizable monomer. The composition comprises at least 7.5% by weight of the mineral silicate compound component ii), wherein the % by weight is calculated on the sum of i), ii) and iii).
US2019360008	Genecis Bioindustries Inc (CA)	**Method for producing polyhydroxyalkanoates (pha) from organic waste.** According to one broad aspect of this disclosure, a method is provided for producing polyhydroxyalkanoates (PHA) from organic waste. The method comprises homogenizing organic waste to obtain a feedstock that has about 0.01% to about 99.99% (w/w) dry mass solids. The feedstock is inoculated with an inoculum of acidogenic fermentative bacteria in order to obtain an inoculated feedstock. The inoculated feedstock is incubated for at least 1 day to obtain a fermentation broth. The fermentation broth comprises volatile fatty acids (VFAs) and undigested organic waste. The fermentation broth is filtered with a filter with a pore size ranging from 0.2 µm to 500,000 NMWC to remove the acidogenic fermentative bacteria and undigested organic waste, to obtain a clarified broth comprising concentrated VFAs. The clarified broth and high-PHA producing bacteria are incubated to produce intracellular PHA granules in the high-PHA producing bacteria. PHA polymers are extracted from the intracellular PHA granules.
US10435557	Lapol Llc, et al. (US)	**High heat deflection temperature polylactic acids with tunable flexibility and toughness.** Stereocomplex biopolymer compositions having tunable and improved mechanical properties and methods of making such compositions are disclosed. The biopolymer compositions include combinations of a matrix-forming polylactic acid comprising an essentially pure enantiomer and a tough polyester to form a polylactic acid matrix. The polylactic acid matrix is further combined with a base polylactic acid comprising an essentially pure opposite enantiomer of the first essentially pure enantiomer of the matrix-forming polylactic acid to form the stereocomplex.
EP3559079	Michelin & Cie (FR)	**Process for preparing polydiene/polylactide copolymers by reactive extrusion.** The present invention relates to a process for preparing a diene elastomer/polylactide copolymer, the weight percentage of polylactide being between 10% and 45% by weight, relative to the weight of the copolymer, characterized in that lactide, an elastomer functionalized by at least one group bearing at least one function capable of initiating a ring-opening polymerization of the lactide and a catalytic system are introduced into an extruder (A).

Nº Publicación	Solicitante (País)	Contenido técnico
EP3560479	Nafigate Corp AS (CZ)	**A UV filter based on polyhydroxybutyrate and a method of its preparation.** The invention relates to a UV filter based on polyhydroxybutyrate containing polyhydroxybutyrate particles in size ranging from 0.2 to 500 µm, which are functionalised by at least one organic UV filter of natural origin at a total concentration of 2 to 10%.The invention also relates to the method of preparation of this UV filter.
US10450592	Newlight Tech Inc (US)	**Polyhydroxyalkanoate production methods and materials and microorganisms used in same.** Embodiments of the invention relate generally to methods to generate microorganisms and/or microorganism cultures that exhibit the ability to produce polyhydroxyalkanoates (PHA) from carbon sources at high efficiencies. In several embodiments, preferential expression of, or preferential growth of microorganisms utilizing certain metabolic pathways, enables the high efficiency PHA production from carbon-containing gases or materials. Several embodiments relate to the microorganism cultures, and/or microorganisms isolated therefrom.
US10442966	Purdue Research Foundation (US)	**Polylactic acid adhesive compositions and methods for their preparation and use.** New adhesives and methods for preparing them are disclosed that include polylactic acid irradiated with gamma radiation, such as by a Co60 source. Irradiation times are used that improve the characteristics of the adhesive materials. Generally, the dose of radiation is from about 5 kGy to about 200 kGy of gamma irradiation. The adhesives generally have melting temperatures in the range of at least about 140 to about 148° C. such that they can be conveniently used in conventional glue guns and other glue equipment. The disclosed adhesives can provide bond strengths in the range of about 1,600 psi or more to about 2,500 psi or more. The disclosed adhesives can include a crosslinking agents. They can be used to join a wide range of substrates including wood, metal, plastic, ceramic, glass or combinations of substrates. They can be conveniently prepared by heating a polylactic acid (polylactic acid) preparation and mixing the molten polylactic acid with one or more crosslinkers when present. The molten mixture can then be and the polylactic acid can be irradiated with the desired dose of gamma radiation. Irradiation can occur before during or after mixing with the crosslinking agent and before or after shaping into the desired shape or even after use to join substrates. The adhesives can be used to join substrates by any known method once heated to a molten state.
US10501604	SK Chemicals Co Ltd (KR)	**Polylactic acid resin composition.** The inventive polylactic acid resin composition comprises a polylactic acid resin comprising a hard segment comprising a polylactic acid repeating unit and a soft segment comprising a polyolefin-based polyol repeating unit in which polyolefin-based polyol structural units are linked in a linear or branched manner via a urethane bond or an ester bond, wherein the organic carbon content (% Cbio) of biomass-based carbon, as defined in Equation 1, is at least 60 wt %; and an antioxidant.
WO2019193518	Univ King Abdullah Sci & Tech (SA)	**Capturing and converting CO2 into biodegradable bioplastic.** Embodiments of the present disclosure describe methods, systems, and compositions for the production of bioplastic from a gaseous substrate containing a carbon source by a two-stage fermentation process. Stage 1 includes introducing a gaseous substrate comprising CO2 and H2 to a primary bioreactor containing a culture of an acetogenic microorganism, anaerobically fermenting the gaseous substrate under elevated pressure to produce an acid-containing culture medium, and stage II includes aerobically fermenting the acid of the culture medium in a secondary bioreactor containing a culture of a PHA-producing microorganism to produce a polyhydroxyalkanoate (PHA). The culture medium can be suitable for both the first and second stages and enable the primary and secondary bioreactors to be connected in a sustainable continuous system.

Bioproductos químicos (biofertilizantes, biocosméticos, biofarmaceúticos...)

Biofertilizantes, bioadhesivos y biocosméticos

Nº Publicación	Solicitante (País)	Contenido técnico
US10428254	Cambond Ltd (GB)	**Bio-adhesives.** Distiller's Grain (DG) based bio-adhesives consisting of DG biomass, crosslinking agents, and fillers are described as substitutes for formaldehyde based wood glue for making wood panels. Algal bio-adhesives consisting of algal biomass, crosslinking agents, and fillers are described as substitutes for formaldehyde based glue for making wood panels. Processes for preparing such DG based bio-adhesives and algal bio-adhesives are provided, comprising the steps of: combining DG biomass or algal material with a cross-linking agent and inorganic fillers to form a blend; micronisation or homogenisation of the blend to obtain powdery material; and mixing the powdery material with additional water to form a bio-adhesive.
EP3569586	CF Energy Service SRL (IT)	**Process and plant for transforming anaerobic digestate from biogas power plants into bio-fertilisers and substrate.** Described is a process for the exploitation of the anaerobic digestate leaving biogas energy production plants, said biogas energy production plants comprising a biodigester designed to treat an organic matrix and to produce biogas and a digestate and a cogenerator, fed by the biogas coming from said biodigester and designed to produce energy and exhaust gases; said process being characterised in that it comprises the following steps:- separating digestate coming from said biodigester to provide a liquid fraction and a solid fraction, if necessary comprising solid residue, and a solid fraction;- simultaneously with, before and/or after said separating step, grinding said digestate and/or said solid fraction;- stripping ammonia of the liquid fraction obtained in said separating step by means of the exhaust gases coming from said cogenerator (2), to obtain a gas rich in ammonia and water vapour and a liquid fraction which is sterilised and depleted of ammonia designed to be used as liquid fertiliser; and- insufflating the solid fraction obtained in said separating step by means of the gas obtained in said stripping step to obtain a solid fraction enriched in ammonia and pasteurised;The invention relates to a plant for implementing said process.
WO2019190255	Cho Ju Hyuk (KR)	**Natural detergent composition comprising reinforced vegetable fatty acids and emulsifier and method of preparing same.** A detergent composition is disclosed in one embodiment. The detergent composition according to an embodiment comprises: one or more vegetable fatty acids selected from the group consisting of soybean fatty acid, peanut fatty acid, olive fatty acid, corn fatty acid, sunflower fatty acid, cottonseed fatty acid, wheat germ fatty acid, hemp fatty acid, and canola fatty acid; a reinforced vegetable fatty acid including one or more free fatty acids selected from the group consisting of lauric acid, myristic acid, palmitic acid, stearic acid, palmitoleic acid, oleic acid, linoleic acid, linolelaidic acid, and alpha-linolenic acid; water; an emulsifier including one or more free fatty acids for emulsification, selected from the group consisting of capric acid and caprylic acid, ethanol, coconut fatty acid, or palm kernel fatty acids; and an alkali.
WO2019190310	De Patent BV (NL)	**Scratch resistant polymer composition.** Scratch resistant polymer composition, in particular for the manufacturing of rigid, scratch resistant and dimensionally stable building bricks, comprising: a) a bio-based HDPE granulate, produced from ethanol or ethylene obtained from biomass; b) an amorphous polymer and/or (semi)crystalline polymer; c) optionally a mineral filler and optionally a colouring pigment; Furthermore, a method for manufacturing an injection moulding article from the scratch resistant polymer composition is disclosed.
RU2710319	Federalnoe Gosudarstvennoe Byudzhetnoe Nauchnoe Uchrezhdenie Vserossijskij Nauchno Issledovatelskij (RU)	**Potato yield increase method.** The invention relates to agriculture and can be used in technology of potatoes growing. Method involves adding local biofouling potatoes locally to potatoes. Biofertilizer is produced as a result of fermentation during 5 days of a mixture of chicken droppings and peat at a component ratio of 50×50, with preliminary alkalinisation thereof with 0.5 % aqueous solution of caustic potassium in amount of 1.5 l per 1 kg of mixture and subsequent addition of wheat bran in amount of 3 wt% into the mixture, citric acid in amount of 0.1 wt% and magnesium acetate in amount of 0.1 wt% of the mixture. Biofertilizer consumption rate is 3 t per 1 ha of potato plantations. Simultaneously with biofertilizer mineral fertilizers are introduced into the soil locally in a dose equivalent to NPK content in 3 t of biofertilizer.EFFECT: increased crop capacity and product quality, as well as resistance of plants to pests and diseases.1 cl, 3 tbl, 4 dwg.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2019196419	He Xinqiao (CN)	**Bio-organic fertilizer and preparation method therefor and application thereof.** Disclosed by the present invention are a bio-organic fertilizer and a preparation method therefor and an application thereof. The bio-organic fertilizer, by parts by weight, comprises: 25-35 parts of household wastes, 55-65 parts of water, 9-10 parts of brown sugar and 0.1-1 parts of liqueur koji, wherein the household wastes are mainly plant waste such as vegetables, melons and fruits, and leftovers. According to the present invention, the existing household wastes are deposited, cleaned and sorted out, and then vegetables, melons and fruits, and leftovers therein are loaded into a container and are converted into a liquid organic fertilizer after special treatment. The liquid organic fertilizer not only contains beneficial bacteria which can stimulate root branching, increase plant surface absorption and promote plant growth, but also has a function of Trichoderma resistance, which can protect plants from contamination of harmful substances in soil. The bio-organic fertilizer also contains collagen, nitrogen, phosphorus, and potassium required for plant growth, and can completely replace chemical fertilizers.
EP2890740	PTT Global Chemical Public Co Ltd (TH)	**A bio-based polymer additive, a process for preparing the bio-based polymer additive and a biodegradable polymer composition comprising said bio-based polymer additive.** The present invention disclosed a bio-based polymer additive, its preparation process and a biodegradable polymer composition comprising the said bio-based polymer additive for use in manufacturing of biodegradable plastic. The said additive is prepared from the biomass of broken microorganism cell such as microalgae, yeast or other microorganisms. In particular, the bio-based polymer additive is for enhancing rheological properties and/or biodegradability of a polymer. In particular, the additive is for use as a pigment.
EP3544943	Solyom Zoltan, et al. (HU)	**Procedure for preserving soil bacteria, suitably to produce preserved soil-improving bio-fertilizers.** The subject of the invention is a procedure for preserving bacteria, especially to produce preserved soil-improving bio-fertilizers, in the course of which at least one bacterium tribe is cultivated in a cultivating dish and/or a cultivating flask and/or a fermenter, and the cultivated bacteria are moved into a mixing pot, and it is stirred. It is characterized in that 15-200 g/L of activated carbon is added during slow stirring, and then the pH value of the mixture in the mixing pot is changed by adding a solution, and then the mixture is divided into fermented liquid and a mixture of bacteria and carbon in a separating unit, and then the fermented liquid is removed, and the mixture of bacteria and carbon is rationed.
US2019350820	Tate & Lyle Ingredients Americas Llc (US)	**Personal care compositions.** Described is a personal care composition comprising: a propanediol or an ester thereof; and a modified starch selected from the group consisting of modified corn starch such as modified dent corn starch or modified waxy corn starch; modified wheat starch; modified barley starch; modified tapioca starch; modified triticale starch; modified sorghum starch; modified rice starch; and modified legume starch such as modified pea starch or modified soybean starch. Uses and methods of using such modified starches in personal care compositions are also described. Advantageously, the propanediol and/or the modified starch can be bio-based, and thus can provide for formulations including even higher contents of materials based on natural sources such as plant sources.
US10512708	Univ Case Western Reserve (US)	**Bioadhesive hydrogels.** A bioadhesive includes a crosslinked biodegradable hydrogel that includes a plurality of oxidized, acrylated or methacrylated, natural polymer. Bioadhesives are natural or synthetic materials that can be used for soft tissue repair to create a seal preventing leakage of biological fluids or to reinforce anatomic integrity as an attractive alternative to sutures and staples. The most widely used bioadhesives are fibrin, cyanoacrylates, and albumin-glutaraldehyde bioadhesives.

Biofarmaceúticos		
Nº Publicación	Solicitante (País)	Contenido técnico
US10481164	Amgen Inc (US)	**Method for using light scattering in real time to directly monitor and control impurity removal in purification processes.** The invention provides a method for controlling contaminants in biopharmaceutical purification processes by using light scattering and UV absorbance to establish a determinant. The invention makes use of multi-angle light scattering (MALS) and UV as a continuous monitoring system to provide information about the elution peak fractions in real-time instead of conventional pooling methods that rely on a predetermined percent UV peak max value to initiate the pooling process; regardless of product quality.
WO2019231937	Anellotech Inc (US)	**Bio-based medicines and methods of increasing patient compliance.** Medicines that are used to treat diseases are conventionally made from starting materials that are derived from fossil fuels and therefore contain essentially no 14C. In the present invention, medicines can be partially or fully derived from biological sources and therefore contain about one part per trillion (ppt) 14C. These compounds have been discovered as superior for the treatment of disease because they have surprisingly been found to substantially increase patient compliance. Compounds and methods of using partially or fully bio-based pharmaceutically active compounds to track metabolites are also disclosed.
US2019298838	Api Ip Holdings Llc (US)	**Processes for producing pharmaceutical excipients from lignocellulosic biomass, and pharmaceutical excipients obtained therefrom.** In some variations, the invention provides a process for producing a microcrystalline cellulose material, comprising: fractionating lignocellulosic biomass feedstock in the presence of an acid, a solvent for lignin, and water, to generate cellulose-rich solids and a liquid containing hemicellulose and lignin; chemically and/or mechanically treating the cellulose-rich solids to form microcrystalline cellulose having an average crystallinity of at least 60%; and recovering the microcrystalline cellulose as a pharmaceutical excipient. The pharmaceutical excipient may function as an antiadherent, a binder, a coating, or a disintegrant. In some embodiments, the pharmaceutical excipient further comprises a lignin-derived lubricant, glidant, sorbent, preservative, or other component. The pharmaceutical excipient may be present in a pill, tablet, capsule, powder, slurry, or other pharmaceutically effective and acceptable form.
EP3551163	Clariant Int Ltd (CH)	**Use of bio-based polymer in a cosmetic, dermatological or pharmaceutical composition.** The present invention relates to the use of a polymer in a cosmetic, dermatological or pharmaceutical composition, wherein the polymer is crosslinked or non-crosslinked, characterized in that the polymer comprises at least 9.49 mol-% of repeating units (a) according to Formula wherein at least 10 wt.-%, preferably at least 20 wt.-% of the repeating units according to Formula comprise from 28 wt.-% to 100 wt.-% bio-based carbon content, relative to the total mass of carbon in the repeating unit according to Formula, measured according to standard ASTM D6866-12, Method B.
WO2019201430	Protea Biopharma NV (BE)	**Sustained energy providing and free radical protective composition.** The present invention relates to the use of caffeic acid oligomeric forms in the preparation of a sustained energy release food, feed, nutraceutical and/or drink composition simultaneously providing maximal tissue protection by neutralization of a broad spectra of free radicals associated with energy consuming metabolic reactions.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2019207554	Radient Tech Inc (CA)	**Extraction of compounds from cannabis biomass using food-grade solvent.** A method of extracting pharmacologically active compounds from cannabis biomass is disclosed. The method comprises providing a raw biomass containing target compounds. Slurry is prepared by adding a solvent to the prepared biomass. In a preferred embodiment, the solvent may be a medium-chain triglyceride, such as coconut oil, or an edible and food-grade solvent or emulsifier used to standardize active compounds in pharmaceutical, nutraceutical, functional food, or cosmetic formulations. In some embodiments, the solvent may be a polyunsaturated fatty acid (PUFA), com oil, safflower oil, borage oil, flax oil, canola oil, cottonseed oil, soybean oil, olive oil, sunflower oil, monoglycerides, diglycerides, triglycerides, lecithin, limonene, essential oils of spices, herbs or other plants, fish oil, glycerol, glycols, or any other, or mixtures thereof. Various pharmacologically active compounds could be extracted from the slurry by processing in a continuous flow extractor. Successively, the solvent containing various pharmacologically active compounds may be separated from a spent biomass.
US10451609	Rosedale Ronald E (US)	**Omega-3 fatty acid nutriceutical composition and optimization method.** A novel omega-3 fatty acid/lipid based nutraceutical composition and a method of optimizing said omega-3 fatty acid/lipid based nutraceutical composition. The nutraceutical composition and method is based on the insight that different forms of high omega-3 fatty acid lipids (e.g. triglyceride form, ethyl ester form, free fatty acid form, phospholipid form) have different molecular modes and levels of action. Specifically the phospholipid form is likely more effective at promoting membrane fluidity and permeability, while the free fatty acid form is likely more effective at regulating cell receptors, such as the PPARa receptors, that are responsible for various metabolic effects including lipid metabolism. The desirability of producing omega-3 compositions that may act synergistically and thus more robustly to improve health and to some extent mimic markers of life extension such as shown by caloric restriction, along with specific optimization methods, markers, and compositions are taught.
CA2968954	Universal Stabilization Tech Inc (US)	**Compositions containing ambient-temperature stable, inactivated but therapeutically active biopharmaceuticals & methods for formulation thereof.** The disclosure concerns compositions containing inactivated but therapeutically active biopharmaceuticals, and methods for formulation thereof. Biopharmaceuticals are encapsulated and immobilized in dry amorphous carbohydrate-glass and irradiated for inactivation while in the dry state. The resulting compositions provide ambient-temperature stable, therapeutically active but inactivated biopharmaceuticals for use in vaccines and other applications.
US10457948	Univ Kent (GB)	**Biopharmaceutical production method.** The present invention resides in a method for the manufacture of a disulphide-requiring biopharmaceutical having an element of at least tertiary structure using wild type E. coli.
ES2734600	Univ Sevilla, et al. (ES)	**Composition of aloe gel and hydroxytyrosol.** The invention relates to a pharmaceutical or nutraceutical composition comprising between 90-99.9% of aloe gel powder and 0.1-10% of hydroxytyrosol, characterised in that the aloe gel powder does not contain aloin. The invention also relates to the use of the composition for preparing a medicine for the treatment and/or prevention of metabolic syndrome and type II diabetes and as a dietary supplement.

Bioaditivos alimentarios		
Nº Publicación	Solicitante (País)	Contenido técnico
EP3544441	Corn Products Dev Inc (US)	**Starch-based texturizers for food compositions.** Disclosed herein is one or more food compositions comprising at least one edible ingredient and a texturizing agent comprising an inhibited starch and a non-granular, enzymatically-debranched waxy potato starch. Also disclosed herein is a process for making said food compositions, the method comprising adding a texturizing agent comprising an inhibited starch and a non-granular, enzymatically-debranched waxy potato starch to the composition, wherein an effective amount of the texturizing agent is added to thicken the food composition. The texturizing agent can be used to replace protein and/or fat in said one or more food compositions.
US2019357568	Dehghani Saeid (IR)	**Food product and method of making said food product.** A composition of an herbal-based food product and method of making said food product, is disclosed. The food product comprises, one or more herbal distillates, one or more sweetening agents, Salep and one or more natural additives of predetermined composition. Further, the method of preparing the food product, comprises the steps of: (a) introducing herbal distillate or combination of herbal distillates in a receptacle, (b) preparing a mixture of one or more sweetening agents in Salep to a predetermined amount, (c) adding said mixture to the herbal distillates and mixing to a predetermined time for dissolving the mixture in the herbal distillates, and (d) adding and mixing one or more optional natural additives at step (c), thereby providing the food product in any one of hot, cold or mild nature.
WO2019228947	Fermentalg (FR)	**Method for cultivating unicellular red algae (ura) on a mixture of substrates.** The invention relates to the cultivation of URA for producing biomass for the production of products of interest, such as dry biomass or compounds or mixtures of compounds of interest extracted from the biomass produced, particularly food pigments or colouring agents. The invention more particularly relates to the industrial production of said biomass, which must satisfy an economic equilibrium of profitability, with both an increase in productivity (quantity of biomass and of compounds of interest in the biomass) and an economically acceptable production cost.
WO2019199708	Hydro One Llc (US)	**Probiotic beverages containing a cannabinoid.** Disclosed herein are probiotic beverages containing cannabinoid. The beverages disclosed herein may be formulated as water-based drinks or yogurt drinks, for example, and contain live, active cultures of probiotic microorganisms or may contain spores of probiotic microorganisms. The beverages may additionally include prebiotic substances to enhance the growth and colonization of the probiotic microorganisms in the intestines. The beverages have anti-inflammatory effects due to the presence of the cannabinoid but are non-narcotic. Further, the beverages serve to enhance gut health due to the presence of probiotics and optional prebiotics. The beverages are, at a minimum, composed of water, a cannabinoid, a probiotic microorganism, and optionally a tea extract, but may contain other components such as prebiotics, vitamins, minerals, other nutrients, and other natural products to provide additional health benefits and/or to improve the flavor, texture, and aroma of the beverages.
US2011236551	IMP Sugar Company, et al. (US)	**Process for the manufacture of co-crystallized sucrose natural sweeteners and the products thereof.** Processes for the production of reduced calorie sweetening compositions having a natural sweetener such as a steviol glycosides (e.g., rebaudioside A) and sucrose as the major components is described, as well as the product of such processes having unique physical and sensory characteristics. In particular, a co-crystallization process of manufacturing a reduced calorie sweetening composition that comprises both sucrose and at least one natural sweetener as a co-crystallized product is disclosed, as well as the free-flowing powder product resultant therefrom.

Nº Publicación	Solicitante (País)	Contenido técnico
EP3232816	Nestec SA (CH)	**Savoury concentrates as sauce with a jellified texture based on leguminous starch.** The invention relates to a composition in gel form for preparing a food product, to a process for preparing a food product, and to the use of the composition for preparing a food product. In particular, the invention relates to a gel composition comprising legume starch as gelling agent and un-gelatinised starch for preparing savoury food products such as sauces, gravies, and soups.
WO2019199231	Pulau Sambu Singapore Pte Ltd (SG)	**A production method for pure coconut powder without the use of foreign additives.** The present invention involves a new method to produce pure coconut powder. Under ultra-high-pressure condition, the fiber of coconut meat shortens and puffs, consequently, its specific surface area increases. This enhances its ability to absorb fat, which enables the natural fiber in coconut meat to act as the excipient (carrier) of spray drying or lyophilization (whereas in traditional coconut milk powder formulations, art starch hydrolysates are added to act as the excipient). Further the natural fiber replaces emulsifiers and anti-caking agents used in the traditional formula. This produces a pure coconut powder that has no foreign additives, but at the same time has a good instant solubility and reconstitution stability, as well as possesses rich dietary fiber. This invention produces no by-product (desiccated coconut), realizing the zero-residue processing of coconut meat.
EP3558033	Unilever NV (NL), et al.	**Food concentrate.** The present invention is in the field of concentrated food compositions. It further relates to a process to prepare the same. It further relates to the use of said food composition for preparing a bouillon, a soup, a sauce, gravy or a seasoned dish. Present day consumers prefer natural ingredients in food products, especially ingredients that they are familiar with. One of the most common gelling agents available in concentrated foods is gelatine. Homemade stock, prepared from animal bones or carcasses, contains gelatine and when cooled down has a gel like appearance. Nevertheless, gelatine used as single gelling agent does not provide the required gelling in the presence of the high salt content needed for a savoury concentrate, which remains to be desired. It is therefore an object of the present invention to provide high salt structured food concentrates, based on gelatine, typically in the form of a gelled food concentrate.
US2019343160	Univ Zhejiang Ocean (CN)	**Natural compound biopreservative for sashimi.** A natural compound biopreservative for sashimi. The biopreservative is prepared from 20-30 parts by weight of a Fagopyrum tataricum extract, 10-15 parts by weight of an Osbeckia chinensis extract and 5-10 parts by weight of a mint extract. The preservative of the invention has good antibacterial and bactericidal performances and oxidation resistance, thereby maintaining the freshness and taste of the sashimi.
EP3368611	Wild Flavors Inc (US)	**Natural colorants and processes of making the same.** The present invention is directed towards natural colorants comprising a material selected from the group consisting of genipin, purified genipin, pre-genipin compounds, iridoid compounds, genipin derivitatives, a genipin-containing substance, and combinations of any thereof; and a primary amine containing compound. Processes of making natural colorants are further disclosed. Additionally, processes of producing a desired color of natural colorants are disclosed.

Bioproductos alimenticios para animales		
Nº Publicación	Solicitante (País)	Contenido técnico
WO2019221615	Bardales Mendoza Enrique (PE), et al.	**Method for obtaining oils in powder form by changing from a liquid phase to a solid phase.** The invention relates to a method for the transformation of a vegetable oil into powder, preferably for being mixed into balanced feed for animals. The object of the method is to transform any vegetable oil with a high unsaturated fatty acid content in its natural state or fats from any source into powder. Although soybean oil is the most readily available product in Argentina, the method is possible with any oil, both pure or with mixtures from different sources (soya, corn, sunflower seed, linseed, palm, coconut, etc.)
EP3552497	Borges Agricultural & Ind Edible Oils Sau (ES)	**A fatty preparation, a process for making said fatty preparation, and a product containing the same.** The present invention relates to a process for making a fatty preparation to be incorporated in a meat or cheese product or in a product for feeding animals, wherein said fatty preparation does not comprise fats with a plant origin saturated fat content higher than 25% by weight nor fats with an animal origin saturated fat content higher than 15% by weight nor trans fats. The present invention further relates to a fatty preparation and to a meat or cheese product or product for feeding animals comprising the same
WO2019205422	Guangdong Cleamol Tech Company Limited (CN)	**Bacillus coagulans xp and application thereof in animal feed production.** Provided are a Bacillus coagulans XP and application thereof in animal feed production. Said Bacillus coagulans XP was deposited at the China Center for Type Culture Collection on 25 December 2017 under the deposit registration number CCTCC NO.: M2017836. The bacterium belongs to the genus Bacillus, is a Gram-positive bacterium, and its colonies exist in single or in pairs; its cells are rod-shaped, terminal spores, have no flagella, and form endospores; its single cell has a length of 4 to 6 μm and a width of 0.4 to 0.9 μm. The bacteria are screened and extracted from biomass treatment waste, screened by means of a GYS medium, and cultured by means of an MRS medium. The bacteria is suitable for use as an animal feed additive, and has the obvious effects of increasing the growth rate of pigs and poultry, increasing the feed utilization rate, and reducing the diarrhea rate and mortality rate of animals.
CA2892598	Hills Pet Nutrition Inc (US)	**Animal food composition and process for production.** An animal food composition comprising a protein source and corn starch, wherein native high-amylose corn starch comprises at least 50% of the corn starch. The composition can be used to treat or prevent a food allergy in an animal. Also, a process for the preparation of an animal food composition comprising mixing a protein source, corn starch and water to form a mixture and heating the mixture; wherein native high-amylose corn starch comprises at least 50% of the corn starch.
US2019313666	Mars Inc (US)	**Pet food product comprising microalgae as binder.** The use of algal biomass as a binder in reconstituted animal material comprising animal protein is described. The reconstituted animal material is suitable for, or present in, wet pet food products. In particular the use of algal biomass as a partial or full replacement for animal blood plasma binder in reconstituted animal material comprising animal protein is described. The reconstituted animal material is suitable for, or present in, wet pet food products.
CA2979393	Novita Nutrition Llc (US)	**High protein distillers dried grains with solubles and methods thereof.** Distillers dried grain with solubles (DDGS), such as DDGS from an ethanol process, can undergo a denaturing process resulting in higher measurable protein content. The denatured DDGS by product, which may include higher measurable rumen undegradable protein products or bypass proteins, can be used to produce distillers meal, which may be used as an animal feed and are able to survive the digestive process through the rumen of ruminant animals that results in more protein bioavaible to the ruminant animal in the later stages of digestion and absorption. The DDGS co-product can undergo a denaturing process to produce distillers meal having an increased rumen undegradable protein level that is about 5% to about 25% more than a rumen undegradable protein level of the distillers meal prior to the denaturing process of the DDGS co-product. Such high protein content compositions can also be used in methods for increasing nitrogen content in soil, promoting crop production, and fertilizing horticultural and/or agricultural crops.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2019194825	Plant Sensory System Llc (US)	**Non-transgenic plants with mutated glutamate decarboxlases for agronomic benefits.** The present invention describes a non-transgenic approach to produce truncated glutamate decarboxylase (GAD) genes and the corresponding truncated gene product in plants. More particularly, the invention relates to the removal of the calcium-calmodulin binding domain (CaM-BD) from plant GADs using site-directed mutagenesis or gene-editing techniques. The removal of the CaM-BD from plant GADs results in an active GAD enzyme that is not regulated by the CaM-BD, which increases gamma aminobutyric acid (GABA) production in plant cells, organs or whole plants. Non-transgenic plants with truncated GAD have agronomic benefits, including increased GABA, biomass, yield, sugar, and tolerance to abiotic and biotic stressors. In addition, GABA from plants could be used as nutraceutical, pharmaceutical, or therapeutic compounds or as a supplement in animal feed or for animal feed or as an enhancer for plant growth or yield.
EP3217808	Roquette Freres (FR)	**Method for the valorisation of yeast biomass resulting from the production of ethanol.** The invention relates to a method for producing ethanol, mainly from cereals and more particularly wheat, allowing an optimum recovery of the yeast biomass. The invention also relates to the yeast biomass per se and to the use thereof as animal feed.
EP3571931	Van Gorp Jacoba Sebastiaan Maria (NL)	**Process for the production of animal feed.** The present invention relates to a method for making a suspension of cereal, said method comprising the steps of:- supplying one or more types of cereal, preferably selected from the group consisting of wheat, barley, oats, spelt and maize and one or more combinations thereof;- comminuting, preferably cracking and/or by means of a horizontal hammer mill, the one or more types of cereals; and- hydrothermal treating a mixture of water and the comminuted cereals in the presence of sodium bicarbonate to obtain a suspension of the one or more cereals. The invention further relates to a suspension of one or more cereals. The invention further relates to a method for feeding animals.
WO2019218292	World Houseware Producing Company Ltd (CN)	**Jade perch feed and preparation method therefor and use method therefor.** Jade perch feed and a preparation method therefor and a use method therefor, the jade perch feed is prepared from the following components by weight per 100 parts by weight: 42-48 parts of food waste protein powder, 8-12 parts of soybean meal, 8-12 parts of peanut bran, 4-6 parts of fish meal, 4-6 parts of yeast, 19-24 parts of starch, 1-4 parts of vitamin and mineral pre-mixture, and 0.1-0.4 parts of wolfberry powder; The preparation method comprises: performing oil removal, pulverizing, and fermenting on food waste to obtain food waste protein powder; grinding wolfberry into powder; and puffing all the components at a high temperature to form feed granules; The use method comprises feeding fish every day by means of a feeder with said feed of an amount of 3% of the body weight of the fish, and adjusting the feed amount every two weeks.

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VT BIOMASA PATENTES

Boletín elaborado con la colaboración de:

Ministerio de Ciencia, Innovación y Universidades
Paseo de la Castellana, 162
28047 Madrid
Tel: 91 603 83 99
E-mail: consultas.sgecpp@mineco.es
www.mineco.es

OEPM
Paseo de la Castellana, 75
28071 Madrid
Tel: 91 349 53 00
E-mail:carmen.toledo@oepm.es
www.oepm.es

Bioplat
C/ Doctor Castelo 10, 4ºD
28009 Madrid
Tel.: 91 074 54 28
E-mail: secretaria@bioplat.org
www.bioplat.org

CIEMAT
Avda. Complutense,40
28040 Madrid
Tel: 91 346 08 99
E-mail:uip@ciemat.es
www.ciemat.es