VT BIOMASA PARA LA BIOECONOMÍA 57

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PATENTES

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OBJETIVOS DE DESARROLLO SOSTENIBLE

7 ENERGÍA ASEQUIBLE Y NO CONTAMINANTE
8 TRABAJO DECENTE Y CRECIMIENTO ECONÓMICO
9 INDUSTRIA, INNOVACIÓN E INFRAESTRUCTURA
12 PRODUCCIÓN Y CONSUMO RESPONSABLES
13 ACCIÓN POR EL CLIMA

BOLETÍN BIOCIRCULARIDAD: BIOENERGÍA Y BIOPRODUCTOS

Captura y valorización de CO_2 biogénico

La transición global hacia fuentes de energía renovable constituye un pilar fundamental para mitigar el cambio climático y alcanzar la neutralidad de carbono. En este contexto, la Unión Europea (UE) considera los biocombustibles y la bioenergía como elementos estratégicos para reducir la dependencia de los combustibles fósiles y disminuir las emisiones de gases de efecto invernadero.

Sin embargo, la producción y el uso de biocombustibles y bioenergía también generan emisiones de dióxido de carbono (CO_2) biogénico, procedentes de procesos como la combustión, la fermentación y el tratamiento de biomasa. Europa emite aproximadamente 506,7 millones de toneladas de CO_2 biogénico al año, gran parte de las cuales se libera a la atmósfera. Aunque este CO_2 forma parte del ciclo de carbono a corto plazo, su gestión eficiente es esencial para maximizar los beneficios ambientales de la bioenergía. En este sentido, explorar estrategias de captura y utilización de carbono (CCU, por sus siglas en inglés) se presenta como una oportunidad clave para aprovechar este potencial aún infrautilizado.

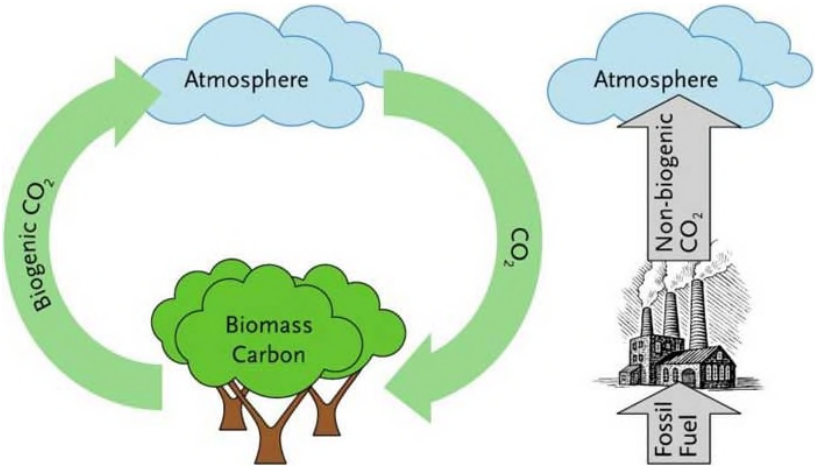

Figura 1. Tipo de emisiones de CO_2. Fuente: https://www.forestalmaderero.com/articulos/item/que-es-el-carbono-biogenico.html

En Europa, este creciente interés se refleja tanto en el aumento de proyectos dedicados al tratamiento del CO_2 biogénico como en el incremento de patentes orientadas a su valorización. En la Tabla 1 se recogen algunos ejemplos de proyectos concedidos en los últimos cuatro años por la Unión Europea y, en la Tabla 2, se presentan ejemplos de solicitudes de patentes publicadas entre 2021 y 2025 pertenecientes a entidades europeas. Haciendo doble click en el número de publicación de los documentos de patente, se puede acceder al texto completo de Espacenet.

Tabla 1. Proyectos europeos

CERNET: biogeniC gasEsous caRbon conversion into high added value chemicals and ingredients through a bio-based NETwork (2025-2029)
UNICO2RN: Flexible and Efficient Capture and Bioconversion of CO_2 to Materials and Ingredients (2025-2029)
GoodBy0: Multi-commodities microbial-driven BiOrefinery based on food-processing industry wastes, biogenic CO_2 and bioprocess wastewaters (2024-2028)
COSEC: Biogenic CO_2 capture into Sustainable Energy Carriers: A novel photosynthetic and hydrogenotrophic CO_2 fixation combined with waste nutrient upcycling for production of carbon negative energy carriers (2024-2027)
HICCUPS: Highly-Innovative technology demonstration for bio-based CO_2 Capture and Utilization for production of bulk Plastic applicationS (2023-2027)
M2ARE: Maritime Methanol: Adaptable, Renewable and Environmentally-friendly (2023-2027)
POSEIDON: Propulsion Of Ships with E-Methanol In favour of the Decarbonisation Of Naval transport (2023-2027)
Turn2X: Decarbonising industry with Renewable Natural Gas (2024-2026)
CRONUS: Capture and Reuse Of biogenic gases for Negative-emission - sustainable biofUelS (2022-2026)
NET-Fuels: Increasing biomass conversion efficiency to carbon-negative sustainable biofuels by combination of thermal and bio-electrochemical processes (2022-2026)

Tabla 2. Documentos de Patente pertenecientes a solicitantes europeos

Method for production of methanol from CO_2 and hydrogen with improved carbon efficiency **Nº publicación:** WO2025132842A1 **Solicitante/s:** Topsoe AS (Dinamarca) **Fecha de publicación:** 26-06-2025
Process for preparing a CO_2-negative polyethylene terephthalate from renewable raw materials **Nº publicación:** EP4558541A1 **Solicitante/s:** Volkswagen AG (Alemania) **Fecha de publicación:** 28-05-2025
Vinyl acetate having a natural abundance of carbon-14 from non-fossil resources **Nº publicación:** EP4553060A1 **Solicitante/s:** Basf SE (Alemania) **Fecha de publicación:** 14-05-2025
Device and method for producing alkali hydrogen carbonates and alkali carbonates from biogenic carbon dioxide and for preparing biogenic raw gas, and granulated alkali hydrogen carbonate and alkali carbonate **Nº publicación:** WO2025077979A1 **Solicitante/s:** DBFZ German Biomass Research Center GmbH (Alemania) **Fecha de publicación:** 17-04-2025
Facility for processing CO_2 from a high-output CO_2 gas source, and means for drying wood in a CO_2 atmosphere **Nº publicación:** WO2024146703A1 **Solicitante/s:** WAYS SAS (Francia) **Fecha de publicación:** 11-07-2024
Method of reducing water consumption in bioethanol production process **Nº publicación:** WO2023213963A1 **Solicitante/s:** G2B Biosolutions APS (Dinamarca) **Fecha de publicación:** 09-11-2023
Process for capturing carbon dioxide from a gas **Nº publicación:** EP4154968A1 **Solicitante/s:** Trovant Tech SL. (España) **Fecha de publicación:** 29-03-2023
System and process for recycling biogenic carbon dioxide **Nº publicación:** EP4145990A1 **Solicitante/s:** Future Biogas Ltd (Gran Bretaña) **Fecha de publicación:** 17-08-2022
Method and system for capturing and sequestering biogenic carbon dioxide **Nº publicación:** EP4043089A1 **Solicitante/s:** Future Biogas Ltd (Gran Bretaña) **Fecha de publicación:** 17-08-2022
CO_2 capture using alkaline media for the preparation of sodium carbonate **Nº publicación:** EP3995205A1 **Solicitante/s:** Univ Castilla - La Mancha et al. (España) **Fecha de publicación:** 11-05-2022
Methods and systems for gasification of hydrocarbonaceous feedstocks **Nº publicación:** GB2585644A **Solicitante/s:** LFEOG LTD (Gran Bretaña) **Fecha de publicación:** 20-01-2021

PATENTES BIOENERGÍA

Biocombustibles sólidos (pellets, biochars, bio RDFs, bio SRFs, etc.)		
Nº Publicación	Solicitante (País)	Contenido técnico
WO2025193297A1	Astron Solutions Corp (US)	**Methods and apparatus for supertorrefaction of biomass.** Under current practices, agricultural or landscaping waste left in a field or forestry waste left in a forest will decay and release greenhouse gases. In addition, forestry waste also poses a high risk for fires. Accordingly, mechanisms are provided to allow efficient conversion under anaerobic conditions of biomass, such as agricultural or forestry waste, into biocarbon product, such as biochar, biocoal, inert carbon and/or activated carbon, using molten salts as a more efficient heat transfer medium than conventional heat. Specifically, biomass is converted into biocarbon product during a supertorrefaction process during which molten salts are pumped under anaerobic conditions from a molten salt reservoir to a batch process cooker that holds the biomass. The salts are washed from the resulting biocarbon product as needed.
WO2025175266A1	Drax Biomass Inc (US)	**Biomass processing.** A method and apparatus are provided for producing biomass pellets. Biomass pieces are received in a sizing stage and the biomass pieces are processed in the sizing stage to reduce their average size. Moisture is driven off from the biomass in a drying stage. The biomass is compressed to form pellets in a pelletizing stage. After the drying stage, there is no further active reduction in the average size of the biomass pieces.
EP4606767A1	Joos Holzgas GmbH (DE)	**Method and device for reducing harmful substances in vegetable coal.** Method and device for producing a combustible gas mixture from a carbon-containing starting material, in particular from lumpy wood, with a feed unit for feeding the starting material to a reactor, wherein the reactor comprises at least one discharge unit for discharging a carbon-containing residue, in particular coal particles, wherein a post-treatment unit is provided for post-treating the residue to reduce polycyclic aromatic hydrocarbons [PAH] before the coal particles leave the post-treatment unit via a discharge opening, wherein in order to produce a largely uncontaminated biochar, the post-treatment unit comprises a process chamber into which at least the contaminated coal particles are fed above, together with the PAH produced during the combustion of the starting material, and below which a further gas in order to form a gas separation zone within the process chamber which largely prevents the passage of the PAH in the direction of the discharge opening.
WO2025143392A1	Kinava Co Ltd (KR)	**Method for producing bio-solid fuel using cassava waste.** The present disclosure relates to a method for producing a bio-solid fuel using cassava waste. A method for producing a bio-solid fuel using cassava waste, according to one embodiment of the present disclosure, comprises: a step (S100) of supplying cassava waste as a raw material; a step (S200) of supplying an acid catalyst to the raw material and hydrothermally carbonizing same at a temperature of 160 °C to 240 °C; and a step (S300) of producing the hydrothermally carbonized product as a bio-solid fuel, wherein the cassava waste includes starch waste sludge, root waste, and peel waste, and the acid catalyst is a single acid catalyst.
WO2025151915A1	Mondi AG (AT)	**Method for producing a modified lignin derivative, modified lignin derivative and biomass pellets thereof.** According to a method for producing a modified lignin derivative a lignin dispersion of lignin or a derivative thereof is acidified, mixed with a modifier and filtered off after ageing and optionally purified. The invention also relates to a modified lignin derivative of this type, to the use thereof and to biomass pellets containing same.
WO2025176712A1	Rockwool AS (DK)	**Man-made vitreous fibre (MMVF) as mineral additive to high temperature energy conversion processes.** The invention is directed to a heat generation process, comprising the step of combusting biomass as fuel in a boiler, wherein the biomass or an admixture of the biomass and at least one other fuel, preferably coal, is combusted in the presence of an additive comprising man-made vitreous fibers (MMVF), in particular man-made vitreous fiber (MMVF) waste. The additive can avoid or mitigate slagging and fouling in boilers. Moreover, the use of waste materials provides a more sustainable and cost effective process.
WO2025186583A1	Slaughter Philip (GB)	**Biochar.** The present invention relates to biochar, and particularly, although not exclusively, to the carbonisation of a photosynthetic organism to generate biochar. The invention extends to methods for converting a photosynthetic organism into biochar, and encompasses apparatus and/or reactors used to perform such methods.

Syngas		
Nº Publicación	Solicitante (País)	Contenido técnico
WO2025165698A1	Arbor Energy and Resources Corp (US)	**Integrated gasification and power generation system and methods of use.** An integrated gasification and power generation system includes a gasifier configured to receive biomass and generate syngas, wherein the gasifier is configured to operate at a pressure of approximately 100 bar to approximately 400 bar. The system further includes a recuperated Brayton thermodynamic power generation loop configured to receive the generated syngas and convert the generated syngas into a CO2 working fluid, wherein at least a portion of the CO2 working fluid from the power generation loop is reintroduced from the power generation loop to the gasifier.
WO2025157945A1	Cap Ingelec (FR)	**Syngas production system and syngas production process.** The invention relates to a syngas production system (100) comprising at least one first dense fluidized bed reactor (10), at least one second dense fluidized bed reactor (11), at least one circulating fluidized bed reactor (12), at least one separator (13) and at least one steam generator (30). The invention provides a gas production system comprising at least one syngas production system (100) according to the invention. Moreover, the invention relates to a syngas production process (200) that can be implemented in a syngas production system (100) according to the invention and to a gas production process comprising a gas production process that can be implemented in a gas production system according to the invention.
WO2025176299A1	Glock Tech GmbH (AT)	**Device and method for gasifying biomass.** The invention relates to a device (1) for gasifying biomass, comprising - a gas generator (2) having a fuel supply (8), an air supply (4), an ash and coal discharge (30), and a reaction chamber (3) for generating product gas, - a starter (11), which can be coupled at least temporarily to the gas generator (2), for providing starting energy during a gas generator starting process, - a product gas filter (18) fluidically connected to the gas generator (2) via a product gas line (13), and optionally a starting line (14) fluidically connected to the product gas line (13). The device is characterized in that - at least one heat source (12) for at least temporarily treating gas is provided in the gasification device (1). The invention further relates to two methods for heating the gasification device (1) during a cold start.
WO2025166392A1	Jenascent GmbH (AT)	**Reactor for producing coal and synthesis gas from biomass.** The invention relates to a reactor (1) for producing coal and synthesis gas from biomass, having a working chamber (2) which is laterally delimited by a working chamber wall (3), an inlet (4) through which the biomass can be introduced into the working chamber (2), and an outlet (5) through which coal and synthesis gas can be discharged from the working chamber (2), wherein biomass can be moved on a transport path along a transport direction (7) through the working chamber (2) from the inlet (4) to the outlet (5). According to the invention, an electrically conductive element is provided in the working chamber (2) and/or in the working chamber wall (3), wherein the electrically conductive element can be heated electrically, preferably inductively, in particular by an induction coil (8), in order to convert biomass located in the working chamber (2) into synthesis gas and coal. The invention also relates to a method for producing coal and synthesis gas from biomass.
WO2025163482A1	Milano Politecnico (IT)	**Process for the preparation of syngas from carbonaceous waste material.** Process for the production of syngas from carbonaceous waste material and CO2 comprising the following stages: a stage a) comprising the reaction [R1] in which the carbonaceous material is reacted with carbon dioxide to obtain carbon monoxide according to the following reaction scheme: [R1] CO2 + C = 2 CO; a stage b) of producing H2 and adding it to the carbon monoxide obtained in stage a) to obtain syngas, wherein stage b) comprises at least one of the following stages: b1) the carbon monoxide from the previous stage is reacted with water vapour to obtain carbon dioxide and hydrogen according to the following reaction scheme: [R2] CO + H2O = CO2 + H2 b2) producing hydrogen by means of electrolysis of water, which is added to the carbon monoxide from stage a). The invention also relates to the unit in which stages a) and b1) are conducted as well as the related apparatus comprising the aforementioned unit.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025158469A1	Nextchem Tech SPA (IT)	**Method and apparatus to improve the energy efficiency of thermal conversion processes of biomasses, wastes and/or waste derived fuel into syngas and his subsequent conversion in other chemicals.** A method and apparatus for improving the efficiency of thermal conversion conversion of said syngas into chemical products, said method foresees the use of a cooling and separation step of the raw syngas performed by an all-radiant membrane, preferably metallic, tube wall boiler type wherein the raw syngas, outcoming from gasification, is partially cooled down from at least 1100 °C to not less than 700 °C, and also at the same time in the same step, the coarse particle is separated from the gas stream through a routing of the stream inside the same boiler, wherein the recovered heat is used for steam production and wherein said all-radiant membrane tube wall boiler perform both the operation of cooling and separation, wherein the use of said all-radiant membrane tube wall boiler type allows both a saving of water consumption in the deep polishing steps and also a reduction of C02 emissions, and wherein the steam produced in said all-radiant membrane tube wall boiler type is used for any eventually step of syngas conversion according to the specific chemical production, allowing a reduction of power, natural gas consumption and an optimization of the overall conversion process.
WO2025168184A1	Sempercycle APS (DK)	**Syngas production from waste materials.** The invention relates to a method for producing syngas from carbonaceous feedstock comprising two or more different compositions of carbonaceous material (e.g. plastics, textiles, biomass, organic matter, natural gas, biogas, carbon dioxide, waste gases), the method comprising: Gasification of the waste feedstock by feeding the feedstock into a primary reaction zone, hereby generating a first output stream; Feeding the first output stream from the first reactor into a secondary reaction zone hereby generating a second output stream; Feeding the second output stream into a cleaning and conditioning reaction zone, hereby generating a third output stream Feeding the third output stream from the cleaning and conditioning reaction zone into a product synthesis reaction zone hereby generating a fourth output stream; Separating the fourth output stream from the product reaction into a fifth liquid crude product stream which is sent for further treatment (e.g., distillation) and at least a sixth and a seventh gas stream; At least part of the sixth gas stream is recycled to the product synthesis reaction zone; At least part of the seventh gas stream is looped back to the primary reaction zone for further conversion; Gasification parameters for the first and the second reaction zones are controlled to take into account the composition and amount of the recycled gas streams; and Where part of the second output stream from the second reaction zone is separated as a CO stream and led into a reaction zone performing a water gas shift process (WGSR) to produce a H2 stream, where at least part of the produced H2 stream is used for balancing the module M = (H2 - CO2) / (CO + CO2) to a level in the range 1, 5-3,0 in the cleaning and conditioning reaction zone prior to the product synthesis reaction zone, where the separation is carried out using a membrane separation process.

Biogás

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025182335A1	Air Water Inc (JP)	**Production device and production method for concentrated gas.** Provided is a device for producing a concentrated gas obtained by concentrating methane gas in a biogas that contains the methane gas, carbon dioxide gas, and moisture, the device including: a compressor for compressing the biogas; a cooling device for cooling the biogas compressed by the compressor and thereby removing some of the moisture as condensate water; a heating device for heating the biogas cooled by the cooling device; and a separation device for separating at least some of the carbon dioxide gas and at least some of the residual moisture from the biogas heated by the heating device.
WO2025155513A1	Air Prod & Chem (US)	**4-Stage membrane process with sweep for biogas upgrading.** Disclosed herein are membrane-based gas separation methods and systems. The methods and systems may, in particular, be used for separating a feed stream comprising methane and carbon dioxide (such as for example a biogas feed stream) in order to provide a methane product stream (such as for example a biomethane stream).
WO2025163583A1	Hyperthermics AS (NO)	**Reduction of retention time in biogas reactors.** The present invention provides systems and methods for increasing throughput and biogas production in a biogas reactor by pretreatment with hyperthermophilic organisms so that the retention time of biomass in the bioreactors can be decreased.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025183307A1	Greeneple Co Ltd (KR)	**Method for producing biogas from organic waste using dry bioelectrochemical anaerobic digestion process.** Provided is a bioelectrochemical leaching bed reactor combined with a microbial electrolysis device, the bioelectrochemical leaching bed reactor being characterized by comprising: a reactor upper part including a basket (130) for fixing the food waste; a reactor lower part for accommodating leachate generated from the reactor upper part; and the microbial electrolysis device provided in the reactor lower part, wherein the microbial electrolysis device comprises a membrane-type electrode and a voltage application unit for applying a voltage to the electrode, and the voltage application unit applies a voltage of more than 0.3 V and less than 1.2 V.
EP4582548A1	Ingenia Srl (IT)	**Process for the continuous production of biomethane from biomass with CO2 sequestration.** Process for the continuous production of biomethane from biomasses, comprising the following steps:i) preparing a biomass (1);ii) diluting and alkalizing the biomass (1) by adding a basic mixture from algal culture and an alkaline solution (2), up to a pH comprised between 9.0 and 13.0;iii) subjecting the diluted and alkalized biomass to alkaline hydrolysis, at a temperature comprised between 55 and 90°C;iv) subjecting the hydrolysed biomass to ammonia stripping by diffusion of a biogas, to obtain a hydrolysed and deammonified biomass;v) neutralizing the hydrolysed and deammonified biomass, coming from step iv), by diffusing the CO2 present in a biogas, to obtain a neutralized biomass;vi) subjecting the neutralized biomass, coming from step v), to anaerobic digestion, to obtain a biogas (4) and a digestate (5), and recycling said biogas (4) in step v), and subsequently from step v) in step iv);vii) subjecting the digestate (5) to a separation step, to obtain a solid or semi-solid digestate (6) and a clarified digestate (7);viii) feeding the clarified digestate (7) into a prepared algal culture to obtain a basic mixture (8) from the algal culture;ix) recycling said basic mixture (8) from algal culture according to one of the following alternatives:ix.i) the basic mixture (8) of algal culture is recycled in step ii) of dilution and alkalization of the biomass (1), if said basic mixture of algal culture (8) has a pH ≥ 9.0; orix.ii) the basic mixture (8) of algal culture is recycled upstream of step viii), if said basic mixture of algal culture (8) has a pH < 9.0;x) subjecting the biogas, coming from step vi), to purification, by removing gaseous ammonia and residual moisture, to obtain biomethane.
WO2025171471A1	Iogen Corp (CA)	**Wet oxidation of digestate from anaerobic digestion.** A process for producing biogas that includes (i) anaerobically digesting lignocellulosic feedstock in an anaerobic digestion to produce a digestate; (ii) treating at least some of the solids from the digestate in a wet oxidation with lime; (iii) precipitating and recovering calcium from liquid from the wet oxidation as calcium carbonate; (iv) sending the calcium carbonate to calcination to produce carbon dioxide and calcium oxide; and (v) recycling at least some of the calcium oxide produced during the calcination or calcium hydroxide derived therefrom to the wet oxidation.
WO2025177158A2	Nuovo Pignone Tecnologie – Srl (IT)	**System for producing energy and biomethane from waste.** A system for producing energy and methane includes a waste-to-energy unit configured to produce energy and a flue gas by combusting waste and an oxidizing agent having oxygen and a carbon dioxide (CO2) separation unit configured to separate CO2 from the flue gas to provide separated CO2. The system also includes a bio-methanation unit configured to generate methane (CH4), heat, and water using the separated CO2 received from the CO2 separation unit and received hydrogen (H2) gas. The system further includes an electrolyzer coupled to a source of water (H2O) and an electric power source supplying electricity and configured to split the H2O to generate the oxygen used in the oxidizing agent and the H2 gas used in the bio-methanation unit.
WO2025163066A1	Obrist Tech GmbH (AT)	**Method for producing a sustainable energy carrier.** The invention relates to a method for producing a sustainable energy carrier, the method including the following steps: - producing a gas (2) comprising methane (3) and carbon dioxide (4) from organic waste (1) in a fermentation unit (10), - separating the methane (3) and the carbon dioxide (4) from the gas (2) in a separation unit (20), - converting the methane (3) to hydrogen (5) and carbon (6) in a converting unit (30), in particular a pyrolysis unit, - converting the carbon dioxide (4) and the hydrogen (5) to methanol (7) in a methanol synthesis unit (40), wherein the separation unit (20), the converting (30) unit and the methanol synthesis unit (40) are powered, preferably exclusively, by electricity and/or heat produced in a solar power unit (50).

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025163124A1	Planet Biogras Group GmbH (DE)	**Method and device for producing biogas from a substrate.** The present invention relates to a method (100) for producing biogas from a substrate, the method (100) comprising: - introducing (101) substrate into a container (201) by means of a feed system (205), - thoroughly mixing (103) the substrate by means of a mixing mechanism (203) arranged in the container (201), - determining (105) at least one state of the substrate by means of at least one contactless sensor (207), with values for at least one variable which have been measured by the at least one contactless sensor (207) being preferably assigned to one state among multiple states by means of a machine learner, and - adjusting (107) the feed system (205) and/or the mixing mechanism (203) according to the determined state of the substrate.
EP4621059A2	Sol Spa et al. (IT)	**Process and apparatus for the production of biogas in anaerobic digestion plants.** The present invention relates to a process, and related equipment, for increasing the production of bio-methane in biogas in anaerobic digestion plants, that takes advantage of injecting carbon dioxide in bubble form, either alone or in mixture with other gases, into the biomass. The present invention also relates to a control and/or measurement system of the digestate pH during the process of the invention.

Bioalcoholes (bioetanol, biometanol, etc.)

Nº Publicación	Solicitante (País)	Contenido técnico
CN120330071A	Anhui Jinhe Ind Co Ltd et al. (CN)	**Method for producing fuel ethanol by using furfural residue enzymolysis liquid glucose.** The invention relates to the field of biochemical engineering, in particular to a method for producing fuel ethanol by using saccharomyces cerevisiae to carry out enzymolysis on a sugar solution by using furfural residues. The method comprises the following steps: (1) carrying out primary seed culture by taking saccharomyces cerevisiae preserved in a glycerol tube as a seed and YPD as a culture medium; (2) performing secondary seed culture by taking the primary seeds as seeds and diluted furfural residue enzymolysis liquid glucose as a culture medium; (3) carrying out ethanol fermentation by taking the secondary seeds as seeds and taking the furfural residue enzymolysis liquid glucose as a culture medium to obtain fermentation liquor containing ethanol; and 4) distilling to obtain fuel ethanol. Experiments prove that the sugar alcohol conversion rate of the saccharomyces cerevisiae is high and reaches 90 % or above of a theoretical value, the concentration of ethanol in fermentation liquor can reach 60 g/L, and the saccharomyces cerevisiae basically has actual industrialization potential. According to the method, the waste residues generated in furfural production are fully utilized, the steps are simple, raw materials are fully utilized, and economic and environment-friendly double benefits are achieved.
WO2025199424A1	Dioxide Materials Inc (US)	**Devices, systems and methods for converting CO2 produced by municipal solid waste into fuels and useful products.** A modular, self-contained system for on-site alcohol production at municipal waste facilities integrates CO2 electrolysis and product separation within a single deployable unit. In some embodiments, the system can utilize a three-compartment CO2 electrolyzer, which in some instance demonstrates high alcohol production rates and reduced CO2 crossover. In some embodiments, the plug-and-play nature of the system can allow for simplified installation and operation at diverse waste management sites. In certain implementations, the integrated design can enhance overall efficiency by combining multiple process steps into a unified system.
CN120230657A	Qilu Univ of Technology Shandong Academy of Sciences (CN)	**Saccharomyces cerevisiae industrial strain and application thereof in preparation of fuel ethanol.** The invention belongs to the technical field of biology, and particularly relates to a saccharomyces cerevisiae industrial strain and application of the saccharomyces cerevisiae industrial strain to preparation of fuel ethanol. The strain is named as Saccharomyces cerevisiae HXL3, and is preserved in the General Microbiological Center of China Committee for Culture Collection of Microorganisms on March 15, 2024, and the preservation number is CGMCC (China General Microbiological Culture Collection Center) No. 30031. When the strain is fermented in high-toxicity corn straw hydrolysate for 48 hours, the utilization rate of xylose and the yield of ethanol are respectively increased by 69.94 % and 11.75 %.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025156645A1	Qingdao Inst Bioenergy & Bioprocess Tech CAS (CN)	**Chemical catalyst–microbial carbon sequestration system for improving utilization efficiency of H2 and use thereof.** The present invention belongs to the field of biochemical engineering, and relates to a chemical catalyst–microbial carbon sequestration system for improving the utilization efficiency of H2 and the use thereof. By culturing a chemical catalyst having H2 activation performance and acetogens in a culture medium containing H2 and CO2, the utilization efficiency of H2 and CO2 can be significantly improved, and the concentrations of ethanol and acetic acid are significantly increased, thereby reducing the acid-alcohol ratio; moreover, the biomass is also significantly improved. The provided hydrogenase-mimicking chemical catalyst and acetogens carbon sequestration system significantly improves the utilization efficiency of H2 and the carbon sequestration efficiency, increases the content of ethanol and thus increases the added value of the product, and is of great significance to the industrial implementation of biological fixation of CO2 using H2 as an energy source.
CN120230804A	Sdic Biotech Invest Co Ltd et al. (CN)	**Preparation method of fuel ethanol.** The invention relates to the field of fuel preparation, and discloses a preparation method of fuel ethanol. The preparation method comprises the following steps: pretreating a cellulose raw material, and then carrying out acid gas explosion, enzymolysis, fermentation and rectification; the pretreatment method comprises the following steps: sequentially carrying out winnowing, primary crushing, roller washing, secondary crushing and water washing on a cellulose raw material. By means of the method, valve blockage and pipeline abrasion can be effectively reduced, the operation continuity of the device is guaranteed, the use amount of acid is reduced, and the operating rate is increased. In addition, the yield of cellulose and hemicellulose after gas explosion is improved, and the dosage of an enzyme preparation is reduced.
WO2025155675A2	Shell USA Inc et al. (US)	**A process for preparing a product.** The present invention provides a process for producing an alcohol product stream from a gas fermentation process. A feed gas stream comprising hydrogen and a carbon oxide is subjected to fermentation to convert at least a portion of the feed gas stream to an alcohol. A major portion of the alcohol from the reactor is removed in a first gaseous product stream. A gas/liquid mixture is separated to obtain a second gas product stream and an alcohol-enriched liquid stream. The second gas product stream is recycled to the reactor.
CN120285602A	Univ China Petroleum East China (CN)	**Equipment and method for concentrating bioethanol through absorption condensation thermal coupling rectification.** The invention provides equipment and a method for concentrating bioethanol through absorption condensation thermal coupling rectification, and belongs to the technical field of chemical engineering, the equipment comprises a vacuum rectification tower (T101), an absorption condensation tower (T102), a regeneration tank (V101), a reboiler (R101) and the like. The vacuum rectifying tower (T101) and the absorption condensing tower (T102) are subjected to a thermal coupling technology, an expensive refrigerant is not used for condensing ethanol-water vapor (3) at the top of the vacuum rectifying tower (T101), the ethanol-water vapor (3) at the top of the tower enters the absorption condensing tower (T102) and then is absorbed by a circulating absorbent (9), and heat needs to be removed in the absorption process to ensure the absorption effect. The removed heat can be further used for supplying heat to the vacuum rectifying tower (T101), so that the external heat source input of the vacuum rectifying tower (T101) is reduced or even completely replaced. Compared with a traditional vacuum rectification mode, the use amount of public engineering is reduced, and the operation cost is reduced by more than 30 %.

Nº Publicación	Solicitante (País)	Contenido técnico
CN120393559A	Univ Guangdong Technology (CN)	**Sustainable biofuel separation and purification method based on CO2 capture and salt cyclic regeneration.** The invention discloses a sustainable biofuel separation and purification method based on CO2 capture and salt cyclic regeneration, which comprises the following steps: 1) treating a fermentation broth, placing the fermentation broth in a headspace bottle, adding salt, sealing, fully shaking, and standing until a salting-out phase is balanced; 2) collecting the water phase in the headspace bottle in the step 1), placing the water phase in a double-port reaction bottle, introducing the fermentation waste gas into the water phase solution in the double-port reaction bottle for reaction until a reaction endpoint is reached, recovering the reacted salt, and reusing the salt after post-treatment; according to the technical scheme provided by the invention, potassium carbonate (K2CO3) is used as a bifunctional agent, and efficient separation and resource circulation of the biological butanol fermentation liquor are realized through a salt precipitation separation-carbon capture-salt regeneration closed-loop method; the method comprises the following steps: reacting CO2 generated by fermentation of biological butanol with a K2CO3 enriched water phase after salting-out separation to generate potassium bicarbonate (KHCO3), and recovering K2CO3 through simple thermal decomposition to form a closed-loop salt cycle; according to the method, the n-butyl alcohol recovery rate gt can be realized under optimized conditions; the method has the advantages that the reaction efficiency and the CO2 absorption and utilization rate are balanced, the CO2 utilization rate can be up to 88%, the salt recovery rate is 84%, and the consumption of chemicals is reduced by more than or equal to 80%; according to the method, salt recovery and carbon emission reduction are integrated, and an economical, efficient and environment-friendly circular economy model is provided for separation and purification of biofuel.
US2025230461A1	Univ Henan Agricultural (CN)	**Mutant gene of ZMNST2 and method for improving efficiency of bioethanol production through fermentation of maize straw.** A mutant gene of ZmNST2 and a method for improving the efficiency of bioethanol production through fermentation of maize straw are provided. According to the disclosure, the mutant gene of ZmNST2 is obtained by molecular genetic methods and the effects of ZmNST2 mutation on lignin content, fermentation inhibitor content, ethanol yield, and hydrolysis rates of cellulase in maize are determined.
CN120247655A	Univ North China Water Resources & Electric Power et al. (CN)	**Method for preparing green methanol by pressure gasification of multi-carbon-based raw material.** The invention belongs to the technical field of energy and chemical industry, and particularly relates to a method for preparing green methanol by pressure gasification of a multi-carbon-based raw material. According to the method, multi-element carbon-based raw materials such as biomass and urban solid waste are utilized, the energy conversion efficiency of the multi-element carbon-based raw materials is improved through the pressurized gasification technology, the multi-element carbon-based raw materials are converted into green methanol, meanwhile, waste gas is effectively treated, and cyclic utilization of energy is achieved. The method has the innovation points that different methanol preparation routes can be selected according to regional resource characteristics, so that maximum utilization of resources and effective cost control are realized; the links of microalgae culture, CO2 capture and reutilization and the like are integrated, and the separated CO2 is converted into high value-added chemicals or biomass fuel, so that a flexible green methanol production system is formed, and waste resource utilization is realized. Compared with a traditional coal-to-methanol technology, the method has the advantages that pollutant emission can be effectively reduced, the equipment maintenance cost is reduced, clean and green methanol is generated, and economic benefits and ecological benefits are both achieved.

Biodiesel

Nº Publicación	Solicitante (País)	Contenido técnico
CN120272232A	China Petroleum & Chem Corp et al. (CN)	**Method for producing biodiesel fraction from grease raw materials.** The invention relates to a method for producing a biodiesel fraction from a grease raw material, which comprises the following steps of: contacting the grease raw material with a hydrotreating catalyst I and/or a hydrotreating catalyst II in a hydrotreating reaction zone to react, separating the hydrotreating reaction effluent, feeding the obtained liquid hydrocarbon into a hydroisomerization reaction zone to contact with a hydroisomerization catalyst to react, and separating an effluent of the hydroisomerization reaction to obtain a biodiesel fraction. According to different raw materials, the technical scheme of the hydrotreating reaction zone is flexibly adjusted, and the high-quality biodiesel fraction can be prepared with high yield.

Nº Publicación	Solicitante (País)	Contenido técnico
CN223127477U	Guangzhou Leo King Enviro Tech Co Ltd (CN)	**System for producing biodiesel from animal and vegetable oil.** The utility model discloses a system for producing biodiesel from animal and vegetable oil, which belongs to the technical field of biodiesel production and comprises a storage tank and a filter device. The filtering device comprises a filtering box, the output end of the output pipe extends into the filtering box, a switching rod is rotationally connected to the filtering box, symmetrical barrels are connected to the switching rod, supporting rings are arranged in the barrels, impurities in the mixture of glycerin and water are removed through the filtering adsorption part, and when many impurities are accumulated on the filtering adsorption part, the filtering adsorption part can be used for filtering the impurities in the mixture of glycerin and water. The switching rod rotates to enable the taking and placing opening and the filtering and adsorbing part below the baffle to be switched, the baffle makes contact with the sliding sleeve and the barrel, splashing is prevented, meanwhile, the filtering and adsorbing part is limited, the situation that the filtering and adsorbing part floats due to too much mixed liquid of glycerin and water is prevented, the filtering and adsorbing part rotating to the lower side of the taking and placing opening relieves limiting, and taking out is convenient; and the replacement efficiency is improved.
CN120305984A	Nanjing University of Technology (CN)	**Molasses-based catalyst, preparation method thereof and application of molasses-based catalyst in synthesis of biodiesel.** The invention discloses a molasses-based biomass sulfonated carbon catalyst preparation method, which comprises: grinding and mixing solid molasses and sodium hydroxide, calcining at 500-650 DEG C in an inert atmosphere to obtain activated carbon, and carrying out a sulfonation reaction on the activated carbon and concentrated sulfuric acid to obtain the catalyst. According to the method, by-product molasses in the sugar industry is taken as a raw material, a carbon source is rich in source, low in price and easy to obtain, the process is simple, the catalyst has relatively high specific surface area and conversion rate, the by-product can be utilized in a high-valued manner, and the method has certain industrial practical value.
CN120393988A	Qilu Univ of Technology Shandong Academy of Sciences (CN)	**Calcium-based solid catalyst as well as preparation method and application thereof.** The invention belongs to the field of catalyst preparation, and particularly relates to a calcium-based solid catalyst and a preparation method and application thereof. According to the preparation method, natural ore attapulgite is subjected to acid treatment, and calcium oxide is loaded by utilizing a high-quality pore structure and an excellent adsorption effect of the attapulgite, so that the cheap and efficient calcium-based solid catalyst is obtained and is used for catalyzing transesterification to prepare biodiesel. The calcium-based solid catalyst synthesized by the method disclosed by the invention has the advantages of abundant pores, stable structure, capability of being repeatedly used, mild reaction conditions, low cost, no corrosion to equipment and high biodiesel yield, and is expected to realize high value-added utilization of the attapulgite in biodiesel development.
CN223159219U	Shanghai Zhongqi Environment Tech Co Ltd (CN)	**Biodiesel preparation catalyst fixing device.** The utility model relates to a biodiesel preparation catalyst fixing device, and belongs to the field of biodiesel preparation. The biodiesel preparation catalyst fixing device comprises a bearing part which is provided with a containing cavity and an outlet channel and is used for containing a catalyst; the top sealing part is provided with a plurality of groups of inlet channels, is mounted on the bearing part and is used for sealing the accommodating cavity; wherein the inlet channels are evenly distributed on the top sealing piece, and the outlet channels and the inlet channels are arranged in a staggered mode. According to the fixing device for the biodiesel preparation catalyst, the inlet of the containing cavity is arranged to be a plurality of groups of uniformly dispersed inlet channels, on one hand, reaction materials are more uniformly distributed in the containing cavity, and on the other hand, parameters such as flow and concentration of the reaction materials in each group of inlet channels can be independently controlled, so that fine adjustment of reaction conditions is realized; the inlet channel and the outlet channel are arranged in a staggered manner, so that convection and diffusion of reactants in the containing cavity can be promoted, and the reaction efficiency is improved.

Nº Publicación	Solicitante (País)	Contenido técnico
MY209505A	Univ Malaysia Teknologi (MY)	**A catalyst, method for producing a catalyst and method of transesterification.** The present invention relates generally to a catalyst, method for producing a catalyst and method of transesterification. The method for producing the catalyst is characterised by the steps of rinsing a plurality of eggshells with water to remove dust and impurities, drying the plurality of eggshells, crushing the eggshells into powder, calcining the powder in order to obtain a calcium oxide powder and modifying the calcium oxide powder with a transition metal oxide using incipient wetness impregnation method to obtain the catalyst. Furthermore, the method for transesterification of plant-based oil is characterized by the steps of refluxing a mixture comprises plant-based oil, alcohol and a catalyst, wherein the catalyst comprises a calcium oxide and a transition metal oxide, distilling the mixture, cooling and centrifuging the mixture; and obtaining two layers which consists of the biodiesel at the top layer and the catalyst with glycerol at the bottom layer.
CN120399763A	Univ Southeast (CN)	**Biodiesel and preparation method thereof.** The invention discloses biodiesel and a preparation method thereof, and belongs to the technical field of petrochemical engineering. The preparation method comprises the following steps: carrying out aldol condensation reaction on a biomass platform aldehyde compound and a carbonyl compound containing carboxyl or ester group to obtain a carboxyl-containing long-carbon-chain oxygen-containing compound; converting the carboxyl-containing long-carbon-chain oxygen-containing compound into long-carbon-chain fatty acid through a selective hydrodeoxygenation reaction; the method comprises the following steps: carrying out esterification reaction on long-carbon-chain fatty acid and methanol to generate long-carbon-chain fatty acid methyl ester; according to the method, low-cost biomass can be effectively converted into high-value biodiesel, dependence on animal and vegetable oil and algae oil in the traditional biodiesel production process is reduced, efficient utilization of biomass resources is achieved, and the production cost of the biodiesel is reduced.
CN223055153U	Xiamen Zhuoyue Biomass Energy Co Ltd (CN)	**Methyl esterification crude ester continuous sedimentation automatic purification device in biodiesel production.** The utility model discloses a continuous settling and automatic purifying device for methyl esterification crude ester in biodiesel production. A settling tank is provided with four stages, and manholes, blow-down pipes and feeding pipes are arranged at the tops of an acid glycerol receiving tank and each settling tank; a feeding pipe of the lower-stage sedimentation tank is connected with a discharging opening in the upper part of the upper-stage tank, a partition plate is arranged in each sedimentation tank, a tank cone material emptying pipe with a valve is arranged on one side of the bottom of each sedimentation tank, a tuning fork densimeter is arranged at the bottom of each sedimentation tank, and a continuous discharging pipe with a valve of the fourth-stage sedimentation tank is converged with a discharging pipe of each stage of sedimentation tank, passes through a crude ester conveying pump and then is connected to a continuous ester exchange process; an acid glycerol discharge pipe with an interlocking pneumatic valve is arranged at the cone bottom of each settling tank and is connected to an acid glycerol receiving tank after being converged, and the discharge pipe of the tank is connected to an acid glycerol storage tank after being connected with an acid glycerol delivery pump; the fourth-stage settling tank and the acid glycerol receiving tank are provided with liquid level meters with magnetic turning plates; and the precipitation tanks are arranged in a step-by-step descending manner so as to ensure that materials in the previous-stage tank automatically flow to the next stage. The crude ester and impurity separation device is good in crude ester and impurity separation effect, simple and efficient to operate and safe and reliable to run.
CN120272230A	Zhangjiajie Jinzhao New Energy Tech Co Ltd (CN)	**Preparation method for refining biodiesel from animal waste.** The invention relates to a preparation method for refining biodiesel from animal waste, and belongs to the technical field of biodiesel. The preparation method comprises the following steps: (1) carrying out anaerobic heating and drying on raw materials, crushing the dried raw materials into powder, mixing the powder with a fermentation product, spreading the mixture, and carrying out aerobic fermentation to obtain a pretreated raw material; (2) heating and sterilizing the pretreated raw materials, pressing the pretreated raw materials into square blocks, gasifying the square blocks in a gasification furnace, cooling mixed gas through a pipeline, and separating fatty acid and tar from condensed liquid by using a nanofiltration membrane; (3) introducing the uncondensed gas into a Fischer-Tropsch synthesis tower after passing through a purifying agent, and synthesizing biodiesel under the action of a catalyst; and (4) carrying out catalytic hydrogenation on fatty acid, adding into an esterification reaction kettle, adding methanol and amino acid ionic liquid, stirring, heating, cooling, separating condensate by using a separating funnel, taking supernatant liquid, washing by using hot water, heating to remove moisture to obtain biodiesel, and combining the biodiesel with the biodiesel in the step (3).

Nº Publicación	Solicitante (País)	Contenido técnico
CN120272319A	Zhoushan Inst for Food and Drug Control (CN)	**Method for promoting microalgae carbon sequestration and oil production by using plant hormones and salt-containing wastewater.** The present invention belongs to the technical field of microalgae cultivation and discloses a method for promoting microalgae carbon fixation and oil production by utilizing plant hormones and saline wastewater. The method comprises cultivating microalgae in a wastewater culture medium to which sodium chloride and plant hormones are added. The plant hormones include at least abscisic acid, which can effectively alleviate salt stress and promote the accumulation and growth of microalgae oil. Plant hormones also include one of auxin and gibberellin. When abscisic acid works synergistically with auxin or gibberellin, it is more helpful to increase the oil yield of microalgae. In addition, sodium chloride, abscisic acid, 4-amino-2-methylthiopyrimidine-5-carboxamide and 4-methyl-5-thiazoleethanol can be added to the wastewater to synergistically enhance the biomass production and oil accumulation of microalgae. The present invention provides an effective way to reduce the cost of microalgae cultivation and realize the industrialized production of microalgae biodiesel, and has both environmental and energy benefits.

Bio-jet fuels

Nº Publicación	Solicitante (País)	Contenido técnico
CN120272233A	China Petroleum & Chem Corp et al. (CN)	**Method for producing jet fuel from grease raw materials.** The invention relates to a method for producing jet fuel from a grease raw material, which comprises the following steps of: contacting the grease raw material with a hydrotreating catalyst in a hydrotreating reaction zone to react, feeding obtained liquid hydrocarbon into a first hydroisomerization reaction zone, and setting an optional second hydroisomerization reaction zone, the obtained diesel fraction is circulated back to the first hydroisomerization reaction zone or enters the second hydroisomerization reaction zone for reaction, and the jet fuel is obtained after reaction effluent is separated. The high-quality bio-jet fuel can be prepared with high yield.
CN120271405A	Dalian Inst Chem & Physics CAS (CN)	**Method for synthesizing alkane in gasoline or aviation kerosene range by biomass platform compound in one step.** The invention relates to a method for one-step synthesis of alkane in the range of gasoline or aviation kerosene from a biomass platform compound. Biomass ketone and a mixture of the biomass ketone and biomass alcohol or biomass aldehyde, or the biomass alcohol is used as a raw material, and the biomass ketone and the biomass alcohol are subjected to cascade aldol condensation/hydrodeoxygenation (or cascade dehydrogenation/aldol condensation/hydrodeoxygenation) reaction in a fixed bed continuous reactor under the action of a supported metal multifunctional catalyst, so that the biomass ketone is obtained. And polycycloalkane or branched-chain alkane which can be used as gasoline or aviation kerosene can be synthesized in one step. The method is high in process operability, simple in route, low in cost, low in energy consumption and easy in catalyst preparation, and a brand-new effective way is provided for direct synthesis of gasoline or aviation kerosene from biomass platform compounds.
FI20245047A1	Neste Oyj (FI)	**An integrated method for producing sustainable aviation fuel.** A process for producing sustainable aviation fuel (SAF) or components thereto is described, wherein the integrated process comprises in the first arm providing a renewable feedstock comprising triglycerides (10), hydrolyzing the triglycerides into free fatty acids (20) which are subjected to a decarboxylation and/or decarbonylation (DCO) reactions to produce hydrocarbon intermediate A (40). As second arm of the integrated process, any carbon oxides (50, 55, 60) and glycerol (30) released in the first arm are refined into further hydrocarbons, hydrocarbon intermediate B (80), which together with hydrocarbon intermediate A (40) are isomerized and a sustainable aviation fuel or components thereto (90) are provided. The process increases carbon efficiency and yield in sustainable aviation fuel production.

Nº Publicación	Solicitante (País)	Contenido técnico
CN120394099A	Shanghai Xiangwei New Energy Tech Co Ltd (CN)	**Molecular sieve catalyst for preparing green aviation kerosene through hydrogenation of biomass oil as well as preparation method and application of molecular sieve catalyst.** The invention relates to the technical field of biomass oil hydrogenation catalysts, and particularly discloses a molecular sieve catalyst for preparing green aviation kerosene through biomass oil hydrogenation as well as a preparation method and application of the molecular sieve catalyst. The molecular sieve catalyst comprises the following components: an organic phosphorus repaired ZSM-5 molecular sieve; the loading capacity of the noble metal component Ag is 1-2wt %; the loading capacity of the non-noble metal auxiliary agent Sn is 6-10 wt %; and the loading capacity of the non-noble metal auxiliary agent Cr is 5-8 wt %. The loading capacity is the mass ratio of each element to the ZSM-5 molecular sieve raw material which is not repaired by the organic phosphorus. The catalyst takes silver as an active center, and compared with a scheme adopting platinum and palladium as active centers, the catalyst has the advantage that the material cost is remarkably reduced. Wherein the organic phosphorus is bonded with framework aluminum of the ZSM-5 molecular sieve, so that the hydrothermal stability and the carbon deposition resistance of the molecular sieve are remarkably improved. The ZSM-5 molecular sieve provides an acid center and provides H < + > to protonate oxygen-containing groups in the biomass oil, and Sn and Cr are matched with Ag to promote hydrogen to be dissociated into hydrogen atoms, so that the hydrogenation effect on the biomass oil is jointly completed.
WO2025144693A1	Shell USA Inc et al. (US)	**Process for producing fuel from petroleum derived and renewable sources.** A process for producing fuel from a renewable feedstock and a petroleum-derived oil involves hydrotreating the renewable feedstock and thereafter combining the hydrotreated renewable oil and the petroleum-derived oil. A combined liquid is reacted in a hydroisomerization zone to produce an isomerized effluent.
WO2025157448A1	Siemens Energy Global GmbH & Co KG (DE)	**Method and assembly for fractionating olefins for the production of sustainable jet fuel.** The invention relates to a method for fractionating olefins for the production of sustainable jet fuel, having the following steps: providing (S10) a reactant stream (4) comprising olefins, in particular unfractionated olefins, said reactant stream (4) being provided in particular by means of a methanol-to-olefin process or a methanol-to-propylene process; separating (S20) the reactant stream (4) into a gas stream (6) and a liquid stream (8) by means of a separator (2); feeding (S30) the liquid stream (8) into a liquid rectification column in the form of a dehexanizer (10); and separating (S40) hydrocarbons having a carbon chain length of six or less by means of the dehexanizer (10) in order to obtain an olefin product stream (18). No further steps for separating or fractionating the liquid stream (8) are carried out between the step of separating (S20) the reactant stream (4) into a gas stream (6) and a liquid stream (8) and the step of feeding (S30) the liquid stream (8) into the dehexanizer (10). The invention also relates to a corresponding system (1).
CN120248927A	Univ China Petroleum East China (CN)	**Method for preparing cycloalkane aviation fuel through deep hydro-conversion of enzymatic hydrolysis lignin.** The invention relates to the technical field of lignin conversion, and discloses a method for preparing cycloalkane aviation fuel by deep hydro-conversion of enzymatic hydrolysis lignin, which comprises the following steps: mixing enzymatic hydrolysis lignin, water, hydrogen and a catalyst, and adding the mixture into a suspended bed hydrogenation reactor for hydrogenation; circulating recycle hydrogen and solid-containing tailings which are separated by a gas-liquid-solid separator from an effluent after hydrogenation to the suspended bed hydrogenation reactor; separating a water phase product and lignin oil from the liquid mixed product through a liquid-liquid separator; a water-phase product is discharged out of the device, and lignin oil enters a fixed bed hydrogenation reactor for hydrodeoxygenation; the gas-liquid mixed product enters a gas-liquid separator to obtain recycle hydrogen and an oil-water mixed product; circulating the circulating hydrogen to the fixed bed hydrogenation reactor, treating an oil-water mixed product by a liquid-liquid separator to obtain the cycloalkane aviation fuel and water, and then circulating the water into the suspended bed hydrogenation reactor. According to the method, the enzymatic hydrolysis lignin can be deeply hydro-converted into the high-quality sustainable aviation fuel, and high-added-value utilization of biomass resources is achieved.

Nº Publicación	Solicitante (País)	Contenido técnico
CN120376664A	Univ Guangdong Technology (CN)	**Graphite felt/high-entropy MOF electrode, lignin-based fuel cell and method for co-production of aviation fuel components.** The invention discloses a graphite felt/high-entropy MOF electrode, a lignin-based fuel cell and a method for co-producing aviation fuel components. The graphite felt/high-entropy MOF electrode is obtained by dissolving various soluble metal salts and 2, 5-dihydroxy terephthalic acid in a solvent for hydrothermal reaction and generating high-entropy MOF on the surface of the graphite felt in situ. When the graphite felt/high-entropy MOF electrode is used for assembling the lignin-based liquid flow fuel cell, high-power density output of the lignin-based liquid flow fuel cell and efficient conversion from biomass energy to electric energy are successfully realized. After long-time power generation of the flow battery, lignin macromolecules can be promoted to be efficiently and directionally depolymerized into an aircraft fuel precursor to generate C8-C16 micromolecular substances, the main micromolecular substances are C10-C11, the micromolecular substances can be further subjected to hydrodeoxygenation to prepare aircraft fuel, and the flow battery has very great commercial prospects and utilization values.
CN120399735A	Univ Science & Technology China (CN)	**Preparation method of aviation kerosene.** The invention provides a preparation method of aviation kerosene, which comprises the following steps: a) sequentially carrying out V-MOF/H2O2 pretreatment, enzyme hydrolysis and fermentation on corncob biomass to obtain fermentation liquor rich in ethanol intermediates; and b) carrying out one-pot catalytic conversion on the fermentation liquor rich in the ethanol intermediate obtained in the step a) under the action of a Ce-SAPO34/Ni-HBET composite catalyst to obtain the aviation kerosene. Compared with the prior art, the method for preparing the aviation kerosene from the corncob biomass, provided by the invention, has the advantages that the aim of directionally synthesizing the biological aviation kerosene from the corncob biomass is achieved by coupling the processes of biological fermentation and catalytic conversion, the efficiency of high-value utilization of biomass resources is improved, and good economic and environmental benefits are achieved.
US2025215326A1	UOP LLC (US)	**Process for producing jet fuel from lignin.** A process of producing jet fuel is disclosed. The process comprises separating lignin from a lignocellulosic biomass to provide a lignin stream. The lignin stream is pyrolyzed and/or hydrotreated to produce an aromatic rich bio-oil stream. The aromatics in the aromatic rich bio-oil stream are alkylated with an alkylating agent to produce an alkylated aromatic product stream. The alkylating agent can be taken from the lignocellulosic biomass. The process produces a green jet fuel.

Biohidrógeno

Nº Publicación	Solicitante (País)	Contenido técnico
CN120242906A	Beijing Gas and Heating Engineering Design Inst (CN)	**Multi-source coupling hydrogen production method and system.** The invention relates to a multi-source coupling hydrogen production method and system, and the method comprises the following steps: carrying out crushing and drying treatment on a biomass material to obtain biomass particles and a biomass mixed gas; activating the biomass particles for a first set time to obtain a biomass charcoal adsorbent and a biomass mixed solution; activating the biomass charcoal adsorbent for a second set time period and activating the biomass charcoal adsorbent for a third set time period to obtain a biomass charcoal catalyst; carrying out thermal cracking treatment on the biomass mixed solution to obtain hydrogen mixed gas; mixing the biomass mixed gas into biogas to obtain biogas mixed gas, and carrying out desulfurization treatment on the biogas mixed gas; carrying out gasification reforming reaction on the hydrogen mixed gas and the biogas mixed gas to obtain comprehensive mixed gas, and carrying out pressure reduction and temperature reduction treatment; the comprehensive mixed gas is subjected to adsorption treatment to obtain high-purity hydrogen, and the method has the advantages of being simple in process, high in hydrogen production efficiency and environmentally friendly; the system has the advantages of being simple in structure, convenient to control, stable and reliable.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025158463A1	Council Scient Ind Res (IN)	**An upflow anaerobic granular bed microbial electrochemical reactor [UAGB-MER] for production of bio-H2 from liquid waste/wastewater.** In the present invention, an integrated bio-electrochemical reactor system (BEC) has been developed for the production of bio-hydrogen from wastewater (domestic/municipal wastewater) and simultaneous treatment of wastewater respectively. The developed BEC system intrinsically couples the upflow anaerobic granular bed (UAGB) with microbial-electrochemical reactor (MER) together into an advance bio-reactor which employs biocatalyst to convert chemical energy stored in organics to electrical energy. Hence, the developed novel UAGB-MER technology aims towards the enhancement of the metabolic activity of electrochemically active biocatalyst by supplying organic/inorganic nutrients, electron acceptors, or donors, thus stimulating oxidation or reduction of contaminants for simultaneous remediation of water and clean bio-Hydrogen (green H2) production. The present invention also relates to a process for treatment of organic enriched wastewater to significantly reduce high concentrations of BOD and COD from effluent stream.
WO2025181819A1	Council Scient Ind Res (IN)	**Microbial-bio-electrochemical reactor (M-BEC) for enhanced bio- H2 production. The present invention relates to a Microbial-bio-electrochemical reactor (M-BEC) for enhanced bio-H2 production.** More particularly, the present invention relates to a reactor for the removal of biodegradable contaminants from wastewater using biological processes. The developed system is intrinsically coupled the dark fermentation with microbial-electrochemical process together into a next generation bio-reactor which employs biocatalyst to convert chemical energy stored in organics to hydrogen energy. The coupled M-BEC technology has developed to aimed towards the enhancement of the metabolic activity of electrochemically active biocatalyst by supplying organic/inorganic nutrients, electron acceptors, or donors, which felicitate the electro-hydrogenesis in a membrane less single cell reactor for bio- Hydrogen (green H2) production. The present invention also relates to a process for treatment of contaminated water which contains a large amount of biodegradable suspended solids and high concentrations of BOD and COD and enables bio-hydrogen generation with simultaneous removal of biodegradable TSS from wastewater.
CN120248939A	Huaneng Zhangye Energy Co Ltd et al. (CN)	**Photovoltaic-driven biomass gasification hydrogen production system and hydrogen production method.** The invention provides a photovoltaic-driven biomass gasification hydrogen production system and a hydrogen production method. The system comprises a photovoltaic unit, an air water catching device, a crop planting unit and a biomass gasification hydrogen production unit. The photovoltaic unit comprises a photovoltaic assembly and a heat exchange device. The photovoltaic unit can provide electric energy and heat energy. The air water capturing device captures water from the air by using electric energy provided by the photovoltaic unit; the crop planting unit is used for irrigating crops with water provided by the air water catching device; the biomass gasification hydrogen production unit comprises a pyrolysis device, a gasification hydrogen production reaction device and a gas separation device; the pyrolysis device takes heat energy provided by the photovoltaic unit as a heat source to perform pyrolysis reaction on crops to obtain a pyrolysis product; the gasification hydrogen production reaction device is used for sequentially carrying out incomplete combustion reaction and catalytic conversion reaction on the pyrolysis product to obtain synthesis gas; the gas separation device is used for separating the synthesis gas to obtain hydrogen. By adopting the system for hydrogen production, the resource utilization rate can be increased, and the production cost is reduced.
CN120399751A	Nantong Polytechnic College (CN)	**Biomass hydrogen production method and two-section type regenerated adsorbent hydrogen production device.** The invention discloses a biomass hydrogen production method, which comprises: S1, carrying out a gasification reaction on a biomass raw material and water vapor in a gasification reactor to generate a mixed gas; s2, the mixed gas obtained in the step S1 reacts with water vapor and an adsorbent in an adsorption enhancement reactor to generate carbonate, and hydrogen-rich gas is collected; s3, the carbonate obtained through the reaction in the step S2 reacts with water vapor in a regeneration adsorbent reactor, and a product obtained through the reaction enters the adsorption enhancement reactor to be used as an adsorbent. According to the hydrogen production method, the gasification reactor and the adsorption enhancement reactor are arranged, and an exothermic reaction is carried out in the adsorption enhancement reactor, so that the effect of producing hydrogen at a relatively low temperature can be realized.

Nº Publicación	Solicitante (País)	Contenido técnico
US12410450B1	Tran Quyen Dinh (VN)	**Method for producing hydrogen gas from sweet sorghum.** A method for producing hydrogen gas (H2) from sweet sorghum (Sorghum bicolor (L.) Moench) comprising: (i) preparing materials; (ii) creating a first temporary mixture; (iii) creating a second temporary mixture; (iv) creating a third temporary mixture; (v) creating a first base mixture; (vi) fermenting the first base mixture under dark conditions to produce a first hydrogen gas and a dark fermented base mixture; (vii) creating a second base mixture; (viii) fermenting the second base mixture under light conditions to produce a second hydrogen gas; and (ix) purifying the first hydrogen gas and the second hydrogen gas to obtain a hydrogen gas purity of over 99 %.
CN120243103A	Univ Beijing Chem Tech (CN)	**Bioethanol reforming hydrogen production catalyst as well as preparation method and application thereof.** The invention discloses a bioethanol reforming hydrogen production catalyst and a preparation method and application thereof.The preparation method comprises the following steps that after h-BN powder is subjected to ball milling for 2-4 h in a planetary ball mill at the rotating speed of 400-600 rpm, a solution is added for ultrasonic treatment, and a precursor h-BNNS rich in defects is obtained; the method comprises the following steps: mixing a precursor h-BNNS rich in defects and a solution containing an active metal M salt, carrying out ball milling in a planetary ball mill at a rotating speed of 600-800rpm for 10-16h, and collecting a sample after the ball milling is finished; the sample is dried for 6-12 h at the temperature of 40-100 DEG C; and carrying out calcination treatment on the dried sample at 400-700 DEG C in an H2 atmosphere to obtain the catalyst. The prepared catalyst has the advantages of being small in metal loading amount, high in dispersity and resistant to carbon deposition, high hydrogen production efficiency can be achieved at the low temperature, and a more effective solution is provided for hydrogen production through bioethanol reforming.
WO2025180456A1	Univ Hong Kong Baptist Univ (CN)	**Hydrogen production from biomass waste at low temperature.** The conversion of biomass waste into hydrogen gas holds significant promise for sustainable energy production. The present invention provides a low-temperature catalytic process, utilizing MgO and Pd/C-N catalysts, to efficiently transform biomass waste into high-purity hydrogen. The innovative approach reduces energy costs, eliminates solid residues, and supports a circular economy. The technology demonstrates versatility across different biomass waste types and offers a scalable solution for clean hydrogen production.
CN120310585A	Univ Jiangxi Sci & Technology (CN)	**Biomass supercritical water gasification hydrogen production and fuel cell hydrogen-electricity coupling system and method.** The invention discloses a biomass supercritical water gasification hydrogen production and fuel cell hydrogen-electricity coupling system which comprises a supercritical water gasification reactor, a material conveying system, a preheating and heat regeneration system, a gas-liquid separation system, a combustion gas combustion system, a hydrogen purification system and a hydrogen fuel cell system. The material conveying system comprises a storage tank, a high-pressure slurry conveying device, a first high-pressure plunger pump and a water tank; the preheating and heat regeneration system comprises a heat regenerator, a preheater and a second high-pressure plunger pump; the gas-liquid separation system comprises a back pressure valve and a gas-liquid separator; the fuel gas combustion system comprises a combustion gas combustion device and a combustion gas storage tank; the hydrogen purification system comprises a hydrogen purification device, a combustion gas storage tank and a hydrogen storage tank. The supercritical water gasification reaction system and the hydrogen fuel cell power generation system are coupled, hydrogen is directly generated and efficiently converted into electric energy, the advantages of being environmentally friendly and clean are achieved, and efficient utilization of biomass resources is achieved.
WO2025147215A1	Univ Nanyang Tech (CN)	**Bipolar green hydrogen production from electroreforming of biomass derivatives using silver-based electrocatalyst.** The present disclosure relates to a bipolar hydrogen production system and a method for producing hydrogen gas from the bipolar hydrogen production system. The system comprises a silver-based anodic catalyst deposited on an anode electrode, a cathode electrode, and an alkaline electrolyte containing an organic compound with aldehyde functional group extracted from lignocellulosic biomass waste or an aldehyde-containing chemical compound extracted from chemical waste.

Otros biocombustibles (renewable diesel, bio-oils, etc.)		
Nº Publicación	Solicitante (País)	Contenido técnico
WO2025180867A1	BASF SE (DE)	**Method for suppressing catalyst poisoning by bio-oils in contact with steel containments.** The present invention concerns bio-oils, mixtures, and blends of bio-oils comprising at least one catalyst poisoning suppressant, wherein the catalyst poisoning suppressant is selected from amphiphilic compounds, the amphiphilic compounds comprising at least one nonpolar residue selected from C6 to C26 alkyl and/or alkylene and at least one polar residue, the at least one polar residue comprising at least one nitrogen atom. The invention further concerns a method for suppressing catalyst poisoning and/or fouling during thermal processes and the use of catalyst poisoning suppressants selected from amphiphilic compounds, the amphiphilic compounds comprising at least one nonpolar residue selected from C6 to C26 alkyl and/or alkylene and at least one polar residue, the at least one polar residue comprising at least one nitrogen or oxygen atom. The poisoning of heterogeneous catalysts and/or fouling during thermal processes used in the purification, upgrading, and/or conversion of bio-oils and mixtures/blends of such bio-oils is reduced in the presence of at least one catalyst poisoning suppressant.
CN120290220A	Blue Whale Biological Energy Zhejiang Co Ltd (CN)	**System for producing biological fuel oil by hydrogenation of industrial mixed oil and fat.** The invention relates to the field of new energy, in particular to a system for producing biofuel oil by hydrogenation of industrial mixed grease, which comprises a hydrofining system and an isodewaxing system, the hydrofining system comprises a hydrofining reaction device, a hydrofining separation device, a hydrofining fractionation device and a hydrofining low-pressure gas dry gas desulfurization device; the isomerization pour point depressing system comprises an isomerization pour point depressing reaction device, an isomerization pour point depressing separation device and an isomerization pour point depressing fractionation device. According to the method, the abundant resource of the waste animal and vegetable oil can be fully utilized, large-scale production of clean and environment-friendly biological fuel oil is realized, the continuously increasing market demand is met, meanwhile, the economic benefit is remarkably improved, and the sustainable development of the biological fuel oil industry is promoted.
CN120361830A	Chengdu Ruixun Tech Co Ltd (CN)	**System and method for producing fuel oil from biomass through methanol.** The invention belongs to the technical field of fuel oil production systems, and particularly relates to a system and a method for producing fuel oil from biomass through methanol. Biomass pyrolysis or gasification is adopted for power generation, obtained green electricity is used for electrolyzing water to prepare green hydrogen and green oxygen, green hydrogen and carbon monoxide and carbon dioxide obtained after biomass pyrolysis or gasification are synthesized into green methanol, and green oxygen can assist in biomass power generation; the synthesized methanol is further used for synthesizing propylene, and then propylene oligomerization is continued to obtain a long-carbon-chain hydrocarbon product; by-product water generated in the process of preparing methanol through carbon dioxide hydrogenation and preparing propylene through methanol passes through a water treatment system and is used as a raw material to return to the electrolyzed water unit, carbon dioxide generated in each process is used as a raw material to return to the unit of preparing methanol through carbon dioxide hydrogenation, and excessive carbon dioxide can obtain carbon monoxide through water gas reverse transformation; carbon monoxide can be used as a raw material for preparing methanol through hydrogenation, and can also be used as heat energy or used for power generation, so that a full-green process fuel oil fuel product synthesis technology is realized. Methanol preparation through carbon dioxide hydrogenation, propylene preparation through methanol and propylene oligomerization are all exothermic reactions, and reaction waste heat can be used for power generation. In the whole system, waste heat recovery and byproduct separation, collection and reutilization are adopted, and energy conservation and cost reduction are achieved.
US2025229255A1	Chevron USA Inc (US)	**Catalyst selection for improved lipid feedstock conversion.** A reactor system includes a reactor that treats a lipid feedstock using a metal oxide catalyst to produce a treated stream comprising a bio-oil. The metal oxide catalyst includes catalyst particles having a diameter of 0.01 to 0.5 mm. The metal oxide catalyst can comprise calcium on alumina. The bio-oil has an increased proportion of transportation fuels relative to other techniques for processing lipid feedstocks.

Nº Publicación	Solicitante (País)	Contenido técnico
US2025269356A1	Exxonmobil Technology & Engineering Company (US)	**Amorphous catalysts for hydrocracking of Fischer-Tropsch wax.** Catalysts and corresponding methods are provided for conversion of Fischer-Tropsch wax to distillate boiling range products. The catalyst for performing the conversion can correspond to a noble metal catalyst supported on an amorphous silica-alumina support. The amorphous silica-alumina support can have a beneficial combination of surface area, pore volume, and acidity that provides for unexpectedly beneficial activity for conversion of Fischer-Tropsch wax. This can allow a target level of conversion during hydrocracking to be achieved at a reduced or minimized temperature and/or reaction severity. The unexpected properties for the amorphous silica-alumina support can be achieved in part by forming the support using an extrusion process where the extrusion mixture includes silica-alumina, nitric acid as a peptizing agent, and methylcellulose as an extrusion aid. The methylcellulose is then removed from the support via calcination, which contributes in part to the properties of the resulting support.
US2025290000A1	Honda Motor Co Ltd (JP)	**Fuel production method and fuel production system.** A fuel production method from a biomass raw material includes: a synthesis gas production step of causing a biomass raw material, hydrogen, water, and carbon dioxide to react and producing a synthesis gas that includes hydrogen and carbon monoxide; and a Fischer-Tropsch synthesis step of separating a FT offgas that includes hydrogen after a Fischer-Tropsch synthesis reaction of the synthesis gas is performed to thereby produce a Fischer-Tropsch oil, wherein the hydrogen supplied to the synthesis gas production step includes the hydrogen in the FT offgas.
US2025250493A1	Honeywell Int Inc (US)	**Methods, apparatuses, and systems for conversion of bio-alcohols to renewable diesel.** Methods, apparatuses, and systems for the conversion of bioalcohol to renewable diesel fuel are disclosed. In an example embodiment, a method includes providing a first bio-alcohol feed stream comprising a first bio-alcohol to a first dehydration reactor and providing a second bio-alcohol feed stream comprising a second bio-alcohol to a second dehydration reactor; dehydrating, in parallel, at least a portion of the first bio-alcohol feed stream to a first alkene process stream in the first dehydration reactor and at least a portion of the second bio-alcohol feed stream to a second alkene process stream in the second dehydration reactor; providing the first alkene process stream to an oligomerization reactor and oligomerizing at least a portion of the first alkene process stream to produce a first olefin process stream; providing the second alkene process stream from the second dehydration reactor to a dimerization reactor and dimerizing at least a portion of the second alkene process stream to produce a second olefin process stream; providing the first and second olefin process streams to a distillation apparatus and separating, via distillation, lighter olefins from longer carbon chain olefins; and hydrogenating at least a portion of the longer carbon chain olefins.
CN120230595A	Straw Holding Group Co Ltd (CN)	**Process for producing biomass fuel oil by utilizing biological fibers.** The invention belongs to the technical field of sustainable biological fuel oil production, and particularly relates to a process for producing biomass fuel oil by using biological fibers. The method comprises the following steps: S1, pretreating a bio-fiber raw material; s2, carrying out synergistic catalytic conversion and deoxidation on biochemical conversion to obtain crude biological fuel oil; and S3, carrying out nano modification and product refining to obtain the biomass fuel oil. According to the method, a segmented hydrolysis-separation technology is adopted, a physical open chain-chemical bond breaking synergistic mode is formed through high-temperature liquid water self-ionization and maleic acid hydrolysis of cellulose to generate glucose, S/Cl pollution is reduced, Ni/Al2O3-SiO2 hydrogenation and HZSM-5 molecular sieve shape-selective catalysis are coupled, and an oxygen-containing body is converted into saturated alkane; a sodium lignin sulfonate amphiphilic structure constructs a carbon tube-hydrocarbon chain stable dispersion system, a nano core-hydrocarbon shell structure is formed by combining a high-pressure homogeneous cavitation effect, and biofuel oxygen-containing polar molecules and a nano material synergistically improve the combustion rate and the energy release uniformity.

Nº Publicación	Solicitante (País)	Contenido técnico
CN120290229A	Univ Sichuan (CN)	**Method for preparing hydrocarbon biofuel oil through low-temperature normal-pressure branched deoxidation of waste oil methyl ester.** The invention discloses a method for preparing hydrocarbon biofuel through low-temperature normal-pressure branched deoxidation of waste oil methyl ester. According to the method, a Claisen condensation reaction (50-70 DEG C and normal pressure) with relatively mild conditions is utilized, and an extra ester group is introduced into the alpha position of waste oil methyl ester, so that ester-increasing branching is realized; and activating hydrogen atoms of the organic silicon by using tris (pentafluorophenyl) borane, and selectively deoxidizing and reducing ester groups in the oil material under the conditions of room temperature and normal pressure to generate the hydrocarbon biofuel oil containing alpha-branched chains. Compared with the prior art, the method has the advantages that the biological fuel oil product with the condensation point of-5 DEG C to-8 DEG C and the calorific value of 42.0 MJ/kg to 42.5 MJ/kg can be obtained without high-temperature and high-pressure reaction conditions, and the method has application prospects in the fields of energy and chemical industry.
CN120230582A	Univ Southeast (CN)	**Method for producing liquid fuel by co-liquefaction of lignin and polyethylene.** The invention discloses a method for producing liquid fuel by co-liquefaction of lignin and polyethylene, which belongs to the field of waste resource recycling, and utilizes a two-phase solvent system to efficiently catalyze and convert a mixture of lignin and polyethylene into liquid fuel. The method comprises the following steps: placing a mixed solvent, lignin, polyethylene and a catalyst in a reactor together, flushing and sealing with nitrogen, reacting for a preset time at a certain temperature, and separating gas, liquid and solid three-phase products after the reaction is finished, so as to obtain a liquid product with the highest content of 59.5%. The two-phase solvent is used, the lignin and the polyethylene are efficiently converted into the liquid fuel under the mild condition, and a new method is provided for high-value synergistic utilization of the lignin and the polyethylene.

PATENTES BIOPRODUCTOS

Biomateriales (de construcción, medicina, embalaje, etc.)
Biocomposites y biofibras

Nº Publicación	Solicitante (País)	Contenido técnico
EP4616025A1	Arda Biomaterials Ltd (GB)	**A bio-based leather substitute material**
WO2025193096A1	Beyond Wood Cooeperatie UA (NL)	**Plant fibre product.** The invention relates in general to working or preserving a plant-fibre material, such as a wood-like material, and processing said material, such as in a plastic state in general, and may likewise be considered to be a technology of managing solid or solid-like waste materials, the waste materials comprising plant-fibre material. The present invention further relates to a structural product comprising the plant-fibre material, an insulation material, to a laminate product and a method of producing the laminate product.
WO2025159714A1	Kocaeli ueniversitesi (TR)	**Fully biodegradable sustainable biocomposite material and production method with improved performance properties for use in automotive industry.** The invention relates to poly(3-hydroxybutyrate-co-3-hydroxyvalerate) (PHBV)/ poly(butylene succinate) (PBS) - hemp fiber biocomposites with improved performance properties by using biodegradable polymer blends reinforced with natural fibers, which are lighter than synthetic fibers such as glass fiber, in the presence of epoxy POSS molecules for use in the production of battery packs, especially in electric vehicles, and production method.
WO2025181430A1	Metsae Spring OY (FI)	**A method and a moulded multi-layered fibrous product.** According to an example aspect of the present invention, there is provided a method comprising: providing a first fibrous composition and a second fibrous composition, each comprising independently from each other cellulosic fibres and water; adding, in any order, fibrillated fibres and a foaming agent to at least one of the fibrous compositions, wherein the fibrillated fibres are added in the form of an aqueous suspension with a consistency of at least 2%; foaming said at least one of the first and the second fibrous compositions; in a mould, forming and dewatering the first and the second fibrous compositions to obtain a first fibrous layer and a second fibrous layer, respectively, in a stacked configuration; and hot pressing the formed and dewatered stack comprising the first fibrous layer and the second fibrous layer, to obtain a moulded multi-layered fibrous product.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025158764A1	Mitsubishi Gas Chemical Co (JP)	**Fiber-reinforced composite material, molded article, and production method for fiber-reinforced composite material.** Provided is a fiber-reinforced composite material using natural fibers. Specifically provided is a fiber-reinforced composite material containing a thermoplastic resin having a melting point of 180-220 °C and natural fibers, wherein the natural fibers are impregnated with at least a portion of the thermoplastic resin, and the natural fibers are oriented in at least one direction.
WO2025163188A1	One Five GmbH (DE)	**A heat-sealable flexible packaging material, a method of making such and a use thereof.** A heat-sealable flexible packaging material and a method of making such, the method comprising: compounding a lignin and a plasticiser to form a plasticised lignin, and applying a layer of the plasticised lignin to a surface of a flexible substrate to form a heat seal layer thereon, by extruding the plasticised lignin or from an aqueous dispersion of the plasticised lignin. Also disclosed is a method comprising: compounding a lignin and a plasticiser to form a plasticised lignin, and applying a layer of the plasticised lignin to a surface of a flexible substrate to form a heat seal layer thereon, by a hot melt method; and a heat-sealable flexible packaging material produced by the same.
EP4596634A1	Ren Fuel k2b Ipco AB (SE)	**Lignin composite material.** The present invention relates to a resin material obtainable by curing a mixture of lignin, di- or polyepoxide at elevated temperature. Reinforcing agent may be added to prepare composite.
WO2025171199A1	Solenis Technologies Cayman LP et al. (CH)	**Barrier compositions and method of use.** Provided is a barrier composition that includes an aqueous dispersion of one or more functional agents, and one or more nanocelluloses. Also provided is a method of improving retention, reactivity, and/or distribution of functional agents disposed on a substrate. The substrate having a substrate surface and comprising a fiber having a fiber surface in which the barrier composition is applied to or disposed on the substrate.
WO2025163246A1	Teknologian Tutkimuskeskus Vtt Oy (FI)	**Mouldable thermoplastic composite and method of producing the composite.** The current invention relates to a foam- formed composite comprising a thermoplastic material in an amount of 30 wt.% of the total composite, long reinforcing fiber and ligneous fiber capable of forming hydrogen bonds. The thermoplastic material can be in the form of bicomponent fibers or in powder form. In addition, the invention relates to a method for manufacturing a foam-formed composite and a material comprising a foam-formed composite.
WO2025186409A1	Trinseo Europe GmbH (CH)	**Fireproof composite as fire activating heat insulating layer for battery enclosure or fire proof layer in battery pack.** Disclosed are thermoplastic composites or Organosheets comprising polymeric compositions embedded within fiber materials having premium fire retardancy and fire insulating properties. The polymeric compositions may contain one or more thermoplastic polymers. The polymeric compositions may contain recycled or virgin polycarbonate content. Disclosed are methods of preparing such Organosheets. Disclosed are structures prepared from the disclosed Organosheets.

Bioplásticos

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025179387A1	Bosk Bioproduits Inc (CA)	**Production of polyhydroxyalkanoates using a free fatty acids containing substrate and a nutrient-containing co-substrate in presence of microorganisms.** Processes for producing PHA using PHA-producing microorganisms are provided. The process can include using a culture medium comprising a substrate mixture that comprises an FFA-containing substrate and a nutrient-containing substrate. The FFA-containing substrate has a carbon content accounting for between about 50 wt % to 100 wt % of a total carbon content of the substrate mixture. The FFA-containing substrate can have a weight ratio of unsaturated fat to saturated fat between 3 and 10, and/or a viscosity of between 40 and 60 CP. The process can include monitoring in real time at least one fermentation parameter comprising at least one of an optical density parameter, a suspended solids parameter or a PHA concentration parameter, using measured fluorescent spectrum data being correlated to the at least one fermentation parameter.
WO2025190969A1	Carbiolice (FR)	**Enzyme-containing methanisable article.** The present invention relates to a methanisable article, the composition of which comprises a mixture of: PLA (polylactic acid) at a content of less than or equal to 60 % by weight; at least one polyhydroxyalkanoate; at least 0.001% by weight of enzymes capable of degrading PLA; and at least one mineral filler at a content of between 10 % and 25 % by weight, the percentages being given by weight relative to the total weight of the composition of the article.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025153697A1	Centexbel (BE)	**Polyhydroxyalkanoate plastisol compositions.** A plastisol composition including a polyhydroxyalkanoate and a plasticizer. This plastisol composition is suitable for forming coatings and pressure-sensitive adhesives, with specific ratios of plasticizer to polyhydroxyalkanoate tailored for each application.
WO2025186762A1	Eggplant Soc A Responsabilita Limitata (IT)	**Polyhydroxyalkanoate polymeric product.** The present invention relates to a method for the preparation of a polymeric product comprising a first polyhydroxyalkanoate polymer and at least a second polymer, said method comprising: a) a step of forming a mixture comprising a first poly 3-hydroxybutyrate (PHB) polymer, at least a second polymer and at least one oxidising agent and a plasticizer, and b) a step of heating said mixture to a temperature between 200 and 230 °C, to form said polymeric product.
WO2025158110A1	Fortum Waste Solutions OY (FI)	**A method for producing polyhydroxyalkanoates.** According to an example aspect of the present invention, there is provided A method for producing polyhydroxyalkanoates. The method comprises the steps of: converting carbon dioxide to one or more organic compound(s), contacting at least part of the one or more organic compound(s) with a microbial monoculture and a fermentation medium to form a fermentation mixture, and producing at least one polyhydroxyalkanoate from the fermentation mixture.
WO2025174718A1	Groupe Solmax Inc (CA) et al.	**Compostable nonwoven with polyhydroxyalkanoate continuous filaments.** According to one or more embodiments, a compostable fabric includes a nonwoven fabric that includes continuous filaments with a polymeric composition that is fully biodegradable and includes about 51 weight percent to about 100 weight percent of a polyhydroxyalkanoate. The compostable fabric is biodegradable and demonstrates about 90 % to about 100 % conversion of organic carbon to carbon dioxide (CO2) after 180 days as measured by ASTMD 5338 test method.
WO2025196014A1	Nestle SA (CH)	**Compostable top lid structure for a beverage preparation capsule.** The invention relates to a capsule (100) for preparing a beverage in a beverage production machine, the capsule (100) comprising a capsule body (200) delimiting a chamber (250) for containing a beverage substance (500), an injection wall (220) closing the chamber at a first end and a delivery wall (300) closing the chamber (250) at a second end of the capsule body (200). The delivery wall (300) comprises in a layered manner a carrier layer (320) for carrying the subsequent layers, an optional filter layer (310) and a barrier layer (340) applied on the carrier layer (320), the barrier layer (310) providing a preferably bidirectional barrier against moisture and/or gas, the barrier layer (340), at least one protective layer (350) applied on the side of the barrier layer facing the chamber (250) for protecting the barrier layer at least against moisture, and a connecting layer (330), on the side of the delivery wall (300) facing the chamber (300) for connection of the delivery wall (300) to the rim portion (211). The connecting layer (330) is made of biodegradable material and comprise at least a non-woven aliphatic or aliphatic aromatic polyester selected in the list comprising Polylactic acid (PLA), Polyhydroxy alkanoate (PHA), Polybutylene succinate (PBS), Polybutylene succinate-co-adipate (PBSA), Polybutylene adipate-co-terephthalate (PBAT), Polybutylene sebacate-co-terephthalate (PBSeT), and their respective copolymers, and combination thereof. The invention also relates to a system comprising the proposed capsule and to a use of the proposed capsule for preparing a beverage in a beverage production machine.
WO2025158446A1	Rigel Bioenviron Solutions Private Ltd (IN)	**Extraction process of polyhydroxyalkanoates (PHA) from pha-rich mixed culture waste activated sludge (WAS) in a continuous mode reactor system using low cost acid recovery method.** The present invention discloses a novel engineered continuous mode extraction process of Poly hydroxy alkanoates (PHA) from PHA-rich mixed culture waste activated sludge (WAS) in a Continuous Mode Reactor system (Figure 1). The said dewatered PHA rich sludge (101) is first subjected to acid treatment in acid mixing tank (102) at 5 % w/v ratio enabling proper mixing with 3.5 % (v/v) diluted Sulphuric Acid (H2SO4) solution. Acid digestion is conducted in the oil bath (107) at a specific temperature within the range of 80 °C to 90 °C, maintaining the hydraulic retention time HRT in the acid digester for 6 hours. Then at (120) alkali mixing tank (0.5) N NaOH solution was used to elevate a specific pH within the range of 9.5 - 10.5. After water wash, the extract is treated at hypocloride treatment tank (129). The spent acid is transferred for recycling to acid mixing tank (102) and the spent alkali (127) is transferred for recycling to the alkali mixing tank (120) for further reuse. This process reduces the usage of acid and alkali, thereby, making it cost effective and eco-friendly.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025172497A1	Totalenergies Corbion BV (NL)	**Process for recycling PLA.** The invention relates to a process for recycling polylactic acid (PLA) into lactic acid, comprising the steps of: a) hydrolysing a PLA waste thereby obtaining a crude lactic acid composition; b) diluting the crude lactic acid composition in water, thereby producing a diluted crude lactic acid composition; c) equilibrating the diluted crude lactic acid composition for a equilibration period te at a equilibration temperature of at least Te, thereby producing an equilibrated crude lactic acid composition; d) concentrating the equilibrated crude lactic acid composition, thereby producing a concentrated crude lactic acid composition; e) optionally, distilling the concentrated crude lactic acid composition thereby producing a distilled lactic acid composition; and f) crystallizing the concentrated crude lactic acid composition obtained in step d), or the distilled lactic acid composition obtained in step e), thereby recovering lactic acid. The invention also relates to lactic acid obtained when carrying out the process of the invention and their use in the preparation of lactide and/or polylactide.
WO2025151696A1	Univ Michigan State et al. (US)	**Polylactic acid (PLA) with improved barrier properties, related articles, and related methods.** The disclosure relates to biodegradable and/or compostable polyester single- or multilayer films having improved barrier properties, in particular moisture or water barrier properties. In some cases, the films can be formed from stereocomplex polylactic acid (sc- PLA), which has favorable water barrier properties, can be conveniently formed via cast-film extrusion, and is biodegradable and compostable. In some cases, the films can be multilayer films including an sc-PLA or polyhydroxyalkanoate (PHA) layer to provide water barrier properties, a hydrophilic polymer/filler layer to provide oxygen barrier properties, and biodegradable polyester layer to sealing or other mechanical properties. The films can be used to package a variety of articles to improve their storage life, in particular for articles that are sensitive to water and/or oxygen, for example including food items, while still providing environmentally friendly end-of-life disposal options via composting.

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

Biofertilizantes, bioadhesivos, etc.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025181550A1	Arkema France (FR)	**Bio-based adhesive for laminate.** The present disclosure provides an adhesive composition. In an embodiment, the adhesive composition includes a reaction product of (A) a bio-based isocyanate component having from 30 wt % to 80 wt % bio-based content comprising (i) an isocyanate-terminated compound, and (ii) an optional first bio-based polyol. The adhesive composition also includes (B) a bio-based polyol component comprising (i) a second bio-based polyol, and (ii) optionally an adhesion promoter. The adhesive composition has greater than 60 wt% of bio-based content.
WO2025177000A1	Biochar Innovations Ltd (GB)	**Fertiliser granules.** This invention relates to a fertiliser granule comprising a pozzolanic material and a biochar. Suitably, the pozzolanic material is poultry litter ash. The present invention also relates to methods of making the fertiliser granules, and methods of promoting plant growth.
WO2025151395A1	Cargill Inc (US)	**Bio-based binder systems and dedust compositions.** A method for dedusting a fibrous insulation product using a fatty acid ring-opened epoxidized and fatty acid esterified epoxidized vegetable oil (such as epoxidized soybean oil or epoxidized corn oil) having an iodine value less than 50 cg I2 per gram and optionally an oxidation exotherm by pressure differential scanning calorimeter of less than 1000 joules/gram at an oven temperature of 130 °C and an oxygen inlet pressure of 500 PSIG. The fibrous insulation product typically is made with a binder composition that is applied to mineral fibers in addition to the epoxidized vegetable oil prior to the binder composition being cured.
WO2025193874A1	Marvel Labs Inc (US)	**Systems and methods for developing and using bioadhesives.** Provided herein are systems and methods for producing and using bioadhesives. The bioadhesives may be produced in an Escherichia Coli (E. Coli) system. The bioadhesives may be used in a variety of different applications, such as industrial or medical applications. The bioadhesives may be used as a binder in Three-Dimensional (3D) printing.
WO2025147196A1	Moeniralam Soraya (NL)	**Organic fertilizer and soil amendment comprising eggshell biochar.** The present invention according to a first aspect relates to a fertilizer and/or soil improver composition comprising eggshell biochar, preferably in combination with an acid source, such as an organic acid source. Further aspects of the invention are aimed at a method of producing the composition and the use of the composition for plant growth stimulation.

Nº Publicación	Solicitante (País)	Contenido técnico
EP4592372A1	Sika Tech AG (CH)	**Use of natural rubber latex in water-based floor covering adhesives with high shear stiffness.** The invention relates to an aqueous dispersion adhesive, in particular a dispersion floor covering adhesive, which comprises a polyacrylate dispersion and a natural rubber latex.The dispersion adhesive is particularly suitable for bonding elastic floor coverings to substrates.The dispersion adhesive shows high shear stiffness and has a reduced CO2 footprint.
WO2025195334A1	The Land Environment Tech Holding Group Co (CN)	**Treatment method for biomass organic waste and water-soluble organic fertilizer obtained therefrom.** The present application relates to the field of treatment of biomass organic waste for efficient resource recovery, and in particular to a treatment method for biomass organic waste and a water-soluble organic fertilizer obtained therefrom. The treatment method for biomass organic waste includes crushing the biomass organic waste, adding a catalyst made from various metal compounds, heating the mixture to 140 °C to 160 °C, and applying a pressure of 0.8 MPa to 1.4 MPa, followed by a catalytic hydrolysis reaction for 30 min to 60 min to obtain small molecule organic compounds; and adding mineral elements into the obtained small molecule organic compounds, and obtaining a water-soluble organic fertilizer through ultrasonic chelation. The method can efficiently, safely, and cost-effectively process biomass organic waste, and can also produce a water-soluble organic fertilizer that is beneficial for plant growth.
WO2025163076A1	Univ Claude Bernard Lyon et al. (FR)	**Biofertilizers based on natural polymers.** The present disclosure relates to a composition, in particular a biofertilizer or a probiotic, comprising a polymer matrix based on chitosan and anionic polysaccharides, in particular carrageenan, and microorganisms, and the method for preparing same.
WO2025166209A1	Univ Texas (US)	**Bioadhesive hydrogels and devices and systems thereof.** Embodiments of the present disclosure provide a hydrogel and devices that can be worn long-term, for example, on the scalp or other suitable target site, independently for extended periods without degradation in therapeutic efficacy efficacy. In some aspects, for example, the hydrogel is formed from a first monomer comprising one or more ion-forming moieties. In some implementations, the hydrogel is further formed from a polyol. In some aspects, the hydrogel is further formed from water. In some aspects, the first monomer and water have a ratio by weight from about 1:1 to about 1:4.
WO2025184355A1	Veos Pharmaceuticals SL (ES)	**Olive tree biomass extract.** Formulations of plant biostimulants, including hydroxytyrosol or its analogs, which may be derived from olive tree extracts, for agricultural use are described. Methods of increasing the germination rate of crop seeds are also described. Methods of making and using plant biostimulants are also described.

Biocosméticos, Biofarmaceúticos

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025176847A1	AGS Therapeutics SAS (FR)	**Ocular delivery of active agents via microalgae extracellular vesicles.** Provided are compositions containing microalgae extracellular vesicles (MEVs) formulated for administration to the eye for treatment of diseases, disorders, and conditions of the eye, particularly for diseases, disorders, and conditions that involve tissues and cells in the back of the eye, which generally cannot be treated with eyedrops. Upon administration to the eye, the MEVs deliver therapeutics to tissues that include the choroid, retinal pigment epithelium cells, and photoreceptor cells. The compositions contain extracellular vesicles from microalgae (MEVs) that are loaded with bioactive cargo for treating or diagnosing or monitoring a disease, disorder, or condition of the eye or involving the eye. Methods of treatment of diseases, disorders, and conditions of the eye are provided.
ES3033982A1	Bioiberica SAU (ES)	**Combined preparation for use in enhancing immunity.** Combined preparation for use in enhancing immunity. The present invention relates to pharmaceutical and food compositions comprising nucleobases and/or sources of nucleobases and a mixture of brown algae, preferably marine brown algae. Preferably, the compositions include Nucleoforce and Algaemix. Such compositions are useful in the treatment and/or prevention of a bacterial infection; as well as in enhancing immune function.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025181741A1	Boidessence Officina Ingredients (FR)	**Cosmetic composition containing a pterocarpus soyauxii wood extract and the use thereof for depigmenting or whitening the skin.** The invention relates to a cosmetic and/or dermatological composition comprising a Pterocarpus soyauxii wood extract, as a depigmenting or skin-whitening agent. The wood extract is present in the composition at a content ranging from 0.05 to 10% by weight relative to the total weight of the composition, and comprises a high proportion of ellagitannins and/or gallotannins. The extract is in particular a hydroglycerinated extract obtained by extraction in a mixture of water and glycerin, preferably assisted by ultrasound. The invention also relates to a composition containing the wood extract, to a non-therapeutic method for depigmenting or whitening the skin, and to a non-therapeutic use.
WO2025162904A1	Cabeco (FR)	**Coffee butter, method of preparation and uses thereof.** The present invention provides a method for processing spent coffee grounds using supercritical fluid extraction. This method provides a solid lipidic extract, which presents wound healing, antibacterial and skin moisturizing properties, and a delipidated coffee powder that can be micronized into a very fine powder making it suitable for use as pigments in cosmetics, inks or paints.
WO2025149552A1	Fabre Pierre Dermo Cosmetique (FR)	**Mattifying cosmetic composition.** The invention relates to a mattifying cosmetic composition in the form of an oil-in-water emulsion which is suitable for topical application to the skin and which is devoid of silica. This composition comprises, in water, a Lens esculenta seed extract, a starch, at least one oily emollient and at least one emulsifier. It is particularly suitable for the care and/or hygiene of greasy and/or acne-prone skin, and/or, when it is provided with at least one sunscreen, for protecting the skin against the sun.
WO2025183178A1	Kao Corp (JP)	**Plant-derived extract composition.** Provided, according to one embodiment, is a plant-derived extract composition capable of increasing the expression of transglutaminase (TGM-1) and loricrin (LOR). The present disclosure relates to, according to one embodiment, a plant-derived extract composition that comprises rosmarinic acid and has a mass ratio of betulinic acid and rosmarinic acid (betulinic acid/rosmarinic acid) of 0.25 or less.
WO2025144295A1	Marmara Univ (TR) et al.	**Toothpaste with green coffee bean husk additives.** The invention relates to a toothpaste with green coffee beans. The green coffee bean husk called silver skin, which emerges during/after the roasting of the green coffee bean, does not damage the filling material in the filled teeth, the toothpaste does not cause color change in the tooth and contributes to the better mechanical cleaning of the tooth.
WO2025145005A1	Momentive Performance Mat Inc (US)	**Natural derived film former for cosmetic applications.** The present disclosure provides a natural compound derived from Dammar gum that when formulated into a composition for personal care, delivers color transfer resistance, even when exposed to oil, water, and/or food. The present disclosure also provides methods of making the compound derived from Dammar gum and compositions comprising the compound derived from Dammar gum. The compound derived from Dammar gum can be combined with components typically used in personal care to provide personal care formulations.
WO2025155204A1	Norvivo AS (NO)	**Formulation of natural oils for hair growth promotion and hair loss decrease.** The present invention relates to a hair oil composition comprising natural oils only, wherein the natural oils are selected from the group comprising seed oils, fruit oils, nut oils, and plant leaf oils, the composition comprising: a mixture of Kakadu plum oil, pumpkin seed oil, avocado fruit oil, caiaue oil, and rosemary oil, and at least one natural anti-androgen. Furthermore, the invention relates to use of said composition and to a method for treating hair loss diseases.
WO2025195865A1	Soc d´exploitation de Produits pour les Industries Chimiques SEPPIC (FR)	**Nail varnish comprising a lipid extract of gametophytes of the brown alga undaria pinnatifida; use thereof in cosmetics and pharmaceuticals.** A composition in the form of a nail varnish, consisting of: a nail varnish base and a lipid extract of the gametophytes of the brown alga Undaria pinnatifida in a mass proportion of between 0.1 % by mass and 2 % by mass of said nail varnish base, wherein the component solvent for said lipid extract is a mixture of fatty acid triglycerides, the acyl chains of which comprise from eight to ten carbon atoms; use thereof in cosmetics and pharmaceuticals.

Bioaditivos alimentarios y nutracéuticos		
Nº Publicación	Solicitante (País)	Contenido técnico
WO2025178736A1	Access Business Group Int LLC (US)	**Compositions comprising carotenoids and/or bilberry for protecting the eyes of a mammalian subject from or reducing or treating damage due to exposure to blue light..** Described herein are methods and compositions that comprise an amount of at least one active agent, such as at least one carotenoid and an ingredient or extract of bilberry, preferably an amount of at least one of: lutein, zeaxanthin, ß-carotene, lycopene, and an ingredient or extract of bilberry; and an additive.
WO2025153960A1	Black Rock Vanguard Group Inc (KN)	**Sweetener composition.** Sweetener compositions which contain erythritol, one or more high intensity sweeteners, one or more of prebiotics, one or more probiotic strains of bacteria, and, optionally, one or more postbiotics, are provided. The sweetener compositions find use in the manufacture of foods and beverages.
WO2025193480A1	Corn Products Dev Inc (US)	**Compositions comprising long branch chain waxy starch and a second gelling agent.** The technology disclosed in this specification is directed to compositions, which may be edible compositions, or confectionary compositions. The compositions comprise a gelling component comprising a long branch chain waxy starch, and a second gelling agent in defined ratio and a defined moisture content. The compositions have differentiated texture compared to compositions comprising only a single gelling agent and to composition comprising gelling agent mixed with a common waxy corn starch.
WO2025176866A1	Flora Food Global Principal BV (NL)	**Edible oil-in-water emulsion stable in cold acidic conditions.** The current invention relates to an edible oil-in-water emulsion comprising a fat phase, protein and gums, wherein the gums comprise both xanthan gum and one or more galactomannan gum. The edible-oil-in water emulsion may be used as a dairy or non-dairy multipurpose cooking cream and/or whipping cream. The emulsion may be as an additive used in foodstuffs, particularly in cold acidic foodstuffs.
WO2025155414A1	Frito Lay North America Inc (US)	**Three dimensional snack product.** A snack product includes a starch base, vegetable substrate(s) other than potato and corn, whole grain ingredient(s), and optional additives. The snack product provides about 10 % or more vegetables and from about 15 % to about 45 % whole grains and has a bulk density between about 50 g/L to about 84 g/L. An exemplary method of making a snack product includes hydrating a dry mix containing a starch base, vegetable substrate(s) other than potato and corn, whole grain ingredient(s), and optional additives to form a dough containing from about 30% to about 40 % moisture. The dough may be extruded through a die slot to form a continuous sheet that may be cut to form individual snack sized pieces, which are then fried pieces to form the snack product.
WO2025172244A1	Herbstreith & Fox Gmbh & Co KG Pektin Fabriken (DE)	**Method for modifying functional plant fibers.** The invention relates to a method for producing a functional plant fiber with modified properties, in particular to the reactivation of an aged functional plant fiber. The invention further relates to the modified functional plant fiber obtained using said method and to the use thereof as a stabilizer, a thickener or a structuring agent in food products and in non-food products. The invention lastly relates to a food product, a food supplement, a feed product, a beverage, a cosmetic product, a pharmaceutical product or a medical product which has been produced using the modified functional plant fiber according to the invention.
WO2025154074A1	Nat Inst Biotechnology Negev Ltd (IL)	**Fibre-degrading probiotics and uses thereof.** Fibrolytic bacterial strains are disclosed which carry in their genomes the genes scciC and cttA.Probiotic compositions and cultures comprising same and uses thereof are also disclosed.
WO2025172680A1	Natural Science Group Ltd (GB)	**A method of preparing a gel suspension of an undenatured type ii collagen and/or a microbiome modulator and product of same.** A method (10) of forming a gel suspension of an active ingredient such as undenatured type II collagen and/or a microbiome modulator. The method (10) comprising the steps of combining a natural flavouring and/or preserve and water, and heating in a first heating stage. The method (10) further comprises adding a thickening agent, e.g. xanthan gum. The method (10) further comprises adding a hydrated pectin mixture, and heating in a second heating stage. The second temperature being higher than the first temperature, preferably not exceeding 85 degrees Celsius. The method (10) further comprises adding the active ingredient(s) and rapid cooling to form a suspension.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025172963A1	Sayeed Mohammed Rehan (IN)	**Nutritional formulation for muscle health.** The disclosed embodiment relates to a nutritional formulation for muscle health. The formulation comprises of active agents, protein blends, essential micronutrients, excipients and flavoring agents. Furthermore, the active agent comprises of calcium hydroxyl methyl butyrate (CaHMB), antioxidant blends, an anti-inflammatory agent, synbiotic blend and veg omega blend. The nutritional formulation activates the protein synthesis in muscles and decreases the rate of muscle breakdown, wherein the anti-oxidant and anti-inflammatory compounds help in reduction of oxidative stress and inflammation in muscles. The nutritional formulation targets muscle loss and wastage, muscle recuperation, and immune-boosting functions.
EP4585050A1	Zoe Ltd (GB)	**Food composition and uses thereof.** The present invention relates to a prebiotic food composition comprising or consisting of at least 15 of the following ingredients: flaxseed, chia seeds, sunflower seeds, pumpkin seeds, hemp seeds, red lentil flakes, grape seed, almonds, hazelnuts, walnuts, chicory root inulin fibre, puffed quinoa, white mushroom, thyme, onion, parsley, turmeric, cumin, Lion's Mane, Reishi, Chaga, Shiitake, Cordyceps, Maitake, Tremella, rosemary, garlic, red beetroot flakes, carrot flakes, nutritional yeast flakes, baobab powder, and buckthorn, as well as its uses.

Bioproductos alimenticios para animales

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025141960A1	Ajinomoto KK et al. (JP)	**Feed for ruminants obtained by combining methane emission inhibitor and lumen-protected amino acid.** The objective of the present invention is to provide, for example, a feed enabling effective suppression of methane emission by ruminants. The present invention relates to, for example, a feed for ruminants, which is obtained by combining a methane emission inhibitor and a lumen-protected amino acid.
WO2025145239A1	Commw Scient Ind Res Org (AU)	**Supplement and use thereof.** Disclosed is a feed supplement for an aquatic animal comprising a dried microbial biomass. More particularly, this disclosure relates to a composition for feeding an aquatic animal comprising a first particle comprising a feed product, and a second particle consisting essentially of a dried microbial biomass, or a feed supplement for an aquatic animal comprising a dried microbial biomass in an amount of greater than about 40% w/w and the use of such composition or supplement for feeding an aquatic animal, such as a crustacean. The disclosure further relates to the use of the feed supplement for increasing the growth rate, weight and food consumption of an aquatic animal.
WO2025177785A1	Fuji Oil Holdings Inc (JP)	**Animal food for cat.** Provided is a novel raw material to be given to cats, who are known to have kidneys, and so forth, having characteristics different from those of other mammals. The raw material takes the form of a animal food such as cat food and is configured to suppress the degradation of kidney function and to improve the coat condition of cats. A small dose of the raw material can suppress a decline in feline kidney function and improve coat condition, the raw material being a poorly soluble soybean protein material having a characteristic amino acid composition in which the mass ratio of glutamic acid (Glu) to leucine (Leu) is 2 or less and NSI is 10-60%. This raw material can also be obtained from an undecomposed residue found in a soybean peptide production process.
WO2025196070A1	HAI26 (FR)	**New CNSL-derived composition and use thereof for specific application in food or pharmaceuticals.** The invention relates to a new composition of an extract of hydrogenated cashew nut shell liquid (hydrogenated CNSL) or hydrogenated anacardic acid, and to the use of same for specific application in food, neutraceuticals or pharmaceuticals.
WO2025144685A1	Hills Pet Nutrition (US)	**Pet food compositions and methods of using the same.** Described herein is a pet food composition comprising at least one fermentable fiber; betaine; carnitine; tryptophan; at least one fruit, vegetable, or extract thereof comprising phytochemicals; and at least two omega-3 polyunsaturated fatty acids. Also disclosed herein are methods of treating or preventing anxiety and/or an inflammation or allergy in a companion animal by administering the pet food composition to the companion animal.
WO2025197957A1	Kaneka Corp et al (JP)	**Potato protein composition, and feed composition for aquatic animals which contains said potato protein composition.** The purpose of the present embodiment is to provide: a protein source having high feed ingestion properties and digestibility; and a feed composition for aquatic animals, which contains the protein source. Specifically, the present embodiment relates to a potato protein having a potato glycoalkaloid content of 300 ppm or less and a free amino acid content of 10,000-75,000 ppm.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2025188357A1	Nutriquest LLC (US)	**Method to improve growth performance, livability, carcass characteristics and/or milk quality in swine.** The present disclosure provides feed compositions comprising a basal animal diet supplemented with dimethylglycine. The feed compositions improve growth performance, livability, carcass characteristics, and milk quality in non-human animals fed the feed compositions.
EP4616721A1	Omni Pet Ltd (GB)	**Novel pet food composition.** The present invention relates to an aqueous pet food composition that comprises: (a) a vegetable protein selected from the group consisting of pea protein and soya protein, and mixtures thereof; (b) a flour or a starch selected from the group consisting of wheat flour, pea starch, potato starch, and corn starch, and mixtures thereof, and cultivated meat, and which is ideally meat-free other than the cultivated meat component. The aqueous pet food composition can be used to feed a companion animal, such as a cat.
WO2025143624A1	Samda Co Ltd (KR)	**Anguilla japonica feed composition using fermented pig blood product.** The present invention provides an Anguilla japonica feed composition using a fermented pig blood product, the composition having the effects of promoting the growth of Anguilla japonica, enhancing health, and enhancing feed efficiency. The composition of the present invention comprises a fermented product obtained by inoculating a Lactobacillus johnsonii strain into pig blood and culturing same.
WO2025182848A1	Toray Industries (JP)	**Livestock feed.** A composition including a cassava pulp and glucose, preferably a cassava pulp saccharification residue, is suitable as a highly preservable livestock feed in which an increase in endogenous bacteria is suppressed, preferably a livestock feed for ruminants such as cattle.

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VT BIOMASA PARA LA BIOECONOMÍA

PATENTES

Boletín elaborado con la colaboración de:

Agencia Estatal de Investigación
C/ Torrelaguna, 58
28071 Madrid

Bioplat
C/ Cedaceros, 11, 2º C
28014 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

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