

OBJETIVOS DE DESARROLLO SOSTENIBLE



BOLETÍN BIOENERGÍA Y BIOPRODUCTOS

Valorización de los residuos de la industria alimentaria

Según la Comisión Europea, más de 100 millones de toneladas de alimentos que se producen en Europa se desperdician anualmente. Este desperdicio ocurre a lo largo de toda la cadena alimentaria, desde el agricultor hasta el consumidor final, pero es en la primera fase, correspondiente a los productores y la industria alimentaria, donde se concentran pérdidas de entre el 30 % y el 40 %.

El impacto de este desperdicio va más allá del ámbito económico, afectando también al medioambiente y a la seguridad alimentaria. Frente a este desafío, la valorización de subproductos surge como una estrategia prometedora para avanzar hacia un futuro más sostenible, rentable e innovador en la industria alimentaria. Por ejemplo, los desechos derivados de la extracción del mosto del vino, de la malta de cebada para la cerveza o del procesamiento de la soja pueden tener una segunda vida alimentaria, como sustancias ricas en antioxidantes y protectoras de las células. Igualmente, el bagazo (lo que queda de las uvas tras extraer su jugo), el orujo y el alperujo (generado tras la fabricación del aceite de oliva) son considerados residuos orgánicos que, debido a sus propiedades, pueden seguir nutriéndonos, ya sea como ingredientes de otros alimentos procesados o como suplementos dietéticos. Otros residuos, como es el caso de la piel del tomate y las cáscaras de huevo, pueden ser utilizados como sustitutos del caucho. Asimismo, la piel de patata, el suero del queso y otros residuos de la industria alimentaria que normalmente terminan en vertederos podrían aprovecharse para producir biogás, electricidad o fertilizantes orgánicos.

Actualmente, en Europa, la valorización de este tipo de residuos es un área de creciente interés y desarrollo. Así, la Unión Europea apoya activamente la investigación y el desarrollo en la valorización de residuos alimentarios, a través de programas como Horizonte 2020 y Horizonte Europa. Estos programas financian proyectos que abordan la sostenibilidad y la economía circular, incluyendo la gestión de residuos alimentarios. En la Tabla 1 se recogen algunos de estos proyectos en curso y en los que participan entidades españolas.



Fuente. <https://www.refood.es/>

Tabla 1. Proyectos europeos en curso

Programa Horizonte 2020
UNLOCK: Unlocking a feather bioeconomy for keratin-based agricultural products (2021-2025)
<p>Nº participantes: 16</p> <ul style="list-style-type: none"> • Fundación CIDETEC (Coordinador) • Nuevas Tecnologías para el Desarrollo de Packaging y Productos Agroalimentarios con Componente Plástica • Inkoa Sistemas SL • AIMPLAS - Asociación de Investigación de Materiales Plásticos y Conexas • Associacio Comarcal Urgell D'ajuda al Minusvalid
EcoeFISHent: Demonstrable and replicable cluster implementing systemic solutions through multilevel circular value chains for eco-efficient valorization of fishing and fish industries side-streams (2021-2026)
<p>Nº participantes: 39</p> <ul style="list-style-type: none"> • Asociación Nacional de Fabricantes de Conservas de Pescados y Mariscos-Centro Técnico Nacional de Conservación de Productos de la Pesca • AIMPLAS - Asociación de Investigación de Materiales Plásticos y Conexas • Syspro Automation SL
REFFECT AFRICA: Renewable energies for Africa: Effective valorization of agri-food wastes (2021-2026)
<p>Nº participantes: 30</p> <ul style="list-style-type: none"> • Universidad de Jaén (Coordinador) • Associacio Nasco Foundation • Instituto Tecnológico de Canarias SA • Ficosterra SL • Universidad de Huelva
Programa Horizon Europe
BIOCTANE: Synergetic integration of BIOTEchnology and thermochemical CaTalysis for the cAscade coNvErSION of organic waste to jet-fuel (2022-2026)
<p>Nº participantes: 5</p> <ul style="list-style-type: none"> • Fundación IMDEA Energía • Universidad Rey Juan Carlos
DelSoil: Delivering Soil improvers through improved recycling and processing solutions for food industry residues streams (2023-2027)
<p>Nº participantes: 13</p> <ul style="list-style-type: none"> • Fundación Universitaria Balmes • Universidad de León
ELLIPSE: Efficient and novel waste streams co-processing to obtain bio-based solutions for packaging and agricultural sectors (2023-2027)
<p>Nº participantes: 14</p> <ul style="list-style-type: none"> • AIMPLAS - Asociación de Investigación de Materiales Plásticos y Conexas • Fundación CARTIF
MixMatters: Smart and flexible Separation and Valorisation of mixed bio-waste from along the agri-food value chain (2023-2027)
<p>Nº participantes: 17</p> <ul style="list-style-type: none"> • AINIA (Coordinador) • Bionet Servicios Técnicos SL • Asociación Cluster Food+I • Fundación Tecnalía Research & Innovation • Soluciones Industriales y Tratamientos Ambientales SL • Fundación de la Comunidad Valenciana para la promoción Estratégica, el Desarrollo y la Innovación Urbana • Federación Empresarial de Agroalimentación de la Comunidad Valenciana (FEDACOVA) • Fundación Tecnológica Advantx • Universidad de Almería

PROMISEANG: Alternative PROteins from Microbial fermentation of non-conventional SEA sources for Next-Generation food, feed and non-food bio-based applications (2023-2027)

Nº participantes: 10

- Universidad de Vigo (Coordinador)
- Moa Biotech SL
- Contactica SL
- Agencia Estatal Consejo Superior de Investigaciones Científicas
- Jealsa Foods SA

Waste4Soil: Turning food waste into sustainable soil improvers for better soil health and improved food systems (2023-2027)

Nº participantes: 24

- Instituto de Investigación y Tecnología Agroalimentaria
- Acondicionamiento Tarrasense Asociación
- Instituto Tecnológico del Embalaje, Transporte y Logística
- Biomasa Peninsular SA
- Agencia Estatal Consejo Superior de Investigaciones Científicas

ONE EARTH: Earth-to-marine-to-earth virtuous cycle: Harnessing residual biomass of animal origin for terrestrial-marine integrated circular economy (2024-2028)

Nº participantes: 14

- Asociación Nacional de Fabricantes de Conservas de Pescados y Mariscos-Centro Técnico Nacional de Conservación de Productos de la Pesca

POLYMEER: Brewers spent grain as main by-product for development of novel, high-performance bio-based polymers, polymer blends, and co-polymers (2024-2028)

Nº participantes: 14

- Lomartov SL
- AIMPLAS - Asociación de Investigación de Materiales Plásticos y Conexas

PROMOFER: Boosting upstream and downstream processes to maximize yield of PHB production and 2,3-butanediol (2024-2028)

Nº participantes: 13

- AIMPLAS - Asociación de Investigación de Materiales Plásticos y Conexas (Coordinador)
- Instituto Regional de Investigación y Desarrollo Agroalimentario y Forestal de Castilla-La Mancha

ReLeaf: Recycling locally produced bio-wastes to ensure affordability and availability of innovative bio-based fertilisers (2024-2028)

Nº participantes: 15

- Acondicionamiento Tarrasense - LEITAT (Coordinador)
- AERIS Tecnologías Ambientales SL
- Nuevas Tecnologías para el Desarrollo de Packaging y Productos Agroalimentarios con Componente Plástica SL
- Global Omnium Medioambiente SL
- Anecoop Sociedad Cooperativa

Zest: Valorization of agro-Industrial waste through fungi fermentation supported by digital modeling (2024-2028)

Nº participantes: 12

- Acondicionamiento Tarrasense - LEITAT
- Corporación Tecnológica de Andalucía - CTA

PATENTES BIOENERGÍA

Biocombustibles sólidos (pellets, biochars, bio RDFs, bio SRFs, etc.)		
Nº Publicación	Solicitante (País)	Contenido técnico
WO2024246481A1	Carbon Compost Company (GB)	A charcoal retort and a method of producing charcoal. Charcoal is produced by strongly heating biomass (e.g. wood or other animal and/or plant materials) in minimal oxygen to remove all water and volatile constituents. The present invention provides a charcoal retort configured to rotate an inner vessel within an outer vessel. In this way, granular material such as wood chippings and/or horse manure may be pyrolyzed within the inner vessel more effectively, as the rotation of the inner vessel allows the granular material to be continuously mixed for even heating and to permit out-gassing of water and volatile constituents uninhibited by adjacent granular material.
EP4464762A1	Commissariat Energie Atomique (FR)	Method for shaping biomass powder in the form of beads. A method of treating biomass to produce biomass beads suitable for use in a gasification process, the method comprising the following steps: a) providing a first solution containing algae and carbonates, the first solution preferably being at a temperature of between 30°C and 60°C, whereby alginate is formed, b) adding a biomass powder to the first solution, whereby a second solution is formed, the particle size of the biomass powder preferably being less than 1000 µm, c) adding dropwise, for example by means of an injection nozzle preferably having an outlet orifice of 1 mm to 20 mm in diameter, the second solution to an ionotropic coagulation bath comprising divalent ions, whereby biomass beads suitable for use in a gasification process are formed.
WO2024240463A1	IFP Energies Now (FR)	Method for treating a lignocellulosic biomass. The invention relates to a method for treating lignocellulosic biomass with • b) a step of acidic or neutral pretreatment of the biomass in order to produce an acidic or neutral pretreated biomass, alternately with • b1) a step of basic pretreatment of the biomass previously placed under acidic, neutral or basic conditions, to produce a basic pretreated biomass, then • c) a step of enzymatic hydrolysis of the acidic pretreated biomass and/or of the basic pretreated biomass in order to obtain a hydrolysed biomass, • d) a step of solid/liquid separation of the hydrolysed biomass resulting from step c) in the form of sugar(s) or a step of solid/liquid separation of the hydrolyzed biomass in the form of sugar(s) resulting from step c) and then treated in steps subsequent to step c) of enzymatic hydrolysis, in order to obtain a separated liquor and an unconverted solid residue, • e) a step of recycling the solid residue to the basic pretreatment step b').
WO2024217906A1	IFP Energies Now et al. (FR)	Device for the treatment of a solid feedstock, comprising recycling of the solid feedstock. The invention relates to a device for treating a feedstock, comprising a furnace (301) having an enclosure comprising an inlet (316) and an outlet (304) for the feedstock and an inlet (317) and an outlet (318) for a gas. The device comprises a system (306) for recovering the feedstock, comprising a recovery line (305) connected to the outlet (304) for the feedstock on the enclosure and comprising a sampling and/or analysis means (319). The recovery line comprises two lines in parallel downstream of the sampling and/or analysis means (319), one of the lines being a line leading to a storage tank (308) and another line being a line leading to an opening (303) for reintroducing the feedstock into the furnace (301). The invention also relates to a method for drying or roasting and to a facility for producing hydrocarbons from the drying or roasting device.
WO2024204270A1	Mitsubishi UBE Cement Corp (JP)	Biomass solid fuel and method for producing biomass solid fuel. The present disclosure provides a biomass solid fuel containing a biomass carbide containing polysaccharides, the content of mannose contained as a constituent sugar being 7.0 mass% or less. The present disclosure also provides a method for producing the biomass solid fuel, the production method comprising a heating step for heating a biomass molded body that contains polysaccharides, contains xylose as a constituent sugar, and has a mannose content of 9.0 mass% or less to thereby obtain the biomass solid fuel. In the heating step, the reduction rate of the xylose when the biomass solid fuel is obtained from the biomass molded body is 45.0% or greater.
WO2024221097A1	Prairie Clean Energy Inc (CA)	Modified pellet mill for low bulk density agricultural straw residues. A pellet mill and method for producing biomass pellets from low-density, loose crop straw feedstock. The pellet mill includes a die with a minimum thickness of 37 mm equipped with extrusion channels, and at least two powered rollers that apply opposing axial and frictional forces to densify the feedstock into pellets on pressure through the die. A powered force feeder enhances the feed rate of the feedstock particles into the mill, improving throughput and pellet quality. Additionally, the mill may feature a cutter for adjusting pellet length and can accommodate various die configurations, including flat and ring-shaped, to optimize the pelletization process for different types of agricultural straw.

Nº Publicación	Solicitante (País)	Contenido técnico
EP4458931A1	Subcoal Int BV (NL)	Method to prepare feed bodies from waste material. The present invention relates to a method to produce feed bodies, which are capable of providing free flowing granules and/or powder suitable for firing in an industrial furnace at one or multiple burners, the method comprising the following steps: (i) providing waste material comprising one or more thermoplastic material(s) of more than 40%, based on the total dry weight of the waste and one or more cellulosic material(s) of more than 30%, based on the total dry weight of the waste; (ii) processing the waste material in an extruder, which extruder is equipped with transport, kneading and heating elements such that the waste material is mixed and thermoplastic material is molten; (iii) wherein the material reaches a temperature of between about 110 and 200 °C, for more than about 2 sec before cooling; (iv) pressing the processed waste material through a die with holes between 2-200 mm, and providing feed bodies with a thickness between about 2-200 mm, and a length of between about 2-500 mm.
WO2024211096A9	Univ Hawaii (US)	Process for biocarbon production with high compressive strength for use in metallurgic applications. A method for making transient plastic phase biochar from various biomass feedstocks includes receiving a biomass feedstock at a pyrolysis chamber, providing an inert gas or air environment to the pyrolysis chamber, and pyrolyzing the biomass feedstock in the pyrolysis chamber at a pressure above 1500 psi and a temperature range of 290 - 350 °C to generate the transient plastic phase biochar. The method may further include making a transient plastic phase biocarbon by grinding the transient plastic phase biochar into a powder, compressing the powder into a pellet, and devolatilized the pellet in an inert environment at atmospheric pressure at a temperature range of 300 - 1200 °C for 1 hour at a heating rate of 3-10 °C/min produce transient plastic phase biocarbon.
WO2024240252A1	Zhu Bing et al. (CN)	Set of clean products prepared from environmental garbage. The present invention belongs to the field of the harmless utilization of garbage resources, and specifically relates to a set of clean products prepared from environmental garbage. The set includes a subset 1 of solid fuel products, or includes the subset 1 and a subset 2, wherein the subset 2 comprises one or more of crude wood vinegar, refined wood vinegar and an impurity-removed emulsified tar product; and the subset 1 is a combination of any one of varieties of materials A, B, C and D and one or more of the remaining three materials, or only a separate C is taken, or when the sum "WA+WB+WC+WD" of parts by weight of the varieties of the materials is equal to 10 parts by weight, the subset 1 is constituted by means of the ratios "WA/WB/WC/WD" of the parts by weight of the varieties of the materials within the ranges of "0-9.9/0-8/0-10/0-6". The set of clean products provided in the present invention can realize the harmless utilization of environmental garbage resources.

Syngas

Nº Publicación	Solicitante (País)	Contenido técnico
EP4477307A1	Air Liquide (FR)	Reactor for producing synthesis gas by partial oxidation with improved synthesis gas cooling. A reactor for producing synthesis gas by partial oxidation of a carbon-containing fuel, having a reaction space and a cooling space, wherein a cooled gas guide tube connects the reaction space and the cooling space to one another. The gas guide tube has a gas inlet region, which adjoins the reaction space, and a gas outlet region, which adjoins the cooling space. The gas guide tube has an inner tube and an outer tube, as a result of which an annular gap is formed, wherein the annular gap is connected fluidically to a coolant feed, and the inner tube has an opening to the annular gap in the gas inlet region of the gas guide tube, and a baffle is arranged in the region of this opening, and an orifice is arranged in the gas outlet region of the gas guide tube.
EP4455251A1	Bioreactor Oue (EE)	A biomass gasification reactor, system for remotely operating same and method therefor. Disclosed is biomass gasification reactor (100) comprising reactor body (102) configured to receive and heat feed of biomass to produce pyrolysis gases and vapours; combustion chamber (104) operatively coupled to reactor body and having first end (104A) and second end (104B) opposite to first end, combustion chamber is configured to receive, via plurality of inlet means (106) arranged at first end, pyrolysis gases and vapours from reactor body; and mix and recirculate pyrolysis gases and vapours with air, passed from set of circulating means (108), to produce partially oxidized pyrolysis gases and vapours; reduction chamber (110) comprising reduction plate (112) configured to create pressure differential to receive partially oxidized pyrolysis gases and vapours, and reduce partially oxidized pyrolysis gases and vapours received from second end of combustion chamber, to produce synthesis gas; and extractor operatively coupled to reduction chamber, where extractor is configured to extract produced synthesis gas from reduction chamber.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024231296A1	Fritsche Andreas (AT)	Device and method for thermochemically producing syngas from carbon-containing synthetic substances and/or biomass. The invention is used to thermochemically produce syngas using a fixed-bed shaft reactor (1) that is operated in a co-current mode and has a reaction chamber through which carbon-containing synthetic substances (2) and/or solid biomass particles (3) flow from top to bottom. By continuously adding an oxygen-containing gas (7) in an autothermal gassing process, a raw syngas is produced in the shaft reactor (1) as the gas flows through a fuel pre-heating zone (4), a pyrolysis zone (5), and an oxidation zone (6) arranged downstream thereof, and the syngas is drawn at the lower end of the fixed-bed shaft reactor (9) together with fly ash after additionally flowing through a reduction zone (8). After exiting the reduction zone (8), the raw syngas flows through an entrained-flow zone (12) which is located below the reduction zone (8) in the reactor. In order to improve the efficiency by using the sensible excess heat of the produced syngas, the invention proposes providing an inlet for the oxygen-containing gas (7) below the reduction zone (8), and the walling of the reactor in the entrained-flow zone (12) is designed to be double-walled at least in some regions in the form of a heat exchanger with at least one heat exchanger surface (18), wherein the oxygen-containing gas is conducted through a gas pre-heating zone (17) formed in the heat exchanger such that the outflowing raw syngas is cooled, and the oxygen-containing gas is heated.
WO2024201939A1	Mitsubishi Heavy Ind Ltd et al. (JP)	Biomass gasification device and method for operating same. A biomass gasification device (1) comprises: a gasification furnace body in which a first cylindrical part (4), a second cylindrical part (5), and a third cylindrical part (6) are connected in that order from the upstream side of the gas flow, from top to bottom; a gasifying agent supply part (10) that is connected to the first cylindrical part (4) and that supplies a gasifying agent; and a biomass raw material supply part (14) that is connected to the second cylindrical part (5) and that supplies a granular biomass raw material. If the representative diameter (ΦL) of the first cylindrical part (4) is 1, the representative diameter (ΦU) of the third cylindrical part (6) is 3-9 (excluding 6.5-7.5).
WO2024233774A2	Univ Florida (US)	Solar-powered flexible waste-to-fuels process. Various examples are provided related to conversion of biomass and other carbonaceous sources using solar heat. In one example, a waste-to-fuel conversion method includes generating carbon-containing gases and vapors from a carbonaceous waste by pyrolysis; and converting the carbon-containing gases and vapors to carbon monoxide and hydrogen (synthesis gas or syngas) in a chemical looping cycle utilizing a reduction/oxidation (redox) material. Heating for the pyrolysis and chemical looping cycle is provided by solar thermal energy via a thermal storage medium. In another example, a gasification process includes a pyrolysis reactor that can generate carbon-containing gases and vapors from a carbonaceous waste; and a chemical looping redox cycle that can convert the carbon-containing gases and vapors to carbon monoxide and hydrogen (synthesis gas or syngas) utilizing a redox material. Heating for the pyrolysis reactor and chemical looping redox cycle is provided by solar thermal energy via a thermal storage medium.
WO2024241168A2	Williams Gary John Pilkington (ZA) et al.	Gasification. The disclosed invention relates to a method of and process for gasifying a carbonaceous feedstock. The method comprises the following steps: pyrolysing a carbonaceous feedstock, by effecting heat exchange between heated gas and the carbonaceous feedstock under non-oxidizing conditions through direct and/or indirect contact between the heated gas and carbonaceous feedstock, and thus producing a pyrolysis gas and a solid pyrolysed product; gasifying the solid pyrolysed product, thus producing syngas; producing heat of combustion by combusting at least some of the syngas and/or hydrogen recovered from the syngas; effecting heat exchange between the heat of combustion and the pyrolysis gas, to produce heated pyrolysis gas; and using the heated pyrolysis gas to provide at least some of the heat to perform the pyrolysis of the carbonaceous feedstock.

Biogás

WO2024203281A1	Air Water Inc (JP)	Liquefied methane production method and liquefied methane production apparatus. Provided is a method for producing liquefied methane from a biogas containing a methane gas, a carbon dioxide gas, a nitrogen gas, an oxygen gas, an argon gas and water or an enriched gas obtained by enriching the methane gas in the biogas, the method comprising a first step for separating the carbon dioxide gas and water from the biogas or the enriched gas to produce an intermediate gas and a second step for subjecting the intermediate gas to distillation separation using a distillation column to produce liquefied methane.
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Nº Publicación	Solicitante (País)	Contenido técnico
WO2024252565A1	Biofuel Tech Research Co Ltd (JP)	Methane fermentation method and method for producing methane fermentation accelerator. This methane fermentation method comprises adding organic waste to a methane fermentation system to produce biogas containing methane, the method being characterized in that: a methane fermentation accelerator is used in combination with organic waste; the methane fermentation accelerator contains glycerin; and the content of an n-hexane extract is at most 10,000 mg/kg. The present invention provides: a methane fermentation method by which biogas containing methane can be efficiently produced from organic waste while utilizing glycerin; and a method for producing a methane fermentation accelerator which can accelerate methane fermentation.
WO2024260504A1	Daberto David et al. (DE)	Biogas plant for production of biogas and fermentation product. The invention relates to a biogas plant for production of biogas and fermentation product. The biogas plant comprises a reservoir for production of a fermentation substrate. The reservoir comprises a comminution unit designed for comminution of material supplied to the reservoir, and a water conduit interface designed for provision of a water supply to the reservoir, so as to enable hydrolysis of the comminuted material within the reservoir.
WO2024246243A1	Kanadevia Inova AG (CH)	Method and system for the hygienization of a digestate in the production of biogas. The present application relates to a method and system for hygienization of a digestate (14) in the production of a biogas from biomass 16. The method involves a) an anaerobic digestion step involving breakdown of organic biomass (16) through microorganisms in the absence of oxygen at a temperature below 50°C within an anaerobic digester (10) to produce methane-containing biogas (12) and a digestate (14); and b) a thermal treatment step involving treatment of at least part of the digestate (14, 22, 24) at a temperature above 175°C for at least one minute. The thermal treatment step involves one treatment selected from the group of pyrolysis, torrefaction, gasification, hydrothermal gasification, hydrothermal carbonization and hydrothermal liquefaction.
WO2024252200A1	Mapro International Macch Pneumatiche Rotative SPA (IT)	Method for controlling biogas production processes and digester for biogas production. A method for the optimisation and control of biogas production processes including a step of detecting a working parameter of the biogas production process and a step of driving the biogas production process based on real-time processing of the working parameter, and a digester for the production of biogas from sludge.
EP4464671A1	National Res and Development Institute for Industrial Ecology Ecoind (RO)	Combined ultrasonic and alkaline pretreatment method of wastewater treatment plant sludge for the improvement of biogas production by anaerobic fermentation. The invention concerns a combined process of ultrasonic alkaline treatment of biological sludge from the wastewater treatment plants before the anaerobic digestion for enhanced of biogas production. The main treatment steps of the sludge are: Sludge homogenization - Alkaline digestion with NaOH - Ultrasonication - Anaerobically digestion Ultrasonic application, with or without alkaline digestion led to a half insemination time, the transformation of at least 50% of organic load as CODCr into biogas, and twice a higher biogas amount with methane 70% content.
WO2024251649A2	Niederbacher Michael (IT)	Biogas installation fermenter vessel and method for operating same. The invention relates to a biogas installation fermenter vessel (1), which has a vessel interior (3) which is formed by a bottom wall (4), a circumferential side wall (5) and a foil roof (6), connected in a gas-tight manner to the side wall (5), and in which a fermentable substrate is received. Also provided is a service device (2), which has a service platform in the form of a pedestal panel (8) which can be walked on, said service device being connected in a gas-tight manner to the side wall (5) and having a roof connection region (9) for a foil roof (6). The foil roof (6) is designed as a carrier air roof with a roof outer skin foil (20) and a gas accumulator foil (24). The pedestal panel (8) has a service opening (10) which can be closed in a gas-tight manner by means of a cover device (11) and through which a height-adjustable submersion device (17) can be moved out of and back into the vessel interior (3). According to the invention, a gas outlet (31; 37) connected to a gas extraction device is arranged above the plane of the pedestal panel (8) and/or above the plane of a vessel upper edge defined by the side-wall upper edge. It is proposed that alternatively or additionally, the pedestal panel (8) has an edge-side frame (19) projecting downwards into the vessel interior (3) and/or during operation of the biogas installation submerged in the substrate, said frame extending circumferentially on the edge side at least at the region of the pedestal panel (8) projecting into the vessel interior (3).

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024209415A1	Tanaga Energies (FR)	Facility and method for producing biomethane by natural separation of gases from bacterial digestion of solid waste containing fermentable organic matter. The invention relates to a facility for producing biomethane from solid waste containing fermentable organic matter, the facility comprising: - at least one enclosure (10) arranged to be open in order to receive a mass of waste (16) to be treated, or closed in a gas-and liquid-tight manner; and - a first capture means positioned inside the enclosure in an upper zone for accumulating light gases which is located above the mass of waste and is commonly referred to as the ceiling of the enclosure, the first capture means being configured to capture light gases originating from a bacterial digestion of the mass of waste inside the enclosure, the facility being characterised in that it also comprises a lower zone for accumulating heavy gases which is located beneath the mass of waste. The invention is useful for producing biogas from solid fermentable waste.
WO2024254520A2	Univ Iowa Res Found (US)	Machine learning-enabled optimization of biogas production. A biogas optimization system, including a machine learning model trained to identify features indicative of biogas production based on past biogas production and the composition and flow of past substrates provided to a digester. Using the machine learning model, the biogas optimization system predicts biogas production from a digester in view of the composition of substrates provided to the digester (determined, for example, using sensor data from diffuse reflectance detectors). Some embodiments also predict an optimal composition of the digester for optimizing biogas production (e.g., optimal percentages of lipids, protein, and/or carbohydrates) and adjust the flow and/or volume of a substrate to the digester. To predict the optimal composition of the digester, the machine learning model may also be trained on a physics-based model of the anaerobic digestion processes (e.g., Anaerobic Digestion Model No. 1 (ADM1)) and/or data captured during laboratory simulations of the anaerobic digestion processes.
WO2024263595A2	US Venture Inc et al. (US)	Biochar systems and methods for treating biogas. Disclosed and described herein are apparatuses, assemblies, compositions, methods, and systems for generating and treating biogas with biochar. Certain embodiments of the present invention comprise biochar apparatuses for scrubbing biogas to remove hydrogen sulfide. Certain embodiments of the present invention comprise assemblies of co-located pyrolysis reactors and anaerobic digesters for generating biochar and biogas. Certain embodiments of the present invention comprise biochar so generated, including sulfur saturated biochar.

Bioalcoholes (bioetanol, biometanol, etc.)

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024206342A1	Danisco US Inc (US)	Reduced fermentation glycerol and acetate using yeast expressing rubisco from gallionella capsiferriformans. The present compositions and methods relate to modified yeast cells that heterologously express the RuBisCo enzyme from a particular species of iron-oxidizing bacteria. The modified yeast cells demonstrate reduced glycerol and acetate accumulation in fermentation, while maintaining high ethanol production, making them useful for large-scale ethanol production from starch substrates, where glycerol and acetate represent undesirable by-products.
WO2024243660A2	Godoy Alexandre et al. (BR)	Process for alcoholic fermentation of amylaceous substrates with elimination of yeast propagation step and without use of separating centrifuges. This patent application concerns an alcoholic fermentation process for starchy substrates with elimination of the yeast propagation stage, in addition to dispensing with the use of separating centrifuges, i.e., the objective is to eliminate the yeast propagation stage in ethanol production processes based on starchy substrates, resulting in a reduction in fermentation time, gains in fermentation yield, and reduction in operating costs, particularly in relation to the daily acquisition of yeast.
US2024392333A1	Greenlab Inc (US)	Methods and compositions for increasing glucose yield from grain. The present disclosure provides methods of converting cellulose in grain to glucose for ethanol production. By providing cost-effective cellulases expressed in the grain, the methods increase glucose yield compared to the use of starch degrading amylase enzymes alone.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024240463A1	IFP Energies Now (FR)	Method for treating a lignocellulosic biomass. The invention relates to a method for treating lignocellulosic biomass with • b) a step of acidic or neutral pretreatment of the biomass in order to produce an acidic or neutral pretreated biomass, alternately with • b1) a step of basic pretreatment of the biomass previously placed under acidic, neutral or basic conditions, to produce a basic pretreated biomass, then • c) a step of enzymatic hydrolysis of the acidic pretreated biomass and/or of the basic pretreated biomass in order to obtain a hydrolysed biomass, • d) a step of solid/liquid separation of the hydrolysed biomass resulting from step c) in the form of sugar(s) or a step of solid/liquid separation of the hydrolyzed biomass in the form of sugar(s) resulting from step c) and then treated in steps subsequent to step c) of enzymatic hydrolysis, in order to obtain a separated liquor and an unconverted solid residue, • e) a step of recycling the solid residue to the basic pretreatment step b').
CN118777492A	Jiangsu Lianhai Biological Tech Co Ltd (CN)	Separation and purification device for microbial fermentation ethanol concentration detection. The invention relates to a separation and purification device for microbial fermentation ethanol concentration detection in the field of solid-liquid separation, in the application, a sample in a sampling bottle is heated, a non-precipitate part in the sample is evaporated, enters a detection bottle through a connecting pipe under the action of heated airflow, and is liquefied again; meanwhile, the accuracy of a detection result and the safety of the device are improved by arranging a back-suction prevention unit and an anti-explosion unit respectively, and the back-suction prevention unit seals a connecting part after sample separation is finished, so that a sample back-suction phenomenon does not easily occur between the sampling bottle and the detection bottle, the detection result is not easily influenced, and the detection efficiency is improved. The anti-explosion unit can avoid stress fatigue caused by overlarge temperature difference and pressure difference in the sampling bottle, the sampling bottle is not prone to being directly broken, the experiment safety is not prone to being influenced, solid-liquid separation can be achieved to the maximum extent, the concentration of a detected object is not prone to being influenced, and the detection accuracy is not prone to being influenced.
WO2024258820A2	Novozymes AS (DK) et al.	Processes for producing fermentation products using engineered yeast expressing a beta-xylosidase. The present invention relates to processes of producing fermentation products, such as ethanol from starch-containing material using fermenting organisms that express a GH120 or GH3 beta-xylosidase.
CN118813722A	Qilu Univ of Technology (CN)	Application of site-directed mutagenesis Hog1p in improving production of ethanol from xylose or lignocellulose by saccharomyces cerevisiae. The invention relates to application of site-directed mutagenesis Hog1p in improving production of ethanol from xylose or lignocellulose by saccharomyces cerevisiae, and belongs to the field of bioengineering. Proline at the 237th position of a saccharomyces cerevisiae strain Hog1p is mutated into glycine to construct a mutant strain, and the ethanol yield of the strain in a culture medium taking xylose as a unique carbon source is increased by 72.4%; in a xylose culture medium containing 2.5 g/L of acetic acid, the yield of ethanol is increased by 25.8%; and a theoretical basis is provided for overcoming the technical bottleneck existing in the process of producing the second-generation fuel ethanol from the lignocellulose by using the saccharomyces cerevisiae.
CN118879788A	Sichuan Univ et al. (CN)	Method for preparing fuel ethanol from straw biomass and fuel ethanol. The invention discloses a method for preparing fuel ethanol from straw biomass and fuel ethanol, and belongs to the technical field of fuel ethanol production. The method comprises the following steps: performing dissolution and hydrolysis reaction on straws and concentrated sulfuric acid to obtain saccharified liquid, separating out sugar-rich liquid in a simulated moving bed chromatography system, mixing with saccharomyces cerevisiae SEB3 for fermentation, and distilling to generate fuel ethanol. According to the method for preparing the fuel ethanol from the straw biomass, fermentable sugar can be obtained under normal-pressure and low-temperature conditions through concentrated acid hydrolysis, and the method has the remarkable advantages of being low in energy consumption, low in toxic byproduct content and free of cellulase input. Saccharomyces cerevisiae SEB3 is adopted for fermentation, the strain has the total sugar co-fermentation capacity, total sugar utilization fermentation can be achieved, total sugar is synchronously converted into ethyl alcohol, the sugar consumption efficiency reaches 90% or above, the ethyl alcohol recovery rate reaches 80% or above, and the strain can be suitable for industrial production.

Nº Publicación	Solicitante (País)	Contenido técnico
CN118773774A	Southwest Univ (CN)	Diversified biomass material processing system and method based on bioethanol. The invention discloses a diversified biomass material processing system and method based on bioethanol, in the production process of bioethanol, a mixed solvent of separated bioethanol dissolved metal salt is used as a coagulating bath, so that a biomass solution is coagulated and formed, and a biomass fiber or a biomass membrane material is processed; and the used mixed solvent is distilled and purified to obtain bioethanol again, and the bioethanol is recycled or prepared into an ethanol product. According to the technical method, on the basis of bioethanol production, a new industrial system is derived, the yield of bioethanol is not affected, green processing of biomass materials is promoted, green collaborative development of bioethanol and biomass material manufacturing is achieved, and the overall output and economic value are improved.
CN118791630A	Zhengzhou Chuangsheng Biological Eng Co Ltd (CN)	High-activity cellulase chimeric variant and application thereof. The invention relates to a high-activity cellulase chimeric variant and application thereof. The amino acid sequence of the high-activity cellulase chimeric variant is shown as SEQ ID NO.8. Compared with a wild type amino acid sequence of cellulase, the chimeric variant of the cellulase contains 27 amino acid variation sites, the pH value of enzymatic reaction is wider, the chimeric variant is suitable for various pH conditions, the optimum temperature is 40 DEG C, and the activity of the chimeric variant of the cellulase is improved by more than 10 times compared with that of the wild type under the same condition.

Biodiésel

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024205513A1	ESG Jet Thailand Company (TH)	Method and application for methyl ester and glycerine separation used in biodiesel purification process. Method and application for methyl ester and glycerine separation is developed to for a high-purity biodiesel production which involves several machinery, equipment, and processes. After the rapid first-cycle reaction, by reducing the flow rate, the raw glycerin can separate out from the raw methyl ester mass in the form of small pellets. The raw glycerin can be forced to cycle back into a homogeneous mixture with the new biodiesel methyl ester for at least four cycles. It is possible to accelerate the transesterification reaction to proceeds until the quality level of the methyl esters is high as 96.5% by use of the first-cycle reactor. Then, with the use of the second-cycle reactor, the quality level will be 98% by adding 5.0% methanol by weight compared to the flow rate entering the system and 0.5% sodium methylate of pure refined palm oil, respectively.
CN118772928A	Hebei Nanhong New Energy Tech Co Ltd (CN)	Biodiesel production process. The invention belongs to the technical field of biodiesel preparation, and particularly relates to a biodiesel production process which comprises front-stage treatment, middle-stage treatment and rear-stage treatment, grease separation in the front-stage treatment comprises liquid-state oil-water separation and animal fat grease separation, and the liquid-state oil-water separation is that recovered liquid-state waste oil is filtered and then stands; the step of separating the fat from the animal fat comprises the following steps: sorting waste fat, removing impurities, slitting, heating, filtering oil residues to obtain second liquid fat, mixing the second liquid fat with the first liquid fat while the second liquid fat is hot to obtain mixed fat, and carrying out secondary dehydration. According to the method, the animal fat needing to be heated is independently heated, the heated and filtered oil liquid is mixed with other waste oil, the mixed oil is subjected to secondary water removal, esterification reaction conditions more suitable for a basic catalyst are created, heating residual heat is fully utilized in the whole process, the production efficiency of biodiesel is improved, and the production cost is reduced. And the cost can be reduced.
CN221836936U	Jiujiang Lvzhou Energy Tech Co Ltd (CN)	Methanol recovery device for biodiesel processing. The utility model relates to the technical field of biodiesel processing, and discloses a methanol recovery device for biodiesel processing, which comprises a reaction box, a liquid outlet pipe is arranged inside the left side of the reaction box, a one-way valve is movably arranged inside the liquid outlet pipe, and an annular through hole is arranged inside the top end of the reaction box. According to the methanol recovery device for biodiesel processing, through the arrangement of a heating reaction structure and a separation structure, a heating block is electrified, so that heat of the heating block is slowly increased, then the heat is transferred to biodiesel through silica gel beads and a T-shaped heat conduction piece, then a rotating motor is started, the rotating motor drives a separation barrel to rotate through a rotating shaft, and the separation barrel is separated; the reaction effect of biodiesel in the separation cylinder is improved through the polymer blending catalytic membrane, meanwhile, water generated through reaction in the separation cylinder is transferred out from the interiors of the semi-permeable membrane and the filter holes through centrifugal force, and methanol obtained through reaction is recycled through the methanol return pipe.

Nº Publicación	Solicitante (País)	Contenido técnico
US2024336849A1	34MJ PTY LTD (AU)	Mobile biodiesel manufacturing plant for continuously producing biodiesel from a triglyceride source. A mobile biodiesel manufacturing plant for continuously producing biodiesel from a triglyceride source and a method of continuously producing biodiesel from a triglyceride source in the mobile biodiesel manufacturing plant.
WO2024223722A1	Novozymes AS (DK)	Fatty acid esterification pretreatment process. A process for enzymatic esterification of free fatty acids. In particular, the present invention relates to a pretreatment process for conversion of free fatty acids in oils and fats as feedstock for base-catalyzed transesterification to produce biodiesel.
US2024409842A1	Univ Clemson (US)	Removal of metals and inorganics from rendered fat using polyamine-modified cellulose nanocrystals. Methods and compositions are described that are useful for the refinement of animal or plant based fats or oils, such as rendered animal fats or used cooking oils. The methods can be utilized to remove metal and inorganic contaminants from the fats or oils. Refined products of the methods can be used to produce biodiesel that is compliant with ASTM B6751 for B100, and D7467 for B6 to B20.
WO2024261596A1	Univ degli Studi di Roma "La Sapienza" (IT)	Lipid conversion process for obtaining biodiesel. The present invention generally relates to a conversion process of lipids or oils to obtain lower alcohol esters to be used in the production of automotive biodiesel. In particular, the invention relates to the conversion of organic acids and triglycerides of plant origin into corresponding esters of C1-C4 lower alcohols, preferably methyl alcohol. More specifically, the invention relates to a method for producing biodiesel starting from vegetable oils, such as corn oil deriving from post-fermentation. The process of the invention is quantitative in transforming both fatty acids and glycerides into the corresponding esters thanks to the presence of two immiscible phases: an organic phase, consisting of fatty acid methyl esters (FAME) and an aqueous phase consisting of water, glycerol and acid catalyst. The lower alcohol esters, in particular the methyl esters thus produced, can be used in automotive fuel blends.
US12168758B1	Univ King Faisal (SA)	Zinc coordination organoselenium polymer for the synthesis of biodiesel from waste oil. A zinc coordination organoselenium polymer may be a catalyst. The zinc coordination polymer may be a catalyst for biodiesel fuel. A method of forming biodiesel from waste oil may include using the zinc coordination polymer. The waste oil may be selected from a group consisting of vegetable oil and animal fats.
ES2989810A1	Univ La Laguna (ES)	Procedure for obtaining a catalyst by three-dimensional printing, obtainable catalyst and its use. Method for obtaining a catalyst by three-dimensional printing, obtainable catalyst and use thereof. Method for obtaining a catalyst; the method comprises extruding a filament comprising a catalytic material and a thermoplastic binder by three-dimensional printing and subjecting the material obtained to a heat treatment. Catalyst obtainable by the method of the invention. Use of the catalyst of the invention in transesterification reactions of vegetable oils to produce biodiesel and in photocatalysis.
CN118807823A	Univ Shandong (CN)	Acid-base dual-property ester exchange catalyst taking clinoptilolite as carrier as well as preparation method and application of acid-base dual-property ester exchange catalyst. The invention discloses an acid-base dual-property ester exchange catalyst taking clinoptilolite as a carrier as well as a preparation method and application of the acid-base dual-property ester exchange catalyst, and belongs to the technical field of catalyst preparation. The method comprises the following steps: dissolving activated clinoptilolite, zircon salt and calcium salt in water, dropwise adding an ammonium carbonate solution into the obtained solution, adjusting the pH value to be alkaline to obtain a precipitate, washing and drying the precipitate, and calcining to obtain the acid-base dual-property ester exchange catalyst which takes the clinoptilolite as a carrier and loads zirconium oxide and calcium oxide on the carrier. The catalyst has acid-base properties and high catalytic activity, can show a good catalytic effect at a relatively low temperature (131 DEG C), can catalyze esterification and ester exchange at the same time, provides an effective path for efficient and low-cost synthesis of biodiesel from inferior raw oil (the acid value is 0.34-18.358 mg KOH/g) containing high free fatty acids, and has wide application prospects. The method has huge potential in biodiesel industrial production.

Bio-jet fuels

Nº Publicación	Solicitante (País)	Contenido técnico
US2024327315A1	Alliance Sustainable Energy et al. (US)	Diels-Alder coupling for cycloalkane production for sustainable aviation fuel. Described herein are methods for the generation of cyclic alkanes, useful as sustainable aviation fuel, from sustainable biomass sources. The described methods utilize Diels-Alder reaction followed by hydrogenation to generate the desired compounds from lignocellulosic biomass.
US2024368054A1	Alliance Sustainable Energy et al. (US)	Fuels and methods of making the same. The present disclosure relates to a method that includes processing, in a hydrodeoxygenation (HDO) reactor, at least one of a VFA-derived ketone and/or a co-processing stream to produce a composition that is at least partially bioderived, as determined by ASTM-D6866.
US2024409831A1	Chevron USA Inc (US)	Process to make a renewable product from biofeedstock. A process for making a renewable product from a biofeedstock, in which a biofeedstock is contacted with a hydroconversion catalyst under hydroconversion conditions, the biofeedstock comprising one or more biocomponents having a C20+ content of at least about 10 wt. %, and the hydroconversion catalyst comprising a hydroisomerization catalyst.
US2024425764A1	Chevron USA Inc (US)	Systems and processes for lipid feedstock treatment with moving bed reactor. A lipid feedstock including fatty acid(s) is treated in a process flow through a moving bed reactor with catalyst to produce a treated stream. The catalyst may include metal oxide catalyst on a particulate oxide support. The catalyst may be transferred, using a catalyst withdrawal line, from the bottom of the moving bed reactor to a fluidized bed regenerator, and regenerated. The catalyst may be transferred from the fluidized bed regenerator to a cyclone that separates the catalyst from flue gas. The catalyst may be transferred from the cyclone to the top of the moving bed reactor using a catalyst feed line. A first separation gas may be flowed into the catalyst feedline, and a second separation gas may be flowed into the bottom of the moving bed reactor or into the catalyst withdrawal line, to generate pressure differentials driving the process flow through the moving bed reactor.
CN118767973A	Henan Junheng Ind Group Biotechnology Co Ltd (CN)	Method for preparing sustainable aviation fuel based on biomass. The invention provides a method for preparing sustainable aviation fuel based on biomass, and belongs to the technical field of aviation fuel, the method comprises the following steps: firstly preparing biomass straw into synthesis gas, then preparing the synthesis gas into ethanol, then preparing the ethanol into ethylene, and finally preparing the ethylene into the aviation fuel. The method for preparing the ethanol from the synthesis gas comprises the following specific operation steps: S1, introducing the synthesis gas and dimethyl ether into a fixed bed reactor, and carrying out a catalytic reaction under the conditions of 200-240 DEG C and 2-10 MPa through a modified molecular sieve catalyst to obtain a first-grade product; in the synthesis gas, the volume ratio of CO to H2 is (1-5): 2; s2, enabling the primary product obtained in the step S1 to flow to a bimetallic catalyst, and performing catalytic reaction under the conditions of 240-280 DEG C and 8-15 MPa to obtain a secondary product; and S3, separating the secondary product obtained in S2 to obtain ethanol. According to the method, the ethanol yield in the step of preparing the ethanol from the synthesis gas can be remarkably improved in the process of preparing the aviation fuel.
CN118780352A	Hengcheng Aviation Tech Nantong Co Ltd (CN)	Big data-based hydrogenation control method and system for aviation biofuel production. The invention provides a big data-based aviation biofuel production hydrogenation control method and system, and relates to the technical field of biofuel production, the big data-based aviation biofuel production hydrogenation control method comprises the following steps: obtaining historical hydrogenation data and fuel production quality data of aviation biofuel production; based on a hydrogenation decision tree analysis method, evaluating and analyzing the collaboration between the hydrogenation data and the fuel production quality data; establishing an aviation biofuel production prediction model based on the synergetic evaluation analysis result; and acquiring real-time production data of the aviation biofuel, and performing hydrogenation data control by using the aviation biofuel production prediction model. According to the method, the relationship among the variables in the production process can be understood more clearly, key influence factors can be identified, the production result can be predicted in advance by establishing the prediction model, and the hydrogenation control process can be optimized.
CN118813294A	Qingdao University of Science & Technology (CN)	Method for preparing high-energy-density fuel by taking lignin oil as single raw material. The invention discloses a preparation method of fuel. The preparation method comprises the following steps: (1) preparing lignin oil; (2) taking the lignin oil obtained in the step (1) as a single raw material, adding a catalyst with a core-shell structure, and reacting under certain conditions to obtain an oxygen-free fuel precursor; and (3) hydrogenating the oxygen-free fuel precursor obtained in the step (2) to obtain the fuel. The invention also discloses the fuel obtained by the preparation method.

Nº Publicación	Solicitante (País)	Contenido técnico
CN118812313A	Shandong Univ of Technology (CN)	Method for preparing aviation fuel cycloalkane component by using guaiacol. The invention belongs to the technical field of cycloalkane preparation, and particularly relates to a method for preparing an aviation fuel cycloalkane component from guaiacol. The method for preparing the aviation fuel cycloalkane component comprises the following steps: (1) carrying out alkylation reaction on guaiacol; (2) collecting a mixture which takes 2, 6-diisopropyl phenol as a main component; and (3) preparing cycloalkane through hydrodeoxygenation. According to the method for preparing the aviation fuel cycloalkane component by using the guaiacol, starting from the synergistic relationship among the steps, the guaiacol is alkylated into high-carbon alkylphenol through the first step, and the carbon chain of the high-carbon alkylphenol is prolonged; 2, purifying the product to obtain a mixture taking 2, 6-diisopropyl phenol as a main component; and 3, carrying out hydrodeoxygenation on the mixture taking 2, 6-diisopropyl phenol as a main component to produce high-carbon cycloalkane so as to produce a cycloalkane component meeting the carbon number and energy requirements of aviation fuel and further realize high-valued utilization of guaiacol.
WO202422724A2	Topsoe AS (DK)	Process and plant for producing synthetic paraffinic kerosene as jet fuel. Process and plant for producing hydrocarbon products from ethylene, the process comprising a) converting an ethylene stream in a first oligomerization reactor by contacting said ethylene stream with an oligomerization catalyst, said oligomerization catalyst being a homogeneous catalyst comprising: a transition metal compound or complex comprising at least one of Ti, Zr, Cr, Ni, together with an alkyl aluminum compound dissolved in a hydrocarbon solvent or an etheral solvent; or an alkyl aluminum compound dissolved in a hydrocarbon solvent or an etheral solvent, optionally as a co-catalyst; for producing a first stream of linear alfa olefins (LAOs) in the C2-C20 range of which at least 80 wt% having a Schultz-Flory distribution with a chain propagation probability (α) of 0.35-0.60, or a Poisson distribution with a chain propagation probability (λ) of 1.0-4.7; b-1) separating said first stream of linear alfa olefins in the C2-C20 range into a second stream of C2 olefins i.e. a separate ethylene (C2=) stream, a third stream of C4-C6 olefins, and a fourth stream of C8+ olefins, such as C8-C20 olefins; and b-2) recycling at least a portion of the second stream of C2 olefins from step b-1) to the first oligomerization reactor; c-1) converting the third stream of C4-C6 olefins from step b-1) in a second oligomerization reactor at conditions for trimerization, i.e. a trimerization reactor, by contacting the third stream of C4-C6 olefins from step b-1) with an oligomerization catalyst, optionally an oligomerization catalyst as defined in step a), for producing a fifth stream of branched C12-C18 olefins having a Branching Index (BI) higher than 0.30. The process may further comprise converting the fifth and fourth product streams to synthetic paraffinic kerosene (SPK). The invention is also directed to a method of retrofitting existing hydroprocessing plants.
CN118772922A	Yancheng Polytechnic College (CN)	Method for producing biological aviation kerosene by hydrogenation of waste oil. The invention discloses a method for producing biological aviation kerosene by hydrogenation of waste grease, and relates to the technical field of biological oils, and the method specifically comprises the following steps: S1, fully mixing the waste grease without large-particle impurities and a hydrogenation pretreatment catalyst, introducing nitrogen, introducing hydrogen to replace nitrogen, and introducing into a slurry bed hydrogenation reactor, carrying out hydrogenation pretreatment; s2, effluent obtained after hydrogenation pretreatment passes through a cyclone hydraulic separator, and tailings and a liquid product are obtained; s3, the product subjected to hydrogenation pretreatment enters a fixed bed hydrofining reactor, a fixed bed hydrocracking reactor and a fixed bed post-refining reactor which are sequentially connected in series for hydrogenation treatment; s4, the hydrogenation product enters a gas-liquid separation unit for gas-liquid separation; during hydrogenation catalysis, a larger combination surface area of hydrogen, the catalyst and waste grease can be realized, and the stability of the catalyst is improved.

Biohidrógeno

Nº Publicación	Solicitante (País)	Contenido técnico
RO138475A2	Kematronic Srl (RO)	Synergistic green-hydrogen production nanoreactor with and without anaerobic fermentation named "nano hydrogen". The invention relates to a process for preparing green hydrogen. According to the invention, the process consists of the following steps: treating biomass, biological sludges, algae, liquids loaded with organic substances and wastes from the food industry by aerobic/anaerobic fermentation with the liquid recycle, collecting the gases produced, storing the gases in gas micro-bubbles (MBG) with Venturi ejector, introducing the bubbles (MBG) into the recycled liquid, subjecting the liquid to two successive disintegrations: an ultrasonic one and an electro-kinetic one with high-voltage discharge with production of cavitation nano-bubbles (NBC) and gas nano-bubbles without cavitation, respectively, having a content of methane, ammonia, carbon dioxide, hydrogen sulfide, as well as NBC with plastic particles, pesticides, hormones, pharmaceuticals, thermolysis of organic matter and water and thermal nitrogen homolysis with decomposition of NBC and formation of fuel gas consisting of green hydrogen, water gas with 50% green hydrogen, nitrogen, hydrogen, and a fermented liquid to be used as an environmentally friendly fertilizer.
WO2024248483A1	Korea Inst Ind Tech (KR)	Water treatment apparatus and water treatment process comprising high-efficiency biohydrogen production using microbial strain activated by magnetite carrier. According to an embodiment of the present invention, provided is a water treatment apparatus comprising a fermentation tank for receiving wastewater containing organic matter and decomposing the organic matter contained in the wastewater to produce hydrogen, wherein the fermentation tank comprises a microbial strain activated by a magnetite carrier. The water treatment process and apparatus according to the present invention can maintain high hydrogen production efficiency regardless of the environment in the fermentation tank, and thus are effective in the industrial production of biohydrogen.
CN118812101A	Sanya Research Institute China Agricultural Univ (CN)	Dark-light two-stage hydrogen production system for treating organic wastewater. The invention discloses a dark-light two-stage hydrogen production system for treating organic wastewater, and relates to the technical field of wastewater treatment. The dark-light two-stage hydrogen production system comprises a dark fermentation reaction zone, a light fermentation reaction zone and a pretreatment zone, a water outlet of the dark fermentation reaction area is communicated with a water inlet of the light fermentation reaction area through the pretreatment area, and a shared air outlet is formed in the tops of the dark fermentation reaction area and the light fermentation reaction area; a water inlet of the first three-phase separator is communicated with a water outlet of the light fermentation reaction area, and a gas outlet of the first three-phase separator is communicated with a gas outlet shared by the dark fermentation reaction area and the light fermentation reaction area; the pretreatment zone can adjust physicochemical properties of products in the dark fermentation reaction zone before entering the light fermentation reaction zone, such as organic acid concentration, pH, ammonia nitrogen concentration and the like, so that the influence of the products in the dark fermentation reaction zone on the hydrogen production efficiency in the light fermentation reaction zone is reduced or even avoided, and the organic wastewater treatment and hydrogen production efficiency is improved.
US2024410064A1	Univ California (US)	Photochemical diodes for unassisted biomass valorization coupled with hydrogen production or carbon dioxide fixation. This disclosure provides systems, methods, and apparatus related to photochemical diodes. In one aspect, a device include a photoanode, a photocathode, and a bipolar membrane between the photoanode and the photocathode. The photoanode comprises a first semiconductor, the first semiconductor being N-type doped, a first catalyst disposed over the first semiconductor, and the photoanode being disposed in an anolyte. The photocathode comprises a second semiconductor, the second semiconductor being P-type doped, a second catalyst disposed over the second semiconductor, and the photocathode being disposed in a catholyte. The photoanode and the photocathode are in electrical contact. A hydrogen reduction reaction or a carbon dioxide reduction reaction occurs at the photocathode and a chemical oxidation reaction occurs at the photoanode when the photocathode and the photoanode are illuminated with light.

Nº Publicación	Solicitante (País)	Contenido técnico
CN118879367A	Univ Central South (CN)	Biomass hydrogen production method based on alkali metal adsorption-separation-electrolysis circulation. The invention discloses a biomass hydrogen production method based on alkali metal adsorption-separation-electrolysis circulation, and the method realizes efficient gasification hydrogen production of biomass through mutual reaction between KOH and each component of the biomass. The method comprises the following steps: impregnating biomass waste powder in a KOH solution, and dehydrating and grinding to obtain a gasified precursor raw material; and then taking a proper amount of gasification raw materials, and gasifying to obtain a hydrogen-rich gas product. According to the invention, based on the catalysis and decarburation effects of potassium element on gasified volatile components of biomass, gasification and purification of biomass are promoted, and hydrogen-rich gas is prepared. The potassium element introduced by potassium hydroxide can significantly increase the content of hydrogen in the biomass gasification gas product, the volume percentage of hydrogen in the gasification gas is significantly increased, and the effects of CO2 removal and carbon material preparation are achieved at the same time. The raw materials are easy to obtain, the proportion of hydrogen in the gasified gas is high, the proportion of the obtained synthesis gas components is adjustable, and the high-value carbon material can be obtained by washing the solid product obtained after the reaction with water.
ES2987147A1	Univ Córdoba (ES)	Use of Microbacterium fakhimi in co-cultures for bioremediation, biomass and hydrogen production. New bacterium within the Microbacterium genus, Microbacterium fakhimi sp. nov., capable of associating with Chlamydomonas, for the sustained production of hydrogen, the obtaining of large quantities of biomass and in bioremediation, specifically of waste from the dairy industry.
CN118754057A	Univ China Petroleum Beijing (CN)	Low-carbon alcohol compound microwave steam reforming hydrogen production process and production system. The invention relates to the technical field of low-carbon alcohol hydrogen production, in particular to a low-carbon alcohol compound microwave steam reforming hydrogen production process and a production system. The hydrogen production process comprises the following steps: mixing a low-carbon alcohol compound, water and a wave-absorbing catalyst, and reacting under a microwave condition to prepare a gas product containing high-concentration hydrogen. The invention provides a low-carbon alcohol compound microwave steam reforming hydrogen production process and a production system. The low-carbon alcohol compound microwave steam reforming hydrogen production process has the characteristics of low temperature, low power and high stability; the catalyst is wide in application range, and especially biomass charcoal and metal carbide catalysts can be generated in situ in a microwave field by precursor oxygen-free heating; meanwhile, in-situ regeneration of the wave-absorbing catalyst is realized by pumping a metal salt solution into a reaction system, so that the service life and the reaction time of the wave-absorbing catalyst are effectively prolonged.
CN118853344A	Univ Henan Agricultural (CN)	Hydrogen and algal protein co-production device based on optical fermentation. The invention discloses a hydrogen and algal protein co-production device based on light fermentation, and relates to the technical field of biological hydrogen production, the hydrogen and algal protein co-production device comprises a hydrogen production substrate premixing unit, the hydrogen production substrate premixing unit comprises a hydrogen production substrate premixing box, the biological hydrogen production reactor comprises a hydrogen production reaction cylinder, the hydrogen production tail liquid recycling unit comprises a hydrogen production tail liquid recycling box, and the hydrogen production tail liquid recycling box comprises a hydrogen production tail liquid recycling box. A top opening of the hydrogen production reaction cylinder is provided with a reaction cylinder top cover, the middle of the reaction cylinder top cover is rotationally connected with a vertical hollow rotating shaft through a tapered roller bearing, the top of the hollow rotating shaft is connected with a hydrogen production substrate premixing box through a hydrogen production substrate conveying assembly, and the peripheral side of the top of the hollow rotating shaft is connected with a rotating power assembly; the bottom end of the hollow rotating shaft is connected with a stirring release assembly. According to the hydrogen and algal protein co-production device based on light fermentation, hydrogen production tail liquid generated after hydrogen production of photosynthetic bacteria is used for culturing chlorella, the protein content of the chlorella is very high, and extra harvest products are added while continuous production of biological hydrogen is guaranteed.

Nº Publicación	Solicitante (País)	Contenido técnico
US2024390873A1	Univ North Carolina State (US)	Multi-functional catalytic sorbents for hydrogen and hydrogen-enriched syngas production from carbon containing feedstock. In one aspect, the disclosure relates to catalytic phase transfer sorbents (PTS) for producing hydrogen-enriched syngas from a carbonaceous feedstock, the PTS comprising a formula selected from ABO_3 and $An+1BnO3n+1$, wherein A comprises one or more alkali metals or alkaline earth metals, wherein B comprises one or more transition metals, and wherein X comprises an anion. Also disclosed is a system for hydrogen generation from carbonaceous feedstocks, the system comprising a gasifier unit for production of H ₂ -rich syngas and a regenerator unit for regeneration of spent PTS. Further disclosed herein is a method for hydrogen generation from carbonaceous feedstocks using the disclosed systems. The disclosed systems can be operated isothermally through 10 or more cycles without degradation in performance, while the disclosed methods can yield 50% or more H ₂ relative to carbon-containing species. In some aspects, the methods produce little to no CO ₂ .
CN118771304A	Xinjiang Qianhai Environmental Protection Tech Co Ltd (CN)	System for preparing carbon monoxide by coupling hydrogen production from plasma splitting water with biomass pyrolysis gas. The invention provides a biomass pyrolysis coupled plasma wet reforming pyrolysis oil gas hydrogen production system. The invention relates to a biomass pyrolysis coupled plasma wet reforming pyrolysis oil gas hydrogen production system, which comprises a pyrolysis system, a reforming system and a hydrogen extraction system, the pyrolysis system is used for pyrolyzing input biomass into pyrolysis oil gas and supplying the pyrolysis oil gas to the reforming system; the reforming system reforms the pyrolysis oil gas into reformed gas based on a plasma reforming technology, and supplies the reformed gas to the hydrogen extraction system; and the hydrogen extraction system cools the reformed gas and then extracts hydrogen in the reformed gas. According to the technical scheme, biomass pyrolysis oil gas is subjected to plasma reforming to produce hydrogen, water vapor in the pyrolysis oil gas is subjected to plasma pyrolysis to produce oxygen and hydrogen, and meanwhile, carbon in the pyrolysis oil gas is used for capturing the oxygen generated by the water vapor subjected to plasma pyrolysis; stable output of hydrogen production through plasma cracking of water vapor is achieved, and meanwhile other raw materials do not need to be input. The source of hydrogen is mainly generated by splitting decomposition of water carried by biomass in the plasma reforming furnace, and the hydrogen yield is high.

Otros biocombustibles (bio-oils, etc.)

Nº Publicación	Solicitante (País)	Contenido técnico
US2024384174A1	Fletcher Raymond Paul (NL)	Process to convert a solid biomass to a crude fuel. The invention is directed to a process to convert a solid biomass to a crude fuel comprising middle distillate fuel fractions, the process comprising: (a) contacting the solid biomass having a water content of below 20 wt % with steam for more than 10 seconds at pressurised conditions to obtain steam saturated biomass and (b) subjecting the steam saturated biomass to a pyrolysis step at a temperature of between 600 and 800° C. to obtain the crude fuel comprising the middle distillate fuel fractions.
WO2024231397A1	Fraunhofer Ges Forschung (DE)	Biofuel from macauba fruits and method of production. A method for producing a biofuel from macauba palm fruits comprises providing from the fruits a kernel fraction having a kernel proportion of at least 75% by mass, based on the dry matter. At least some of the endosperm is removed from the kernel fraction. The endocarp fraction obtained therefrom or a mixture obtained from the endocarp fraction after one or more further processing steps is gasified. The crude gas obtained thereby is purified and further processed to form a synthesis gas for a subsequent catalytic synthesis. In order to produce the biofuel, the synthesis gas is then subjected to a catalytic synthesis suitable for obtaining synthetic fuel.
WO2024213854A1	Totalenergies Onetech (FR)	Method for hydrotreating a composition of natural origin. The present invention relates to a method for hydrotreating a composition of natural origin comprising heteroatoms and lipids, in which the composition of natural origin is subjected to a pretreatment step (A) in order to obtain a pretreated composition having a reduced content of impurities containing heteroatoms which is then sent to a hydrotreating step (B) in which it is brought into contact with dihydrogen in the presence of at least one catalyst to produce high-value-added hydrocarbons, preferably including paraffins, and in particular LPG, jet fuel, naphtha and/or diesel fractions. According to the invention, the pretreatment step (A) comprises a step (A1) in which it is brought into contact with an aqueous solution in order to obtain an organic phase containing the partially refined composition and an aqueous phase comprising impurities and a second step of hydrodemetallization (A2) of the organic phase carried out in the presence of at least one regenerated and/or spent and non-regenerated catalyst.

Nº Publicación	Solicitante (País)	Contenido técnico
CN118850566A	Univ Zhengzhou Light Ind (CN)	Transportation tank body for preparing transportation fuel oil by modifying and upgrading bio-oil. The invention discloses a transportation tank for preparing transportation fuel oil by modifying and upgrading bio-oil, and belongs to the technical field of fuel oil transportation. The transportation tank comprises an oil storage tank, a swash plate used for reducing the shaking amplitude of oil liquid is fixedly installed in an inner cavity of the oil storage tank, and a top cover is fixedly installed at the top of the oil storage tank; one end of the oil storage tank is provided with a circulation mechanism used for cooling gas in an inner cavity of the oil storage tank, and the other end of the oil storage tank is provided with a liquid level mechanism used for displaying the capacity of oil in the inner cavity of the oil storage tank. By arranging the liquid level mechanism, transportation personnel can conveniently know the amount and state of oil liquid in real time, by using a thermometer and a temperature alarm, the transportation personnel can easily monitor the temperature condition of the oil liquid and respond to any abnormal condition in time, transportation interruption caused by too high temperature is reduced, and transportation continuity is ensured; the specific volume of the transported bio-oil and the change of related data are conveniently provided, and modification and quality improvement of the bio-oil are facilitated.
CN118853247A	Zhangjiajie Jinzhao New Energy Tech Co Ltd (CN)	Process for refining excrement into biological fuel oil. The invention relates to a process for refining excrement into biological fuel oil, and belongs to the technical field of biomass liquid fuel production. The process comprises the following specific steps: (1) pressing raw materials into material blocks, and baking the material blocks in an oxygen-free heating furnace to obtain pretreated material blocks; (2) putting the pretreated material block into a pure oxygen continuous gasification furnace, adding a composite catalyst at the same time, and then cooling to obtain gas a and tar; (3) taking tar, adding a cracking catalyst, and then heating to obtain gas b; and (4) introducing the gas a and the gas b into a Fischer-Tropsch synthesis tower to synthesize biofuel gas, and condensing to obtain the biofuel. According to the method, the excrement, the straw and the PET are used as raw materials and jointly improve the gasification efficiency, meanwhile, the gasification efficiency is further improved through the steps of adding the composite catalyst and carrying out catalytic cracking on the tar, and therefore the production efficiency of refining the biological fuel oil from the excrement through the process is high.
CN118995280A	- (CN)	Composite bio-clean fuel, is composed of liquid paraffin oil, biodiesel, alcohol compounds, ether compounds and additives. The invention belongs to the field of fuel technology, and provides a composite bio-clean fuel and a preparation method thereof. The composite bio-clean fuel is composed of the following raw materials in weight percentage: 25-35% of liquid paraffin oil, 8-16% of biodiesel, 25-30% of alcohol compounds, 25-30% of ether compounds and additives. The invention uses a combination of liquid paraffin, alcohol compounds and ether compounds, so that the fuel improves combustion performance, enables the fuel to burn more completely, reduces the situation of insufficient fuel utilization, and also reduces the emission of pollutants, which helps to alleviate environmental pollution problems. At the same time, biodiesel (such as algae oil and palm oil) is renewable, and as a fuel source, it helps to reduce dependence on traditional fossil fuels, thereby reducing carbon emissions and environmental pollution. Through a specific raw material ratio and a preparation method, the fuel ensures uniform mixing of various raw materials and additives, and avoids the problem of excessively high or low local concentrations.
JP2024135636A	- (JP)	The present invention provides a method for properly separating woody biomass into solid fuel and liquid fuel. [Solution] A biomass fuel production device comprising: a rotary kiln that uses heat from an external heating unit to heat woody biomass and decompose it into decomposition gas and solid fuel; an outlet pipe that discharges the decomposition gas generated inside the rotary kiln from the interior; and a recovery device that cools the decomposition gas discharged from the interior to produce liquid fuel, wherein the gas outlet of the outlet pipe is positioned in a position corresponding to the heating area by the heating unit without coming into contact with the inner wall of the rotary kiln.

PATENTES BIOPRODUCTOS

Biomateriales (de construcción, medicina, embalaje, etc.)		
Biocomposites y biofibras		
Nº Publicación	Solicitante (País)	Contenido técnico
WO2024258405A1	Ahlstrom OYJ (FI)	A wallcover and a method of producing the same. According to an example aspect of the present invention, there is provided a wallcover comprising a nonwoven substrate layer with a backing layer and an intermediate layer, disposed on one side of the backing layer, and a coating layer disposed on the intermediate layer. The backing layer comprises a mixture of cellulose fibers and coarse synthetic fibers. The invention also relates to a method of producing wall coverings. The invention provides environmentally friendly wallcovers, which may be produced in a single process phase without multiple manufacturing steps.
EP4467574A1	Biomol Med SP ZOO (PL)	Technology of maintaining fiber from wheat bran. The method of obtaining fiber according to the invention is characterized by cleaning of wheat bran from environmental pollutants, inhibiting the ability to complex bioelements through phytates, and obtaining resistant starches.
WO2024231369A1	Borealis AG (AT)	Composite material containing cellulose fibers and having high impact strength. A composite material is provided being obtainable by blending the components (a) to (g), and optionally component (h): (a) from 10.0 to 35.0 wt.-% of a first heterophasic propylene-ethylene copolymer (HECO1), (b) from 5.0 to 25.0 wt.-% of a second heterophasic propylene-ethylene copolymer (HECO2), (c) from 8.0 to 40.0 wt.-% of a mixed-plastic polypropylene blend; (d) from 8.0 to 18.0 wt.-% of an ethylene-based elastomer, (e) from 5.0 to 30.0 wt.-% of cellulose-containing fibers, (f) from 1.0 to 5.0 wt.-% of a compatibilizer, (g) from 0.1 to 5.0 wt.-% of additives, (h) optionally from 0.1 to 15.0 wt.-% of a high density polyethylene, wherein the weight amounts of components (a) to (h) are defined relative to the total weight of the composite material. Further, an injection molded article is provided comprising the composite material.
EP4480671A1	B&T Entw und Vermarktungs-gesellschaft mbH (DE)	Method for manufacturing an ecological product from dry placed fibers. The method for manufacturing a product, the method comprising- providing a stock (110) of a first material (11), the first material (11), in the stock, constituting a sheet material forming a first layer comprising a watersoluble polymer material,- producing a blank structure (10) comprising superimposing the first layer and a third layer and, between the first layer and the third layer, a second layer, the second layer comprising, in particular at at least 50% by weight, more particularly at at least 75% by weight, a fibrous material obtained from dry placed fibers;- shaping the blank structure (10) in a molding step.
WO2024236274A1	CQ Studio Ltd (GB)	Material and method for forming a material. A method for producing dyed materials for use in fashion and other industries. The method involves mixing chitosan with a dye-containing liquid, separating a liquid portion of the mixture to form a liquid having an enriched proportion of chitosan and subsequently drying the enriched portion to yield a dyed material. This provides a sustainable method of producing biodegradable dyed materials and recycling dye-containing wastewater.
EP4470985A1	Inst Politecnico de Leiria (PT)	Compositions and composite materials comprising geopolymer and agro-industrial waste and use thereof. The present disclosure is directed to compositions comprising a geopolymer and a waste material at a weight per weight (w/w) ratio from 20:1 to 4:1, respectively, wherein the geopolymer comprises fly ash, preferably from biomass, metakaolin, an alkali metal silicate, and an alkali metal hydroxide, and the waste material comprises agricultural waste, plant waste, vegetable waste, or a combination thereof, and composite material comprising thereof. Further, use of compositions and composite materials in construction sector, automotive industry, packaging industry, ceramics, or any combination thereof, preferably in coatings, are also provided.
WO2024200756A1	Modern Synthesis Ltd (GB)	Nanocellulose-based hybrid materials. The invention provides a sustainable alternative nanocellulose-based hybrid material having improved strength and flexibility compared to known biopolymers and leather alternatives. The invention further provides methods of producing the nanocellulose-based hybrid material.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024254663A1	Suzano SA et al. (BR)	Process for preparing a thermoplastic composite of cellulose pulp modified by reactive extrusion with anhydrides, and thermoplastic composite. The present invention aims to provide a process for preparing a thermoplastic composite from cellulose pulp modified by reactive extrusion with anhydrides, and a thermoplastic composite prepared by means of said process. The process is used to modify cellulose in the form of chemical pulp, microfibrillated cellulose (MFC) or nanofibrillated cellulose (NFC) by means of reactive extrusion (REX) in the presence of an aprotic solvent with the ability to swell the cellulose, for subsequent use of the product obtained as a reinforcement in composites with thermoplastic resin.
WO2024236388A1	Unilin BV (BE)	Decorative panel and method to make such decorative panel. Method for producing a decorative panel (1), wherein the method comprises the steps of - providing a first set of lignocellulosic particles (5) - e.g. fibers, chips, shives or flour-, wherein the lignocellulosic particles (5) of the first set of lignocellulosic particles have a first color; - providing a second set of lignocellulosic particles (6) - e.g. fibers, chips, shives or flour-, wherein the lignocellulosic particles (6) of the second set of lignocellulosic particles have a second color; wherein the first color differs from the second color; - scattering or depositing the first set of lignocellulosic particles; and scattering or depositing the second set of lignocellulosic particles; - consolidating the first set of lignocellulosic particles and the second set of lignocellulosic particles using a binder thereby obtaining a decorative particulate layer (2) of at least 0.5 mm thick, preferably at least 1 mm thick, and preferably at least 3 mm thick.
WO2024220021A1	Vaelinge Innovation AB (SE)	Building panel with a mechanical locking device and a method of producing such building panel. A building panel (10), such as a floor panel, or wall panel, having a multi-layered substrate including a back side layer comprising lignocellulosic particles and a binder, an intermediate layer comprising lignocellulosic particles and a binder which is arranged on the back side layer, and a front side layer comprising lignocellulosic particles and a binder, and which is arranged on the intermediate layer. The back side layer was formed from a first mixture, the intermediate layer was formed from a second mixture and the front side layer was formed from a third mixture. The building panel (10) further has a mechanical locking device (30a; 30b) arranged along at least one edge portion (25, 26, 27, 28) of the building panel where the mechanical locking device (30a; 30b) is configured for horizontal and/or vertical locking of similar or essentially identical building panels (10, 10', 10'') in an assembled position.

Bioplásticos

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024258377A1	Atalay Merve (TR)	A method for the production of bioplastics from apricot kernel shell powder and a bioplastic obtained with this method. The invention relates to a method for the production of bioplastics from apricot kernel shell powder and to a bioplastic obtained with this method, suitable for use in various technical fields.
EP4442765A1	BPR Lab Bio Plastik AS (TR)	Biodegradable plastic composite material modified with coffee grounds. The present invention relates to a fire resistant biodegradable plastic composite material and addresses the critical issue of plastic pollution and the growing need for environmentally conscious solutions. The present invention also relates to the process for producing a fire-resistant biodegradable plastic composite material as well as its use for producing a fire-resistant plastic product. In particular, the present invention provides an optimal blend of waste coffee grounds and polylactic acid in order to produce a sustainable plastic material having improved properties.
EP4438725A1	Carbios (FR)	Novel proteases and uses thereof. The present invention relates to novel proteases, more particularly to protease variants having improved activity compared to the protease of SEQ ID N°1 and the uses thereof for degrading polyester containing material, such as plastic products. The proteases of the invention are particularly suited to degrade polylactic acid, and material containing polylactic acid.
WO2024262896A1	CJ Cheiljedang Corp (KR)	Novel acetoacetyl-coa reductase variant and use thereof. The present application relates to: a novel protein having an acetoacetyl-CoA reductase activity; a polynucleotide encoding the protein; a microorganism, which comprises the protein, the polynucleotide encoding the protein, or a vector comprising the polynucleotide; and a method for producing polyhydroxyalkanoate (PHA), comprising a step of culturing the microorganism in a medium.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024214773A1	Daicel Corp (JP)	Polylactic acid modifier, polylactic acid resin composition, and method for producing molded article. The objective of the present invention is to provide a polylactic acid modifier that can improve flexibility and crystallinity with a single additive and that can produce a polylactic acid resin composition excellent in production efficiency. The polylactic acid modifier according to the present disclosure is characterized by comprising at least structural units derived from either L-type or D-type polylactic acid and structural units derived from a polyol, and being a triblock copolymer of polylactic acid/polyol/polylactic acid. Furthermore, the polylactic acid modifier preferably has an average particle size of 0.5 μm in diameter or more, and the polyol is preferably polycaprolactone.
WO2024264043A1	Danimer Ipco LLC (US)	Production of PHA using petroleum by-products. The present disclosure provides a method for producing a poly(hydroxyalkanoate) by fermenting a petroleum-derived carbon source with biomass. The petroleum-derived carbon source is made up of: (1) a mixture of petroleum fractions, wherein at least 90 weight percent of the petroleum fractions have a boiling point of 400°C or greater, or (2) at least 5 weight percent of at least one polycyclic aromatic compound.
WO2024241257A1	Univ Degli Studi di Milano Bicocca et al. (IT)	Method for the preparation of keratin-containing material with improved properties via "grafting from" polymerization and the obtained keratin-containing material. The present invention relates to a method of processing keratin extracted from keratin-rich waste, particularly originating from wool and/or feathers biomass, and turning it into bioplastic materials by chemical modification, namely by using the "grafting from" chemistry polymerization. The method for the preparation of a keratin-based material of the present invention comprises the following steps: a) obtaining keratin micro- and/or nanoparticles from a keratin-rich waste; b) grafting the keratin micro- and/or nanoparticles via the "grafting from" polymerization, with at least one monomer capable of ring opening polymerization and in presence of a catalyst; and c) obtaining a keratin-based material. The keratin-based material obtainable according to the method above described, preferably a film or a composite film, is also an object of the invention.
EP4450632A2	Univ Nova de Lisboa (PT)	Method for the production of polyhydroxyalkanoates using phototrophic mixed cultures and CO₂ as carbon source. Methods for production of polyhydroxyalkanoate (PHA) are disclosed. The present disclosure is directed to a method for production of PHA, the method comprising: adding to a microbial culture comprising at least one phototrophic microorganism, a feedstock comprising at least one inorganic carbon compound selected from carbon dioxide, carbonic acid, carbonate and bicarbonate and at least one electron donor, wherein the adding is performed continuously or discontinuously, under non-sterile anaerobic conditions and in the presence of infrared radiation.
WO2024236121A1	Univ Wageningen (NL)	Process for the production of polyhydroxyalkanoate. The present invention relates to a process for the production of polyhydroxyalkanoate (PHA), the process comprising the steps of: - introducing a gas composition comprising CO into a bioreactor comprising a PHA-producing microorganism capable of fermenting CO, an acetogenic microorganism and a culture medium; - anaerobic conversion of CO into H ₂ and CO ₂ by the PHA-producing microorganism capable of fermenting CO; - anaerobic conversion of CO ₂ and H ₂ into acetate, and optionally additional fermentation products, by the acetogenic microorganism; - anaerobic conversion of acetate, and optionally additional fermentation products, into PHA by the PHA-producing microorganism capable of fermenting CO. The invention further relates to PHA obtainable by the process according to the invention.
WO2024223865A1	Upcycle Holding BV (NL)	Single-use products. The present invention concerns single-use products made from composite materials, processes of making the single use products as well as pre-mixes that may be employed in such processes. The present inventors have developed a composite material comprising a combination of non-wood lignocellulosic material and a biodegradable and/or compostable polyester, preferably polyhydroxyalkanoate. These composites can be processed into shaped articles, such as cups, plates, straws, cutlery, etc. that possess functional properties adequate to replace conventional SLIPs produced from petrochemical based plastics. The lignocellulosic material can be sourced as a by-product from agricultural food production. Production of the present composite materials and processing it into shaped (single use) articles is straight forward, can be carried out using conventional machinery, consumes relatively low amounts of energy, chemicals and/or water.

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

Biofertilizantes, bioadhesivos, etc.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024238725A1	Cargill Inc (US)	Water soluble dextrin adhesives. Dextrin powders and one or more rheology modifiers are combined to form a powdered adhesive mixture. The powdered mixtures are dispersed in water to generate adhesive compositions. The dispersion of the powdered mixtures in water can be conducted under high shear conditions and/or low shear conditions. The adhesive compositions have a smooth texture and short structure. The adhesive compositions have the desired viscosity and a long shelf-life for use in a paper bag seam.
WO2024203597A1	DKS Co Ltd (JP)	Adhesive and article using same. Provided is an adhesive to be used for purposes that involve water absorption and detachment after adhesion. An adhesive according to an embodiment is used for purposes that involve water absorption and detachment after adhesion, wherein the adhesive contains (A) a water-based resin and (B) cellulose fibers and the cellulose fibers are contained in a quantity of 0.1-10 mass parts per 100 mass parts of the water-based resin.
EP4467304A1	Evertree (FR)	Adhesive composition comprising ground pea seeds, animal albumin and an amine-based azetidinium-functional cross-linker. The invention relates to an aqueous adhesive composition comprising:- ground pea seeds comprising between 5 wt% and 40 wt% of crude proteins on the total weight of the ground pea seeds,- animal albumin, and- an amine-based azetidinium-functional cross-linker.The invention also relates to a lignocellulosic-based article and its preparation process using said adhesive composition.
WO2024234112A1	Felipe Antonio Bruna Gonzalez (CL)	Production of storable biofertiliser of non-recyclable animal-based organic material. The present invention relates to a method for producing a biofertiliser by using a process of physically, not chemically, converting non-recyclable animal-based organic material, using a process of dehydrating the non-recyclable animal-based organic material artificially combined with environmentally-friendly mineral and/or organic hygroscopic additives with slow release of its nutrients to the topsoil.
WO2024220451A1	Setatech USA Inc (US)	Agricultural compositions and related methods. Agricultural compositions are provided that at least one keratin protein isolated from at least one feather, at least one keratin protein isolated from human hair, and at least one carrier. The agricultural compositions provide an environmentally friendly and biodegradable alternative to traditional chemicals and biologicals. The agricultural compositions are suitable for a variety of uses including, but not limited to, increasing plant height and biomass, increasing plant, leaf, increasing stem and root weight, and increasing crop or plant yield compared to application of traditional chemicals or plant growth regulators.
WO2024239083A1	Suzano SA (BR)	Method for obtaining lignin dispersion, lignin dispersion, use of the lignin dispersion, phenolic resin composition with lignin, and use of the phenolic resin composition with lignin. The present invention aims to provide a method for obtaining lignin dispersion, which directly replaces phenolic resins with lignin in a phenolic resin mixture, while also providing phenolic resin compositions with lignin having suitable physical and chemical properties for application as an adhesive in the bonding of different wood substrates or as a binder.
WO2024227146A2	Tufts College (US)	Silk-based adhesive platform for footwear and fashion. Silk-based adhesives are made by dehydrating a silk fibroin solution including a chaotropic salt concentration, the adhesive including a non-water mixture and residual moisture, the non-water mixture including the silk fibroin and the chaotropic salt, the dehydrating inhibiting transitions to beta sheet secondary structure and providing one or more of the following properties: i) a predetermined viscosity or ii) a predetermined adhesive strength.
WO2024234111A1	Univ Vina del Mar (CL)	Plant biostimulant formulation, process for producing the same and method for improving plant growth and development. The invention relates to a plant biostimulant formulation that comprises enzymatic hydrolysates of ground poultry manure and biomass of <i>Ulva</i> sp., a process for producing the formulation, and a method for improving plant growth and development that comprises applying the formulation.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024227968A1	UPM Kymmene Corp (FI)	A binder composition, a method for producing a binder composition, its use, and an insulating wool product. A method for producing a binder composition is disclosed. The method comprises: i) polymerizing crosslinking agent and polymerizable substance in an aqueous composition by mixing and heating at a temperature of 60 – 95 °C for preparing a pre-composition, wherein at least 30 weight-% of the polymerizable substance originates from lignin, and ii) mixing the pre-composition with silane, wherein silane is used in an amount of 0.1 – 0.9 weight-% based on the total dry weight of the binder composition, to form a binder composition having a free formaldehyde content of at most 0.5 %.
EP4461758A1	Vito NV et al. (BE)	Reversible lignin adhesive. The present invention relates to a reversible adhesive, and in particular provides a reversible adhesive comprising a Diels-Alder polymer of at least a polymaleimide pre-polymer and a furanfunctionalized lignin-derived compound, having a glass transition temperature of at least - 20 °C. The present invention further relates to a method for preparing the reversible adhesive, and the use of the reversible adhesive to bond materials in a reversible fashion.

Biocosméticos, Biofarmacéuticos

Nº Publicación	Solicitante (País)	Contenido técnico
EP4472649A1	AGS Therapeutics SAS (FR)	Extracellular vesicles from microalgae, their biodistribution upon administration, and uses. Provided are compositions containing extracellular vesicles from microalgae (MEVs) that are loaded with bioactive cargo. The MEVs are formulated and administered by a variety of routes of administration and have a variety of applications as therapeutics, including as vaccines, as anti-cancer therapeutics, as therapeutics for psychiatric diseases, disorders, and conditions, and as diagnostics, and other such uses.
WO2024200510A1	Algaktiv SL (ES)	Haematococcus extract skin care composition. The invention relates to a combination comprising Haematococcus pluvialis microalgae extract containing polyamines such as spermidine and collagen amino acids and the hyaluronic acid. The invention relates to the field of cosmetics products and uses thereof in cosmetic methods as well as in the preparation of, cosmeceutical or pharmaceutical composition.
EP4442267A1	Diacure GmbH (DE)	Medicinal plant compositions / nutraceutical for treating diabetes patients. The present invention relates to a composition comprising a) Momordica Charantia extract, b) Syzygium Cumini extract, c) Swertia Chirayita extract, d) Trigonella Foenum-Graecum extract, e) Gymnema Sylvestre extract, f) Phyllanthus Emblica extract, g) Neopicrorhiza Scrophulariiflora extract and/or Picrorhiza Kurroa extract, h) Curcuma longa extract, i) Cinnamomum Verum extract, j) Piper Nigrum extract and optionally k) Fruit mixture extract, wherein the fruit mixture comprises apple, pear and plum. Furthermore, the present invention relates to the compositions of the present invention for use in the treatment and/or prevention of diabetes.
WO2024221074A1	Dsbio Ltda (BR)	Process for producing natural biomimetic blends comprising an association of distinct active vegetable ingredients extracted from the same species of medicinal, aromatic, condimentary, or nutraceutical plant. The present invention focuses on an optimized process for the production of Natural Biomimetic Blends, made from the association or mixture of selective inputs from the same medicinal plant, constituting an Input Booster. Said optimization occurs, initially, by the selection of inputs based on the synchronic principles of the nature of polarity and metabolomics of their bioactive constituents, taking into account the way in which such inputs interact with each other (Intra- interaction), which can such interaction be of the synergistic type or of the interactive/integrative type. This results in an Intelligent System with a multifactorial and biodynamic therapeutic strategy, applicable to the pharmaceutical, cosmetic, biotechnology, food and agrochemical industries.
WO2024200171A1	Firmenich & Cie (CH)	Microparticles containing algal proteins and uses thereof. The present disclosure relates generally to microparticles containing algal proteins and their use in various applications. In some embodiments, the microparticles are precipitates. In some other embodiments, the microparticles are coacervates. In some embodiments, the microparticles are core-shell microcapsules having a hydrophobic core material encapsulated by a shell that contains an algal protein. In some embodiments, the hydrophobic core material comprises a flavor oil, a fragrance oil, or a combination thereof. In certain aspects, the disclosure provides the use of such microparticles to improve the texture, mouthfeel, perceived fattiness, or perceived creaminess of a comestible article. In some embodiments, the comestible article is a vegan dairy product, a vegan meat product, or a vegan seafood product. In certain aspects, the disclosure provides the use of the microparticles to provide a fragrance to a fragranced product, such as a personal care product, a laundry product, or a cosmetic product.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024213741A1	Lucas Meyer Cosmetics et al. (FR)	Emulsifying agent based on lignin fraction and uses thereof. The application relates to an emulsifying agent comprising a lignin fraction and its use to prepare emulsions. The application also relates to cosmetic products comprising such an emulsifying agent and methods for preparing the same.
WO2024209443A1	Neilos SRL (IT)	Nutraceutical or pharmaceutical composition comprising bromelain. The present invention relates to a composition of substances, preferably obtained from natural sources, that is effective in the prevention and/or treatment of inflammatory diseases. The composition of the invention comprises bromelain, phosphatidyl serine, phosphatidylcholine and starch. The composition may optionally comprise hydroxypropylcellulose. This formulation gives the composition gastroresistance properties, increased permeability across membranes, controlled release and high bioavailability of the bromelain active ingredient. The composition of the invention is prepared in solid, semi-solid or liquid pharmaceutical dosage form, preferably for oral administration.
EP4442122A1	ODC Lizenz AG (CH)	Cocoa extraction methods and extracts obtained by the same. A method for obtaining extracts from cocoa fruit constituents is described, which comprises the steps of: a) subjecting cocoa fruit constituents to wet grinding in a polar solvent and separating a liquid phase from the wet ground mixture to obtain a hydrophilic extract; b) optionally separating residual solids from the hydrophilic extract; c) adsorbing the hydrophilic extract on a non-ionic macroporous resin; d) desorbing the hydrophilic extract from the non-ionic macroporous resin with a water-miscible organic solvent to obtain a polyphenolic extract; and e) concentrating the polyphenolic extract to obtain a polyphenolic concentrate. In further aspects, extracts obtained by the aforementioned process and food compositions, food supplements, medical compositions or cosmetic compositions comprising the aforementioned extracts are described.
WO2024219512A1	Oreal (FR) et al.	Composition comprising chitosan and salicylic acid or derivatives thereof. The present invention relates to a composition comprising: (a) at least one cationic polymer selected from chitosans; (b) at least one compound selected from salicylic acid and derivatives thereof; (c) water; and (d) oil, wherein the composition comprises no surfactant or at least one surfactant in an amount of 1% by weight or less, preferably 0.1% by weight or less, and more preferably 0.01% by weight or less, relative to the total weight of the composition. The composition according to the present invention includes oil and water, but is stable, and can include at least one environmentally-friendly ingredient, although the composition includes no surfactant or a little amount of surfactant(s).
WO2024238869A1	Procter & Gamble (US)	Skin care serum composition with natural polymers. A physically stable, uniform, skin care serum composition that contains a polymer system, a skin care active, and a liquid carrier. The polymer system includes microcrystalline cellulose, Sphingomonas ferment extract, and cellulose gum.

Bioaditivos alimentarios y nutracéuticos

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024242047A1	Amano Enzyme Inc (JP)	Method for producing glycosylated steviol glycoside composition. Provided is a novel technique for improving the taste of a glycosylated steviol glycoside composition. The present technique provides: a method for producing a glycosylated steviol glycoside composition, the method including a step for causing cyclodextrin glucanotransferase derived from a microorganism belonging to the genus Anoxybacillus to act on a stevia extract and dextrin; and a method for improving the taste of a glycosylated steviol glycoside composition. In the production method and taste improvement method according to the present technique, it is possible to additionally carry out a step for causing a saccharide-processing enzyme that is different from the cyclodextrin glucanotransferase derived from a microorganism belonging to the genus Anoxybacillus to act.
WO2024204699A1	Asahi Chemical Ind (JP)	Cellulose powder and molded body. The present invention provides: a cellulose powder which exhibits less variability in mass and has excellent hardness and friability while maintaining fine disintegrability, and from which a more small-sized molded body can be obtained without changing amounts of active ingredients of drugs and the like; and a molded body using the cellulose powder. The present invention provides: a cellulose powder in which the ratio Y (Cv/D50) of the water absorption rate Cv with respect to the mean particle diameter D50 is 0.12 g ² /(s·µm) or more and the aerated bulk density X is 0.135 g/cm ³ or less, or a cellulose powder in which the relationship between the aerated bulk density X and the ratio Y (Cv/D50) of the water absorption rate Cv with respect to the mean particle diameter D50 satisfies formula (1-1) [Y ≥ 1.5×X-0.06]; and a molded body including one or more active ingredients and either one of said cellulose powders.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024221116A1	Botaneco Inc (CA)	Sunflower oleosome- and protein-containing compositions for use in nutritional formulations. Disclosed are oleosome preparations and protein preparations from sunflower plant material. The oleosome preparations are low protein preparations containing no more than 3% (w/w) protein on dry basis (low-protein oleosome preparations), high protein preparations containing at least 4% (w/w) protein on dry basis (high-protein oleosome preparations), or oleosome preparations having from about 2% (w/w) to about 5% (w/w) on dry basis, and having other advantageous properties in respect of dry weight, lipid to protein ratio content, and/or particle size. The oleosome preparations from sunflower plants are suitable for use as ingredients in nutritional formulations. There are also disclosed methods for preparing the sunflower oleosome preparations and protein preparations.
WO2024242887A1	Cargill Inc (US)	Food colourant replacer composition, food composition comprising it and method of preparation thereof. The present disclosure provides a food colorant replacer composition. The food replacer composition can include from 0.5 wt. % to 2.5 wt. % food starch obtained by n-octenyl succinic anhydride esterification of starch isolated from waxy maize and from 0.10 wt. % to 0.76 wt. % calcium carbonate. In various aspects, the food replacer composition can impart a whitening effect to a food product. Other aspects are also provided herein.
WO2024205949A2	Gallo Winery E&J (US)	Grape seed extracts and related systems and methods of manufacture. Grape seed extract compositions and related systems and methods for manufacture are provided. The methods can include obtaining a grape seed extract source material; filtering the grape seed extract source material to obtain a first retentate and a first permeate; drying the first retentate to obtain a first grape seed extract having a first mean degree of polymerization; filtering the first permeate to obtain a second retentate and a second permeate; drying the second retentate to obtain a second grape seed extract having a second mean degree of polymerization less than the first mean degree of polymerization; purifying the second permeate to obtain a purified liquid; and drying the purified liquid to obtain a third grape seed extract having a third mean degree of polymerization less than the second mean degree of polymerization.
WO2024253180A1	Meiji Co Ltd (JP)	Method for producing exopolysaccharide, and use of same. The present invention provides a simpler and food-applicable means for increasing the production amount of an exopolysaccharide. Provided is a method for producing an exopolysaccharide, the method comprising a step for treating an exopolysaccharide-producing bacterium under conditions for lengthening the induction period by 10% or more, and culturing the treated exopolysaccharide-producing bacterium in a culture medium to produce the exopolysaccharide. The present invention provides a composition including a lactic acid bacterium that is any of: a bacterium belonging to <i>Lactobacillus delbrueckii</i> having an exopolysaccharide production capacity of 30 mg/kg or more; a bacterium belonging to <i>Streptococcus thermophilus</i> having an exopolysaccharide production capacity of 69 mg/kg or more; and a bacterium belonging to <i>Bifidobacterium breve</i> having an exopolysaccharide production capacity of 4.2 mg/kg or more.
WO2024206310A1	Sugar License LLC (US)	Healthy sweetener. Food and/or beverage additives are generally provided. In some embodiments, the additive comprises a sweetener (e.g., a healthy sweetener). The additives and/or sweeteners described herein may be useful when added a food and/or beverage e.g., to increase the sweetness of a food and/or beverage. In some embodiments, the additives and/or sweeteners may advantageously be used to reduce the sugar and/or caloric content of a food and/or beverage e.g., as compared to the food and/or beverage without the additive and/or sweetener or containing conventional sweeteners. Advantageously, the additives comprising the sweeteners described herein may be useful for providing a food and/or beverage having a relatively low glycemic index and/or a relatively low number of calories per serving.
WO2024223991A1	Teknologian Tutkimuskeskus VTT OY (FI)	A food-grade mixture, a food product, and use thereof. A food-grade mixture including, based on the total dry weight of the mixture, 5-50 wt-% cultured plant cells of red pigment producing cell line(s) and/or red pigmented yeast(s), and 50-95 wt-% fungal mycelium or mycelia is provided herein. Further, use of the mixture in a food product, as well as use of the mixture or the food product as a meat substitute is disclosed.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024227266A1	Univ Andres Bello (CL)	Microencapsulated natural preservative and antioxidant for fatty foods, with walnut husk and walnut tree leaf extract. The invention relates to a method for producing a microencapsulated natural preservative and antioxidant that comprises a walnut tree leaf and husk extract, the obtained preservative, and the use thereof for preserving foods containing fats. The natural preservative is specifically a hydroalcoholic walnut husk and/or walnut tree leaf extract, which is microencapsulated with a hydrosoluble polymer (HSP), such as maltodextrin or inulin, and wherein the microparticle comprises channelling agents, which are liposoluble polymers (LSP), such as soy protein isolate or Capsul. These microparticles provide controlled release action of the antioxidant and preservative extract, which allows action to take place over time.
WO2024201327A1	Vivatis Pharma GmbH (DE)	Novel combinations comprising konjac mannan, their compositions and uses thereof. The present invention relates to novel solid fast dissolving or fast dispersing combinations containing Konjac glucomannan, to processes for preparing drinkable compositions comprising them, to drinkable compositions comprising them and to their use as a food supplement/beverage supplement in particular, but not limited to, in the managing of weight loss or overweight reduction, and in cholesterol and blood sugar levels control in a subject in need.

Bioproductos alimenticios para animales

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024246881A1	Badan Riset Dan Inovasi Nasional Brin (ID)	Method for producing fish feed from sugarcane bagasse flour containing the TS2b bacterial enzyme and its products. This invention explains the production process of sugarcane bagasse flour through an enzymatic hydrolysis process using the TS2b bacterial enzyme extract to produce raw material for freshwater fish feed. The method in this invention consists of the following steps: drying the sugarcane bagasse, cutting, milling, and sifting it. Then, it is mixed with a NaOH solution, autoclaved, washed, and dried. Next, it is mixed with the TS2b bacterial enzyme extract and incubated. The mixture is heated and dried to obtain the sugarcane bagasse flour as the end product. The sugarcane bagasse flour has the following nutrient composition: 19.28% of protein, 1.23% of fat, 7.07% of ash, 12.59% of crude fibre, and 59.83% of nitrogen-free extract. It contains 410.27 mg/L of soluble protein, 210.45 mg/L of total sugar, 423.47 mg/l of reducing sugar, a degree of polymerization of 0.49, and lignin of 2.97%.
ES2983882A1	Bioteconologia Andaluza 2023 SL (ES)	Procedure for processing olive alperujo and processed olive alperujo obtained by said procedure. The invention relates to the process for transforming olive oil from the olive oil industry, by means of a mechanical dehydration treatment to separate the solid phase, and a chemical treatment by mixing said phase with an ammonia solution to obtain a transformed olive oil. The transformed olive oil obtained has reducing sugars and a balanced C/N ratio, a source of nutritional contribution. It should be noted that the main application of the obtained olive oil is for use in feeding insects, as fodder, by putting them in contact with, preferably, black soldier fly larvae.
WO2024243192A1	Cargill Inc (US)	Fiber phospholipid compositions for poultry and methods of making the same. Fiber energy compositions are described with one or more fibers and one or more gums. The fiber(s) and the gum(s) are extruded to form an extrudate. The process for making the extrudate is described. The extruded product is included in poultry feed to provide an enriched poultry feed. Fiber energy composition with soybean hulls and soybean gum is described. Animal feed supplemented with the soy fiber/soy gum are used in a method for feeding poultry.
WO2024215042A1	CJ Cheiljedang Corp (KR)	Core-shell structured lysine granule. The present application relates to a core-shell structured lysine granule and a preparation method therefor, the core-shell structured lysine granule comprising: a core comprising lysine; and a shell, which is provided on the surface of the core and comprises lysine hydrate. According to the present application, since a lysine hydrate shell is provided on the surface of a lysine granule and the lysine hydrate shell has low hygroscopicity, the deliquescence or agglomeration of lysine granules, which is caused by moisture, can be reduced.
EP4449877A1	Hipromine SA (PL)	Liquefied feed material from hermetia illucens. The invention relates to a method for producing a liquefied feed material obtained from the larvae of insects belonging to Hermetia illucens species on a technological line, to the liquefied feed material obtained from insect larvae and produced by this method, and to its use in production of food for companion animals, especially for dogs and cats.
WO2024238681A1	ICM Inc et al. (US)	Feed product and method of making. Various aspects disclosed relate to a feed product including less than 25 wt% crude protein; less than 10 wt% starch; greater than 7 wt% glycerin; and greater than 35 wt% neutral detergent fiber.

Nº Publicación	Solicitante (País)	Contenido técnico
WO2024250082A1	Inova Agrovetechn Ltda (BR)	Food supplement containing rosin resin acids. The present invention patent relates to a food supplement that comprises a composition of resin acids extracted from the rosin of pines comprising more than 80% (p/p) of resin acids for use in preventing growth of pathogenic microorganisms in the digestive tract of animals, and in modulating the population of microorganisms for intestinal eubiosis, health and well-being of the animal, wherein the invention can be used as a food supplement for all species of livestock and pets. The present invention can be produced in three forms, i.e. basic liquid (pH between 8 and 9), acidic liquid (pH between 5 and 6) and acidic solid. To obtain the basic liquid form, 21% ground rosin, 2% KOH - potassium hydroxide and 77% demineralized water are used and the pine rosin must be ground to 3 mm; these components are mixed in a decantation tank, allowed to rest for a period of 24 hours, and heated until the total volume reduces by 30%. To obtain the acidic form, 50% ground rosin and 50% grain alcohol are used and the pine rosin must be ground to 3 mm; these components are mixed in a decantation tank and allowed to rest for a period of 24 hours. To obtain the solid form, 50% ground rosin and 50% ultrafine calcitic limestone are used and the pine rosin must be ground to 3 mm; the two components are mixed in a "Y"-type mixer.
WO2024211332A1	Mars inc (US)	Low fat hypoallergenic food composition for companion animals. The present disclosure provides a low fat hypoallergenic nutritionally complete food composition for a companion animal including from about 50 to about 80 g/Mcal of proteins, said proteins comprising at least about 80% of hydrolysed proteins, from about 120 to about 180 g/Mcal of starch, said starch being from at least one rice source, from about 10 to about 30 g/Mcal of Total Dietary Fibers (TDF), and less than about 25 g/Mcal of fat. The composition can be used for companion animals affected with adverse food reactions (AFR), such as concomitant hyperlipidaemia, lymphangiectasia or any form of fat intolerance, fat malabsorption, and/or nutritional support of chronic enteropathies.
WO2024210758A1	Planktonic AS (NO)	Feed for larvae of aquatic animals. The present invention relates to a feed for aquatic animals, comprising preserved eggs and/or trochophores of Bivalvia. The invention further relates to use of preserved eggs and/or trochophores of Bivalvia as feed for aquatic animal consumption, wherein the feed is given to the farmed aquatic animal from 0 to 10 days after hatch. The invention further relates to a method for harvesting eggs from Bivalvia, comprising steps for - arranging living Bivalvia in water in a container, - stressing and/or triggering the Bivalvia to release eggs, and - separating the eggs from the water. The invention further relates to a method for preserving eggs and/or trochophores of Bivalvia, comprising the following steps: - heating seawater to 50-100 degrees Celsius, - adding eggs and/or trochophores to seawater, - keeping the eggs and/or trochophores in the water for 1-60 seconds, and - separating water from eggs and/or trochophores.
EP4473841A1	Traceless Mat GmbH (DE)	Process for producing an animal feed. A process for producing an animal feed from a protein source containing prolamin, comprising the steps of a first washing of the protein source containing prolamin with a first solvent, at least a second washing with a second solvent, thereby obtaining a solid phase as the animal feed and at least two liquid phases. The at least two liquid phases together comprise at least 22% of initial glutamic acid, at least 22% of initial proline, at most 60% of initial lysin and at least 20% of initial mycotoxins.

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