Fundación OPTI

SECTOR BIOMASA

VT

BOLETÍN ON-LINE

4

vigilancia tecnológica

4º trimestre 2011

Biogás industrial: tecnología madura con severas dificultades para su implantación

El Plan de Energías Renovables 2011-2020 prevé un considerable aumento de las plantas de biogás industrial durante los próximos años en España. De los 2600 GWh/año que se esperan producir en 2020, 1728 procederán de deyecciones ganaderas y otros residuos agroindustriales, el resto se obtendrá a partir de residuos de vertederos, residuos sólidos urbanos y lodos de depuradoras de aguas residuales.

El jefe del Departamento de Biomasa y Residuos del IDAE, durante la presentación del PER 2011-2020 en Diciembre de 2011, explicó que se trata de una tecnología madura que se ha implantado poco a nivel industrial debido a las barreras existentes, entre otras, mencionó la problemática asociada a la gestión del digestato, la complejidad de la obtención de los permisos administrativos y la evacuación de la electricidad generada o la ausencia continuada de incentivos económicos de origen no energético que reconozcan los impactos medioambientales positivos que tiene la digestión anaeróbica de residuos agroindustriales (ganaderos, principalmente). El PER 2011-2020 enumera hasta diecisiete barreras en total.

El plan también propone actuaciones que equilibren el potencial de generación y la tecnología disponible con la producción real. En el ámbito de las propuestas normativas, habla de la adaptación del marco legal del Régimen Especial, mediante el establecimiento de objetivos específicos y diferenciados para las tecnologías de digestión anaeróbica y la de desgasificación de vertederos, la eliminación de la limitación al uso de gas natural, permitiendo hibridaciones en cualquier proporción, y la creación de un nuevo umbral de potencia (250 kW) para el biogás procedente de digestores anaeróbicos. También habla de simplificar los trámites administrativos.

Dentro de las propuestas de primas/tarifas a producción renovable, se pide estudiar y analizar el actual marco retributivo para estas instalaciones y su adaptación a las condiciones actuales y previstas dentro del nuevo PER. Éste recoge la necesidad de crear un marco económico que incentive aplicaciones no eléctricas del biogás, a fin de promover el desarrollo de tecnologías más eficientes energéticamente, como la depuración del biogás y la inyección del biometano obtenido en la red. Es necesario establecer un reconocimiento económico en función del contenido energético inyectado.

SUMARIO

Análisis de patentes

En el cuarto trimestre de 2011 se han identificado en la base de datos WPI (World Patent Index) 740 nuevas familias de patentes con documentos sobre tecnologías de conversión de la biomasa para la producción de energía. Atendiendo a la Tabla 1 puede inferirse que, aproximadamente, el 47% de las referencias encontradas están relacionadas con tecnologías bioquímicas y el 39% con termoquímicas. El 14% restante se refiere a tecnologías químicas. Las tecnologías de combustión directa, la digestión anaeróbica y la fermentación de azúcares cuentan con más de ciento cincuenta resultados.

TABLA 1. Número de familias de patentes clasificadas por tecnologías

TIPOS DE TECNOLOGÍAS DE CONVERSIÓN DE LA BIOMASA	4º TRIM. 2011
Tecnologías termoquímicas	286
Combustión directa	154
Gasificación	93
Pirólisis	39
Tecnologías bioquímicas	349
Digestión anaeróbica	191
Fermentación de azúcares	158
Tecnologías químicas (transesterificación, Fischer-Tropsch síntesis de metanol)	105
Nº TOTAL FAMILIAS DE PATENTES	740

En la Tabla 2 se muestran los países líderes. Cabe destacar que el 39% de los documentos identificados se solicitaron en China y el 26% son solicitudes internacionales de patente (PCT). A continuación, destacan EE.UU. (20%) y Japón (16%). España dispone de tres referencias.

TABLA 2. Ranking por países

	PAÍS	Nº REFERENCIAS
1	China (CN)	288
2	WO	189
3	EE.UU. (US)	151
4	Japón (JP)	116
5	Corea (KR)	32
6	EP	28
7	Canadá (CA)	19
8	Francia (FR)	16
9	Alemania (DE)	15
10	Australia (AU)	8
11	Brasil (BR)	8

En los apartados posteriores se recoge una selección de los documentos de patentes identificados en el trimestre analizado, así como un resumen de las noticias más significativas, clasificados por tecnologías.

Solicitudes de Patentes Publicadas

Los datos que aparecen en la tabla corresponden a una selección de las solicitudes de patentes publicadas por primera vez durante el trimestre analizado.

Si desea ampliar información sobre alguna de las patentes aquí listadas, pulse sobre el número de patente correspondiente para acceder a la información online relativa a la misma.

COMBUSTIÓN DIRECTA

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
US2011296748	ZILKHA BIOMASS FUELS LLC et al.	EE.UU.	METHODS FOR THE MANUFACTURE OF FUEL PELLETS AND OTHER PRODUCTS FROM LIGNOCELLULOSIC BIOMASS. The present invention is directed to a method for producing products, such as fuel pellets, from lignocellulosic biomass. Lignocellulosic biomass having a moisture content of less than about 30% by weight is introduced into a reactor. A vacuum of less than about 500 torr is applied to the reactor. Steam having a temperature of between about 180 DEG C. and about 235 DEG C. is injected into the reactor. The biomass is maintained in the reactor between about 1 and about 12 minutes. The treated biomass having a moisture content less than about 30% by weight is removed from the reactor. Treated biomass is formed into a pellet.
US2011290202	SMITH MICHAEL J et al.	EE.UU.	METHOD AND APPARATUS FOR THE CONVERSION OF AQUATIC PLANTS INTO BIOGASES AND ELECTRICITY. A method for producing a biogas is provided. The method includes the steps of providing a polyculture of aquatic plants to a growth system; continuously providing water, carbon dioxide, air and nutrients to the polyculture contained within the growth system; growing the polyculture for a time sufficient to produce an aquatic plant-based biomass; withdrawing a portion of the aquatic plant-based biomass contained within the growth system; and treating the withdrawn aquatic plant-based biomass to produce a biogas.
US2011300494	MAXITROL CO	EE.UU.	CONTROL SYSTEM AND METHOD FOR A SOLID FUEL COMBUSTION APPLIANCE. A control system for a solid fuel combustion appliance, e.g., a wood burning stove, includes a temperature sensor for sensing an output temperature of the appliance. A controller receives the output temperature and controls a damper associated with air flow through the stove to maintain a predetermined temperature. The system also includes a detector that senses certain conditions of the solid fuel, e.g., wood, that is burned by the stove. When additional fuel is added to the appliance, the system temporarily encourages initial combustion of the new fuel, before returning to maintaining the predetermined temperature.
EP2392857	AIR LIQUIDE et al.	Francia	OXY-FUEL BURNER. Method of designing a burner for combusting fuel with an oxidizer containing at least 23%vol O 2 , the block of the burner defining in succession a feed passage, a substantially cylindrical burner chamber having a length Lc and optionally a widening terminal section having a length Ls, so that Lc/(Lc + Ls) > 2/3 and 30mN 0,5* (If + Iox)* [(Lc + Ls) 2 /So] 70mN, whereby If and Iox are the total fuel respectively oxidizer injection momentum at nominal power and So is the cross sectional area of the outlet opening of the block in the plane perpendicular to the burner axis.

COMBUSTIÓN DIRECTA

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011145575	MITSUBISHI HEAVY IND LTD et al.	Japón	BIOMASS PULVERIZING DEVICE AND BIOMASS DEG COAL CO-COMBUSTION SYSTEM. The pulverizing device (13) is provided with a feedstock supply pipe (12), which supplies biomass feedstock (11) from above in the vertical direction, a pulverizing table (14) whereon the supplied biomass feedstock is loaded, and pulverizing rollers (16) that are operated by being linked to rotation of the pulverizing table (14) and pulverize the biomass feedstock (11) by means of pressure, a blower means that creates an upward current, and a separator (19) which classifies the pulverized biomass powder (17). The pulverizing device comprises a vertical rim (14a) that surrounds the pulverizing table (14) and also is provided with a first projecting ledge (31), wherein a plurality of slits (32) is formed, which extends from the pulverizing device (13) towards the lower part of the pulverizing rollers (16) and forms a prescribed gap with the upper surface of the vertical rim (14a).
WO2011132481	SATAKE ENG CO LTD et al.	Japón	GRAIN-DRYING FACILITY. Provided is a grain-drying facility that can effectively utilize the thermal energy of hot air generated by the combustion of biomass in a biomass combustion furnace. The disclosed grain-drying facility (1) includes: a biomass combustion furnace (3) provided with a heat exchanger (24) that generates hot air on the basis of the heat of combustion of biomass fuel and outside air taken in from outside; and a circulation-type grain drier (2) provided with a grain-drying section (7) to which the hot air generated by the biomass combustion furnace (3) is supplied via a hot-air supply pipe (15). The circulation-type grain drier (2) is provided with a grain-heating section (6) including: a plurality of heating tubes (6a) provided inside a grain storage/circulation tank (5) for heating the grains therein; and an air-exhaust fan (14) that is linked to the exhaust-side opening (6c) of each heating tube (6a), the exhaust-side opening being located on the side of one end of each heating tube. The circulation-type grain drier (2) also includes an exhaust-hot-air supply pipe (11) that links the exhaust hot air discharged from the biomass combustion furnace (3) with the intake-side opening (6b) of each heating tube (6a), the intake-side opening being located on the side of the other end of each heating tube.
AU2011203327	VOGEL PETER	Australia	METALLURGIC USE OF BIOMASS. An improved system for steel production wherein biomass is utilised as stag forming and slag foaming agent, recarburiser, reducing agent or fuel.
US8038743	WOOTTON JOHN R et al.	EE.UU.	SYSTEMS AND METHODS FOR SUPERCRITICAL WATER REFORMATION OF FUELS AND GENERATION OF HYDROGEN USING SUPERCRITICAL WATER. A supercritical water reformer (SCWR) and methods for using supercritical water to convert hydrocarbons, particularly hydrocarbon fuels such as diesel fuel or gasoline, into carbonaceous gases and hydrogen. The synthesis gas stream generated by the fuel reforming reaction can then be further refined to increase hydrogen content, and the resultant hydrogen can be utilized to power fuel cells.
WO2011117374	NYENHUIS MARKUS	Alemania	METHOD AND APPARATUS FOR DEHUSKING RAPESEED. A method for dehusking rapeseed comprises the following steps: providing rapeseed consisting of rape grains having a husk portion and kernel; introducing the rapeseed into an impact mill (1); mechanically breaking up the husk portions of the rapeseed in the impact mill (1); discharging the milled material, consisting of broken-up husk portions and kernel portions, from the impact mill (1); introducing the milled material into a classifying device (2) and separating the husk portions from the kernel portions; discharging the husk portions and the kernel portions from the classifying device (2); introducing the husk portions into a screening device (3) for further separation of residues from the husk portions; and separately discharging husk portions and kernel portions from the classifying device (2).

COMBUSTIÓN DIRECTA

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
AU2011100662	TRUE BLUE MALLEE PTY LTD	Australia	FIRE EXTENDER BIOBLOX. Abstract Fire Extender Bioblox enables the complete above-ground biomass of a tree (including all leaf, stem and branch components) to be manufactured into a single compressed product with no additives. This product enables more efficient production, harvesting, processing manufacturing and transport of an improved combustion (green energy) product with superior heat generation characteristics (19.0 to 20.0 MJ/kg). Our experimentation and technical development has produced a brand new product that extends burning times compared with traditional firewood. The successful incorporation of leaf material within the product is the key element of innovation forming the basis of this application.

GASIFICACIÓN

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011141635	NESTE OIL OYJ et al.	Finlandia	METHOD OF PRODUCING A HYDROCARBON COMPOSITION. Method of producing a hydrocarbon composition. The method comprises providing a biomass raw-material; gasifying the raw-material in the presence of oxygen to produce a gas containing carbon monoxide, carbon dioxide, hydrogen and hydrocarbons possibly together with inert components; separately increasing the hydrogen-to-carbon monoxide ratio of the gas to a value of about 2; feeding the gas to a Fischer-Tropsch reactor; converting in the Fischer-Tropsch reactor at least a significant part of the carbon monoxide and hydrogen contained in the gas into a hydrocarbon composition containing C4-C90 hydrocarbons; and recovering the hydrocarbon composition. According to the invention, fresh external hydrogen is introduced into the gas before feeding into the Fischer-Tropsch reactor. By using external hydrogen feed, the capacity of a biomass gasification process can be increased and the need for a conventional Water Gas Shift for producing hydrogen from carbon monoxide and steam can be eliminated.
US2011220846	BANOWETZ GARY M et al.	EE.UU.	NON-DENSIFIED BIOMASS GASIFICATION METHOD AND APPARATUS. A non-densified feedstock is fed into a modified countercurrent gasifier, and syngas and char are produced from an upper portion of the gasifier. In the preferred embodiment, propane gas is injected into a lower portion of the gasifier as unconsolidated straw feedstock is metered into a gasifier feedstock inlet. The feedstock is converted into syngas and char in a combustion section of the gasifier. A portion of the syngas and char is recycled within the gasifier. After the syngas and char flow out of a gasifier production outlet, the char is separated from the syngas in a cyclone separator. The syngas is used to produce power at the facility where the syngas is produced.

GASIFICACIÓN

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
US2011266500	PACKER ENG INC	EE.UU.	SYSTEM AND METHOD FOR CONTROLLING CHAR IN BIOMASS REACTORS. A system and process for modulating the carbon content of ash produced by a biomass gasification process, for example, to selected levels chosen by an operator, through the controlled injection of steam and controlled introduction of warm air during processing of a biomass feedstock. The system and process include delivering a carbon-containing biomass feedstock to a gasification reactor and producing a syngas and an ash from the biomass feedstock, and regulating the carbon content of the ash between a level at which carbon not present in the ash and a second level at which carbon is present in the ash. The regulating step entails selectively decreasing the moisture level of the biomass feedstock prior to the biomass feedstock being delivered to the gasification reactor and thereby increasing the carbon content of the ash, or increasing a moisture level of a mixture of the biomass feedstock, ash and gases within the gasification reactor and thereby decrease the carbon content of the ash.
US2011239658	GEN ELECTRIC	EE.UU.	SYSTEMS AND METHODS FOR FEEDSTOCK INJECTION. Systems and methods for injection of feedstock are included. In one embodiment, a system includes a solid fuel injector. The solid fuel injector includes a solid fuel passage, a first gas passage, and a second gas passage. The solid fuel passage is configured to inject a solid fuel through a fuel outlet in a fuel direction. The first gas passage is configured to inject a first gas through a first gas outlet in a first gas direction. The second gas passage is configured to inject a second gas through a second gas outlet in a second gas direction. The first gas direction is oriented at a first angle relative to the fuel direction. The second gas direction is oriented at a second angle relative to the fuel direction, and the first and second angles are different from one another.
US2011232162	EXXONMOBIL RES & ENG CO	EE.UU.	BIOMASS CONVERSION USING CARBON MONOXIDE AND WATER. A lignocellulosic biomass material is converted into precursors for liquid hydrocarbon transportation fuels by contacting the biomass material with water and carbon monoxide at elevated temperature, typically from 280 to 350 DEG C., an elevated pressure, typically a total system pressure of 12 to 30 MPa and a CO partial pressure from 5 to 10 MPa and a weight ratio of water:biomass material from 0.5:1 to 5.0:1, to dissolve the biomass material into the reaction mixture and depolymerize, deoxygenate and hydrogenate the lignocellulose biomass material, so converting the biomass material into liquid transportation fuel precursors.
US2011275869	BASF SE	Alemania	PROCESS FOR PRODUCING SYNTHESIS GAS AND AT LEAST ONE ORGANIC LIQUID OR LIQUEFIABLE MATERIAL OF VALUE. The present invention relates to a process for producing synthesis gas and at least one organic liquid or liquefiable material of value, wherein a) a biomass starting material is provided, b) the biomass starting material is subjected to a decomposition, c) at least one aromatics-enriched fraction C1) and at least one aromatics-depleted fraction C2) are optionally isolated from the decomposed material obtained in step b), d) the decomposition product from step b) or the aromatics-enriched fraction C1) from step c) is fed into a dealkylation zone and reacted in the presence of hydrogen and/or water vapor, e) a discharge is taken from the dealkylation zone and subjected to a separation to give at least one organic liquid or liquefiable material of value and at least one stream enriched in components which are more volatile than the organic material of value, f); the stream enriched in components which are more volatile than the organic material of value which is obtained in step e) is at least partly used for producing synthesis gas.

GASIFICACIÓN

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011140610	ANSAC PTY LTD et al.	Australia	PROCESS AND APPARATUS FOR THE TREATMENT OF TAR IN SYNGAS. The present invention relates to a method and apparatus (10) for use in rarefying a syngas so as to improve a calorific value of the syngas through the reduction of a concentration of tar from the syngas. The apparatus (10) comprises a gasification/pyrolysis means (12) such as a kiln (11), for generation of a flow of syngas from a raw material, and a cracking means (14). The cracking means (14) comprising a body (42) having an insulated internal volume (44) adapted to hold a heated bed of char. The flow of syngas from the kiln (11) is directed through the cracking means (14) where it comes into contact with the heated bed of char. Heavy long-chained carbon based molecules within the syngas undergo a cracking reaction and are broken into constituent lighter carbon based molecules. The method and apparatus of the present invention provides a rarefied output flow of syngas having an improved calorific quality and a substantially reduced concentration of tar.
WO2011141927	INDIAN OIL CORP LTD et al.	India	A TWO STAGE GASIFIER FOR GENERATING SYNGAS. The present subject matter describes a gasification system (100) for gasifying a variety of feedstocks. A first stage gasifier (105) receives a feedstock either from a first group of feedstocks or a second group of feedstocks or both. The first stage gasifier decomposes the received feedstock to produce a first product. A second stage gasifier (115) is connected to the first stage gasifier (105) for receiving the first product. In addition, the second stage gasifier (115) receives a feedstock either from a third group of feedstocks or a fourth group of feedstocks or both. The second stage gasifier (115) gasifies the first product and the received feedstock to produce syngas.
US2011277385	GEN ELECTRIC	EE.UU.	SYSTEM AND METHOD FOR CONVEYING A SOLID FUEL IN A CARRIER GAS. Systems are provided for gasification operations. The systems may use carbonous gas as part of plant operations. The systems may include a gasifier and a solid fuel feeder. The solid fuel feeder is capable of feeding solid fuel in a carbonous carrier gas to the gasifier during a startup period and also during a steady state period of the gasifier.
KR20110039835	SHINHEUNG SYNERGY CO LTD	Corea	APPARATUS AND METHOD OF HEAT GENERATING USING GASIFICATION BIO MASS. A heat generating device and method for gasifying biomass are provided to improve heat generation efficiency since inflammable gas is continuously produced by the successive pyrolysis of biomass. Constitution: A heat generating device comprises a fuel feeder(113), a gas reaction furnace(111), a gas exhausting tube(114), a mixing and supplying device(120), an exhaust device(130), and a combustion device(140). The fuel feeder consecutively supplies biomass. The inflammable gas is produced by the supply and pyrolyze of biomass. The gas exhausting tube discharges the inflammable gas produced in the reaction space. The mixing and supplying device supplies water and heated air to the biomass. An ash ejector discharges the ash which is generated by burning the biomass. The combustion device combusts the inflammable gas and produces heat.

PIRÓLISIS

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
US2011290788	RAUTE OYJ	Finlandia	METHOD AND APPARATUS FOR PROCESSING FRAGMENTED MATERIAL BY PYROLYSIS. A method and an apparatus are provided for processing fragmented material by pyrolysis, wherein the material to be processed is fed into a processing cavity and heated therein. In the method, the fragmented material is continuously fed through the processing cavity and heated at least at the beginning of the process with microwave energy. The apparatus comprises means for feeding the fragmented material to be processed continuously through said cavity; microwave applicator means for initiating heating of the material at the beginning of the process; and means for collecting the pyrolysis end product.
WO2011133190	AGNI CORP et al.	EE.UU.	SYSTEMS, METHODS, AND COMPOSITIONS RELATING TO COMBUSTIBLE BIOMATERIALS. A method for making a combustible material is described. The method includes: (i) receiving one or more types of biomass, each of which includes an inorganic material; (ii) rupturing lignocellulose in one or more types of the biomass to produce ruptured biomass including the inorganic material; (iii) washing the ruptured biomass with solvent to drive the inorganic material from the ruptured biomass into the solvent to produce an inorganic-material-enriched solvent and an inorganic-material-depleted ruptured biomass; (iv) pyrolyzing the inorganic-material-depleted ruptured biomass to produce a combustible biomaterial.
US2011294927	UNIV IOWA RES FOUND	EE.UU.	BIO-OIL FORMULATION AS AN ASPHALT SUBSTITUTE. A bio-oil formulation, useful as an asphalt binder substitute in pavement and roofing shingles, includes bio-oil and a polymer additive. The bio-oil binder can include an asphalt additive. The bio-oil binder can be emulsified with water and a surfactant for use as a weatherproofing sealant or as an adhesive. A method for making the bio-oil binder is disclosed.
US2011283601	KIOR INC	EE.UU.	BIOMASS PYROLYSIS CONVERSION PROCESS WITH HIGH OLEFIN PRODUCTION AND UPGRADE. Disclosed is a process for biomass conversion in a catalytic pyrolysis reactor to convert such to liquid hydrocarbons which includes conditions which favor increased olefin production; wherein the olefins are then upgraded alone or with the produced bio-oil to fuel range hydrocarbons.
US2011258914	AVELLO BIOENERGY INC	EE.UU.	METHODS FOR INTEGRATED FAST PYROLYSIS PROCESSING OF BIOMASS. Methods, process, apparatus, equipment, and systems are disclosed for converting biomass into bio-oil fractions for chemicals, materials, feedstocks and fuels using a low-cost, integrated fast pyrolysis system. The system improves upon prior art by creating stable, bio-oil fractions which have unique properties that make them individually superior to conventional bio-oil. The invention enables water and low-molecular weight compounds to be separated into a final value-added fraction suitable for upgrading or extracting into value-added chemicals, fuels and water. Initial bio-oil fractions from the process are chemically distinct, have low-water content and acidity which reduces processing costs normally associated with conventional bio-oil post-production upgrading since fewer separation steps, milder processing conditions and lower auxiliary inputs are required. Biochar is stabilized so that it can be handled safely. The integrated fast pyrolysis process includes biomass storage, preparation, pretreatment, and conversion, product recovery and processing to create and store stable biochar and bio-oil fractions.

PIRÓLISIS

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
MY142809	UNIVERSITI TEKNOLOGI MALAYSIA	Malasia	BIOCOAL FROM BIOMASS. The present invention relates to a process for converting biomass material selected from a group consisting of oil palm shells, oil palm fibers, empty fruit bunches, dried leaves, rice husks, wood wastes and municipal solid wastes to biocoal to be utilized for fuel generation, the process comprising the steps heating the biomass material in the enclosed container at a rate of 1 K/min to 25 K/min to a 10 carbonization temperature range of 180 °C to 250 °C, compressing the biomass material using mechanical pressure in a range of 1 MPa to 20 Mpa when the temperature above reaches to about 150 °C, holding a time period of 5 to 60 minutes (depending on thickness of biocoal) of compressing the biomass material into biocoal when the temperature reaches 180 °C to 250 °C and the temperature is maintained at predetennined level between 180 °C and 250 °C and removing the biocoal produced. as the carbonization temperatures increases from 180 °C to 250 °C, there is an increase on the fixed carbon content. Higher carbonization temperature will be able to produce better quality of biocoal. This is due to conversion of volatile matter content to higher percentage of fixed carbon content at high carbonization temperature. therefore, the biocoal produced at carbonization temperature of 250 °C has fixed carbon content of approximately 57, volatile matter content of approximately 39, moisture content of approximately 3 and ash content of approximately 1.
WO2011128741	ENI SPA et al.	Italia	PROCESS FOR THE PRODUCTION OF BIO-OIL FROM MUNICIPAL SOLID WASTE. A process for the production of bio-oil from municipal solid waste, comprising the following steps: a) subjecting said municipal solid waste to liquefaction obtaining a mixture including an oily-phase consisting of bio-oil, a solid phase and a first aqueous phase; b) subjecting the first aqueous phase obtained in the liquefaction step a) to a treatment with at least one adsorbing material obtaining a second aqueous phase; c) subjecting the second aqueous phase obtained in the treatment step b) with at least one adsorbing material to fermentation obtaining a biomass; d) subjecting the biomass obtained in the fermentation step c) to said liquefaction step a). The bio-oil (or bio-crude) thus obtained can be advantageously used in the production of biofuels which can be used as such or mixed with other fuels for motor vehicles. Alternatively, said bio-oil (or bio-crude) can be used as such (biocombustible) or mixed with fossil combustibles (combustible oil, coal, etc.) for the generation of electric energy or heat.
US2011252699	SHEPARD BRITTON	EE.UU.	BIOCHAR RETORT KILN. Systems and methods for a biochar retort kiln are disclosed herein. A method for making biochar includes placing waste bio mass in a cylindrical retort chamber. The retort chamber extends outwardly at a first end and a second end from a fire box. Pyrolysis is fueled by igniting the waste biomass. Syngasses are evacuated through one or more holes defined by the cylindrical retort chamber, such that the syngasses are driven out of the biomass and out of the retort chamber to be consumed by a fire in the firebox. The byproduct of the described method is biochar.

PIRÓLISIS

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011134961	STADTWERKE ROSENHEIM GMBH & CO KG et al.	Alemania	METHOD AND DEVICE FOR GASIFYING BIOMASS. In order to gasify biomass, the raw material (12) is supplied to a gasification reactor (32) via a supply device (10), a pyrolysis unit (14), an oxidation unit (16) and a reduction unit (18) being arranged in direct contact with one another in said reactor. The raw material (12) is degassed in the pyrolysis unit (14) and is converted to the pyrolysis products. The pyrolysis products are burnt in the oxidation unit (16) while a gasification agent (44) is supplied. The oxidation products are converted to product gas (22) in the reduction unit (18) and the product gas (22) is removed from the gasification reactor (32) via an outlet (20). At least part of the product gas (22) is used to heat the raw material (12) in the pyrolysis unit (14), the raw material (12) being completely degassed in the pyrolysis unit (14) and being completely separated to give a solid phase consisting of carbon and a gaseous phase consisting of the pyrolysis gases.
US2011232161	EXXONMOBIL RES & ENG CO	EE.UU.	BIOMASS OIL CONVERSION PROCESS. Biomass pyrolysis oil is converted into precursors for hydrocarbon transportation fuels by contacting the oil with liquid superheated water or supercritical water to depolymerize and deoxygenate the components of the oil and form the transportation fuel precursors. Temperatures above 200 DEG C. and preferably above 300 DEG C. are preferred with supercritical water at temperatures above 374 DEG C. and pressures above 22 MPA providing the capability for fast conversion rates.
US2011233042	EXXONMOBIL RES & ENG CO	EE.UU.	BIOMASS CONVERSION PROCESS. Biomass is used as a co-feed for a heavy petroleum oil coking process to improve the operation of the coking process and to utilize biomaterial for the production of transportation fuels. The coking process may be a delayed coking process or a fluidized bed coking process and in each case, the presence of the biomass will decrease the coke drying time so reducing coke handling problems in the unit besides forming a superior coke product. In the case of a fluidized bed coking process using a gasifier for the coke, the addition of an alkali metal salt improves the operation of the gasifier.
WO2011141546	SHELL INT RESEARCH	Holanda	PROCESS FOR LIQUEFYING A CELLULOSIC MATERIAL. A process for liquefying a cellulosic material to produce a liquefied product, which process comprises contacting the cellulosic material simultaneously with - an acid catalyst; - a solvent mixture containing water and a co-solvent, which co-solvent comprises one or more polar solvents and which co-solvent is present in an amount of more than or equal to 10% by weight and less than or equal to 95% by weight, based on the total weight of water and co-solvent; - a hydrogenation catalyst; and - a source of hydrogen. Products obtained from the above process and use of such products to prepare biofuels.

DESOXIGENACIÓN TÉRMICA DE BIOMASA PARA LA PRODUCCIÓN DE BIOCOMBUSTIBLES

Investigadores de la Universidad de Maine (EE.UU.) utilizan un nuevo proceso termoquímico que no requiere el uso de catalizadores e hidrógeno para producir biocombustibles a partir de hidrocarburos derivados de biomasa celulósica, lo que puede resultar muy útil para reducir el coste de producción.
El proceso conocido como desoxigenación térmica (TDO) puede transformar restos forestales y otros desechos sólidos, hierba y residuos de la construcción en una mezcla de hidrocarburos con puntos de ebullición que comprenden los del queroseno, el gasoleo y la gasolina. Además, el producto tiene propiedades que lo convierten en un combustible de aplicación directa, con poco o ningún proceso de refino.

En el proceso TDO, la biomasa se transforma primero en ácidos orgánicos. Después, se añade hidróxido de calcio para formar una sal cálcica. La mezcla de reacción se calienta a continuación a 450 °C. Mediante este procedimiento se elimina el oxígeno de la biomasa sin la necesidad de ninguna fuente exterior de hidrógeno y el resultado es la obtención de un aceite de color ámbar oscuro de mayor densidad energética que la biomasa original.

FABRICACIÓN DE UN PELLET INDUSTRIAL A PARTIR DE MEZCLAS DE BIOMASAS PARA SU UTILIZACIÓN COMO COMBUSTIBLE

El proyecto "Desarrollo de un pellet para aplicaciones industriales" (Pelet In) en el que participan Pellets Asturias, HUNOSA, el Instituto Nacional del Carbón (INCAR, CSIC) y la Fundación Asturiana de la Energía pretende culminar en 2013 el desarrollo de un pellet industrial comercial para su utilización en industrias y centrales eléctricas, incluidas las de carbón.

El proyecto parte de la caracterización en laboratorio de diferentes materias primas, su análisis de combustibilidad y de sus propiedades reactivas. Además, se plantea la fabricación a escala semi-piloto de pellets con diferentes composiciones hasta conseguir la composición definitiva, a partir de la mezcla de diferentes biomasas y aditivos, que mejor cumpla con los requerimientos establecidos. Con el fin de buscar una solución que se pueda implementar de un modo más generalizado, también se investigará la producción de pellets industriales a partir de biomasas torrefactadas.

Una vez definida en el laboratorio la composición del pellet, se iniciará la fase de fabricación a escala industrial. La fabricación se hará en cuatro campañas en las que será necesario realizar los correspondientes ajustes a la cadena de producción para conseguir un pellet con las características necesarias.

El pellet fabricado será utilizado en la central eléctrica de La Pereda, en Mieres, donde se probará a través de la tecnología de co-combustión con carbón. Las primeras pruebas se realizarán con caudales de pellets entre 3 y 12 t/h durante 48 horas, mientras que la última prueba será de larga duración, con caudales de entre 12 y 15 t/h.

Paralelamente, se realizarán estudios de mercado para conocer las posibilidades de penetración de este producto en los mercados español y europeo.

PLANTA DE PIRÓLISIS RÁPIDA DE BIOMASA DE IKERLAN

Ikerlan presentó en el 6º Congreso Internacional de Bioenergía las ventajas, aplicaciones y estado del arte del sistema de pirólisis rápida de biomasa.

Ikerlan tiene en su centro tecnológico del País Vasco una planta piloto de 20 kg/h donde experimentan con diferentes materias primas evaluando la mejor valorización de los diferentes productos que se obtienen. Trabajan con una tecnología de reactor cónico de lecho en surtidor, desarrollada en la Universidad del País Vasco. La Universidad de Zaragoza, la Universidad Politécnica y Cartif también están trabajando con pirólisis rápida en España.

El objetivo principal para obtener un máximo rendimiento de líquido es el calentamiento rápido de la biomasa. Para ello, la biomasa alimentada encuentra un lecho isotermo a 450-500°C en el que el contacto vigoroso con la arena provoca una transferencia de calor muy alta. Las partículas de biomasa describen un movimiento cíclico, y, una vez han reaccionado totalmente, salen en forma de gases y biochar arrastrados hacia la salida del reactor, de forma que se autorregula la masa del lecho del reactor, quedando el lecho de arena, cuya densidad es mucho mayor que la del biochar.

DIGESTIÓN ANAERÓBICA

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011112737	STOVER ENOS LOY et al.	EE.UU.	OPTIMIZED BIOGAS (BIOMETHANE) PRODUCTION PROCESS. The present invention relates to a process for pretreatment of a feedstock in a pretreatment tank. Various parameters, such as oxidation-reduction potential, pH, and temperature, are monitored in the pretreatment tank to determine whether the oxidation-reduction potential, pH, and temperature are each within a predetermined range. The volume of feedstock inside the pretreatment tank is adjusted in response to a determination that one of the oxidation-reduction potential, pH, and temperature of the treated material are outside the corresponding predetermined ranges to maintain the oxidation-reduction potential, pH, and temperature of the treated material within operating conditions.
ES2367731	CONSEJO SUPERIOR INVESTIGACION	España	PROCEDIMIENTO PARA LA DISMINUCION DE LA CONCENTRACION DE DIOXIDO DE CARBONO EN BIOGAS. Procedimiento para la disminución de la concentración de dióxido de carbono en biogás. Procedimiento para la producción anaeróbica de metano, en un digestor anaeróbico caracterizado porque entre un 5 y un 30 % en volumen del biogás producido es burbujeado al efluente del digestor que comprende al menos las siguientes etapas: derivación de parte del biogás producido desde el lugar de almacenamiento del mismo o desde la salida del digestor.
EP2390235	HOLZER ANDRE et al.	Francia	METHOD AND PLANT FOR THE TREATMENT OF LIQUID ORGANIC WASTE MATERIAL. The invention relates to a method and a plant for the treatment of an organic waste material in a liquid form comprising subjecting the liquid to anaerobic fermentation in a biogas reactor resulting in a digestate and subjecting the digestate to ultrafiltration and reverse osmosis wherein the digestate from the biogas reactor is centrifuged in a centrifugation step resulting in a centrifugate liquid fraction that shows a content of dry matter lower than 3 %, and a centrifugate concentrate fraction, before being subjected to ultrafiltration and in that the centrifugate concentrate fraction is returned to the biogas reactor.
WO2011143667	UNIV CALIFORNIA et al.	EE.UU.	HIGH RATE ANAEROBIC DIGESTER SYSTEM AND METHOD. An anaerobic digester system for producing a biogas from organic material is disclosed. The system includes a hydrolysis reactor comprising therein acidogenic and hydrolytic bacterial culture for which the organic material is a hydrolysis substrate, a biogasification reactor comprising therein acetogenic and methanogenic bacterial culture, and a biostabilization reactor comprising therein a methanogenic bacterial culture. The operating conditions of the biostabilization reactor are tailored to increase the digestion rate and energy conversion efficiency of the system. A method of using the system is also disclosed.
EP2386648	SOLVAY	Bélgica	PROCESS FOR PRODUCING BIOGAS. Process for the production of a biogas containing methane from an organic matter amenable to anaerobic digestion comprising feeding an anaerobic digester with the organic matter, said anaerobic digester containing a digestion medium comprising microorganisms capable of digesting said organic matter, wherein the total inorganic carbon concentration of the digestion medium is maintained above 9000 mg of equivalent CaCO 3 /l and the buffering capacity is maintained above 200 mmol/l by the addition of a buffering reagent comprising sodium bicarbonate to the digestion medium.

DIGESTIÓN ANAERÓBICA

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011136671	NEW ENERGY TECHNOLOGIES SP Z O O et al.	Polonia	A METHOD FOR PRODUCING BIOGAS IN A PROCESS OF ANAEROBIC METHANE FERMENTATION OF ORGANIC SLUDGE IN A FERMENTATION TANK AND A CATALYST FOR SUCH A METHOD. The invention relates to a method for producing biogas in a process of anaerobic methane fermentation of organic sludge in a fermentation tank. In order to obtain high yield of biogas production and to render a biogas production independent on a composition of organic sludge being processed, the method comprises the steps of: a) measuring contents of biogas, methane and optionally metals in the fermentation tank; b) determining a proportion of constituents and amount of a fermentation catalyst comprising a mixture of a methanol, glycerol and optionally further additive constituents and a moment for adding such a catalyst on the basis of the measurements carried out in the previous steps a); c) adding the previously determined catalyst to the fermentation tank in the previously determined moment; d) introducing fresh organic sludge into the fermentation tank, wherein at least one first cycle of steps a)-c) is carried out until a state of stabilization of biogas production is achieved and then at least one second cycle of steps a)-c) is carried out. In the first cycle the catalyst comprises methanol in amount of 20 to 25 % by wt, glycerol in amount up to 5 % by wt., fatty acids in amount up to 5 % by wt. and water, whereas in the second cycle after achieving a state of stabilization of biogas production it comprises methanol in amount of 10 to 15 % by wt., glycerol in amount of 20 to 25 % by wt., fatty acids in amount of 3 to 10 % by wt. and water.
WO2011128513	PRESECO OY et al.	Finlandia	A WASTE REFINING METHOD. The present invention relates to the refining of municipal solid waste (MSW) to produce methane using an anaerobic digestion process for the treatment of the biodegradable fraction of MSW. The method according to the invention comprises steps, wherein a) municipal solid waste (MSW) is fed to a pretreatment wherein a biodegradable fraction is separated therefrom and recovered; b) the biodegradable fraction from step a) is fed to an anaerobic digestion process, wherein biogas and a liquid reject is produced, and the biogas containing methane is recovered; and c) at least a fraction of the remaining part of the waste from step a) wherefrom a biodegradable fraction has been separated is pyrolyzed in a pyrolysis unit.
WO2011130392	VEOLIA WATER SOLUTIONS & TECHNOLGIES SUPPORT et al.	Francia	ANAEROBIC MEMBRANE BIOREACTOR FOR TREATING A WASTE STREAM. A waste stream having anaerobically biodegradable components is fed to an anaerobic reactor where the components react with microorganisms to biodegrade the components and produce biomass and biogas. Mixing occurs in select portions of the anaerobic reactor, particularly the bottom and top portions of the reactor. Relatively heavy solids settle to the bottom and are mixed with the mixed liquor while relatively light or fine solids float to the top portion of the anaerobic reactor where they are mixed with the mixed liquor. This leaves an intermediate or middle portion of the anaerobic reactor where the concentration of solids is relatively lower compared to the concentration of solids in the upper or lower portion of the anaerobic reactor.

DIGESTIÓN ANAERÓBICA

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011127801	XU WENHUI et al.	China	METHANE GENERATOR WITH PROTUBERANT COVER. A methane generator with protuberant cover comprises a cover with concave cavity for collecting and depositing methane. The opening at the concave cavity of said cover is submerged in methane liquid so as to make the concave cavity hermetically form a cavity for collecting and depositing methane. The top of said cover protrudes upwardly forming a shape with small upper part and large lower part. The external surface of said cover is connected with lifting ears. The methane generator comprises also a knighthead impenetrating the lifting ears; said knighthead is used for fixing the cover on methane tank. The methane generator has the advantages of simple structure and low manufacture costs, and is suitable for batch product. The cover for collecting and depositing methane can also be designed according to the size of methane tank, and is especially suitable for being set in country dung storing pool for collecting methane. There are clearances between the cover and the wall of methane tank, and materials can be fed to methane tank or dregs can be discharged through the clearance, which is convenient in use. So the methane generator with protuberant cover has better practicability, and is especially suitable for spreading and using in country.
US2011250678	JOO SUNG-HO	Corea	SYSTEM FOR PRODUCING GAS FROM ORGANIC WASTE. A system for producing gas from organic waste includes a pretreatment unit, which crushes organic waste; an oxidation unit, which oxidizes the crushed organic waste in an oxidation bath; an oxidation unit, which converts the oxidized organic waste into fluid by anaerobic digestion; and a stabilization unit, which divides the fluid into gas and liquid fertilizer when the fluid is supplied into a fluid-stabilizing bath. The oxidation bath has a transparent safety window, a coupler, a first pipe coupled to the coupler and connected to the oxidation pump, a second pipe, a pit formed in a bottom of the oxidation bath. An inorganic-material-discharging unit has one side seated in the pit and the other side exposed from above. A mixer is coupled to a lower inside wall of the oxidation bath corresponding to the pit, and includes first blades coupled to a mixing motor.
WO2011120149	CARBON CONTROL SYSTEMS INC et al.	Canadá	ANAEROBIC DIGESTION PROCESS MONITORING DEVICE AND METHOD THEREOF. Disclosed herein are a device and a method for extracting individual organic acids, Total Volatile Fatty Acids (VFA), ammonium (NH4 +), buffering inorganic carbon compounds or hydrogen carbonate (HCO3 -) to determine their concentrations and the trends of said concentrations in an active anaerobic digestion (AD) process. The determination of said concentrations in real-time allows the AD operator to run the AD at optimal efficiency and ensure that the VFA and NH4 + concentrations do not reach toxic levels. A ratio of the concentration of total organic acids to the total inorganic carbon can be used to determine the performance of the digester.

DIGESTIÓN ANAERÓBICA

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011122056	METAWATER CO LTD et al.	Japón	METHANE FERMENTATION TREATMENT METHOD. Disclosed is a methane fermentation treatment method which enables the highly efficient methane fermentation treatment of an organic waste material having a low nitrogen concentration. Specifically disclosed is a methane fermentation treatment method comprising supplying an organic waste material having a ratio of the COD concentration to the nitrogen concentration (i.e., a COD/N ratio) of 50 or more to a methane fermentation vessel to cause the methane fermentation of the organic waste material, removing predetermined amounts of portions of the resulting fermentation liquor one after another from the methane fermentation vessel, separating each of the removed portions into a separated sludge and a separated solution, and redelivering at least a portion of the separated sludge to the methane fermentation vessel, wherein the concentration of ammonia nitrogen in the fermentation liquor contained in the methane fermentation vessel is measured directly or indirectly and the amount of the separated sludge to be redelivered to the methane fermentation vessel is so controlled that the concentration of ammonia nitrogen exceeds a predetermined value.
WO2011117864	AGROBICS LTD et al.	Israel	COMPOSITIONS OF MATTER AND USES THEREOF IN THE TREATMENT OF WASTE MATERIALS. Disclosed are compositions of matter comprising at least one anaerobic degrading microorganism, particulate active carbon and a polymeric solid support wherein the anaerobic degrading microorganism and particulate active carbon are entrapped in the polymeric support and processes for preparing the same. The disclosed compositions of matter are used in processes of anaerobic degradation of waste materials resulting in high yields of biogas production.

FERMENTACIÓN DE AZÚCARES

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
RO123351	PARDI ZOLTAN	Rumania	ETHYL ALCOHOL ANHYDRATION PROCESS. The invention relates to a process for ethyl alcohol anhydration by fermentation. According to the invention, the process is characterized in that, after the fermentation process, the fermentation mass is filtered, in one embodiment, by centrifugation and the resulting alcoholic solution, having a concentration of 20...60% alcohol, is treated with excess calcium carbide for water removal, thereby obtaining an alcohol for industrial use containing traces of water. The installation claimed by the invention consists of a reactor provided inside with a basket for the calcium carbide and an inlet for the supply of alcohol solution, an outlet for the discharge of alcohol, an outlet for the discharge of slime, an outlet for the acetylene formed through the reaction between the calcium carbide and the water in the alcohol solution, some fermentation vessels and a centrifugation filter.
US2011287502	CASTOR TREVOR PERCIVAL	EE.UU.	METHODS AND APPARATUS FOR PROCESSING CELLULOSIC BIOMASS. Embodiments of the present invention are directed to apparatus and methods for the substantially continuous processing of cellulosic biomasses with a supercritical, critical or near critical fluid to produce ethanol, bio-fuels and high value end products.

FERMENTACIÓN DE AZÚCARES

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011142426	HONDA MOTOR CO LTD et al.	Japón	METHOD FOR PRODUCING SACCHARIFICATION PRE-PROCESSED MATERIAL OF LIGNOCELLULOSE-BASED BIOMASS, AND SACCARIFICATION PRE-PROCESSING DEVICE USING SAME. Disclosed is a method that is for producing a saccharification pre-processed material and that obtains a saccharification pre-processed material from which lignin has been sufficiently dissociated when preprocessing lignocellulose-based biomass by means of aqueous ammonia. Further disclosed is a pre-processing device using same. The saccharification pre-processing device (1) is provided with: a processing means (2) that mixes a substrate and 20-30 mass% aqueous ammonia at a mass ratio substrate:aqueous ammonia of 1:0.7-1:1.3, obtaining a substrate mixture, heats the obtained substrate mixture, holding at a temperature of 25-100 DEG C for 1-100 hours, dissociates lignin from the substrate or causes the swelling of the substrate, obtaining an ammonia-containing saccharification pre-processed material, and dissociates ammonia from the obtained ammonia-containing saccharification pre-processed material, obtaining a saccharification pre-processed material; and an aqueous ammonia supply means (4) that supplies aqueous ammonia to the processing means (2).
WO2011140560	GEVO INC et al.	EE.UU.	RENEWABLE JET FUEL BLENDSTOCK FROM ISOBUTANOL. The present invention in its various embodiments is directed to methods for preparing a renewable jet fuel blendstock, and blendstocks prepared by such methods, comprising fermenting a biomass-derived feedstock to form one or more C2-C6 alcohols such as isobutanol, catalytically dehydrate and oligomerize the alcohols to form higher molecular weight olefins (e.g., C8-C16 olefins), hydrogenating at least a portion of the higher molecular weight olefins to form a renewable jet fuel blendstock comprising C12 and C16 alkanes which meet or exceed the requirements of ASTM D7566 - 10a for hydroprocessed synthesized paraffinic kerosene (SPK).
US2011269185	DAVID PETER R	EE.UU.	COMPOSITIONS AND METHODS FOR PRODUCING FERMENTATION PRODUCTS AND RESIDUALS. The present invention provides compositions and methods designed to increase value output of a fermentation reaction that yields a first product, intended for commercialization, such as ethanol, and a fermentation residual used, for example, as animal feed. The methods involve using microorganisms in the fermentation process that have been modified so as to yield a residual having greater value that a residual produced in the process by a microorganism not so modified. In particular, the present invention contemplates using microorganisms in a fermentation process that have been modified to increase production of a nutrient, such as an essential amino acid, thereby reducing the need to supplement the nutrient in the animal's diet. The present invention also provides a modified fermentation residual of higher commercial value. Also provided in the present invention are complete animal feeds, nutritional supplements comprising the subject ferment residuals. Further provided by the present invention is a method of performing fermentation, a modified fermentative microorganism and a genetic vehicle for modifying such microorganism.

FERMENTACIÓN DE AZÚCARES

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011135588	SHREE RENUKA SUGARS LTD et al.	Índia	A CONTINUOUS PROCESS FOR THE PREPARATION OF ALCOHOL. This invention provides a process for producing alcohol by continuous fermentation of fermentable substrate; fermentation being carried out in plurality of fermenters; fermented liquor being separated into a yeast enriched liquid being recirculated to fermenter to maintain the desirable yeast concentration in the fermenter; and a yeast-free liquid fed to distillation columns to obtain alcohol vapour, which being fed to condenser to obtain the alcohol with desired concentration; simultaneously obtaining the spent wash from distillation stage which is re-circulated to the fermenter. The process is characterized by utilization of portable water, reduction of water input, utilization of yeast in active after one cycle and achieving highly concentrated spent wash at the end of the process.; The process achieves the desirable alcohol concentration by continuous production by facilitating the maintenance of yeast levels in the fermenters.
WO2011131674	DSM IP ASSETS BV	Holanda	PROCESS FOR THE PRODUCTION OF CELLS WHICH ARE CAPABLE OF CONVERTING ARABINOSE. The invention relates to a process for the production of cells which are capable of converting arabinose, comprising the following steps: a) Introducing into a host strain that cannot convert arabinose, the genes AraA, araB and araD, this cell is designated as constructed cell; b) Subjecting the constructed cell to adaptive evolution until a cell that converts arabinose is obtained, c) Optionally, subjecting the first arabinose converting cell to adaptive evolution to improve the arabinose conversion; the cell produced in step b) or c) is designated as first arabinose converting cell; d) Analysing the full genome or part of the genome of the first arabinose converting cell and that of the constructed cell; e) Identifying single nucleotide polymorphisms (SNP's) in the first arabinose converting cell; and f) Using the information of the SNP's in rational design of a cell capable of converting arabinose; g) Construction of the cell capable of converting arabinose designed in step f).
US2011269200	SANNY TONY et al.	EE.UU.	INCREASED ETHANOL PRODUCTION BY GENETIC ENGINEERING OF MICROORGANISMS TO EXPRESS HEMOGLOBIN. The present disclosure describes novel bacterial strains which express a pyruvate decarboxylase gene and at least one alcohol dehydrogenase gene from a bacteria of the genus Zymomonas and also express a hemoglobin gene from a bacteria of the genus Vitreoscilla. The present disclosure further describes methods for producing fermentation products with a microorganism which expresses a pyruvate decarboxylase gene and at least one alcohol dehydrogenase gene from a bacteria of the genus Zymomonas and also express a hemoglobin gene from a bacteria of the genus Vitreoscilla. Further the present disclosure describes methods for increasing production of a fermentation product comprising genetically engineering a microorganism which expresses a xylose isomerase gene to also express a hemoglobin gene from a bacteria of the genus Vitreoscilla.
WO2011132836	UNIV EWHA IND COLLABORATION et al.	Corea	ETHANOL-RESISTANT YEAST GENE, AND USE THEREOF. The present invention relates to a gene involved in ethanol resistance, a yeast strain transformed by using the same, and a use thereof. The yeast strain of the present invention can grow in a high concentration of ethanol, preferably in 6-15% ethanol, and can grow in high osmotic conditions, preferably in 30-40% glucose or sucrose. The present invention will be used in a more effective production of ethanol by inventing a strain showing resistance to a high concentration of glucose and ethanol. In addition, the strain will be practical as a super-strain of highly efficient ethanol production, having resistance to various stresses generated in a bioethanol production process.

FERMENTACIÓN DE AZÚCARES

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011128060	ETH ZUERICH et al.	Suiza	PROCESS FOR THE DIRECT PRODUCTION OF FERMENTATION PRODUCTS FROM BIOMASSES IN A BIOFILM REACTOR. A dense but oxygen permeable membrane separates the oxygen supply compartment from the fermentation compartment, which contains all microorganisms, a nutrient medium and the pretreated lignocellulose. The oxygen, necessary for the growth and the activity of the aerobic cellulolytic enzymes producing microorganisms is solely transported from the oxygen supply compartment through the membrane, which leads to an oxygen gradient within the biofilm growing on the membrane. The oxygen rich zone of the biofilm lies on the membrane whereas the biofilm further away from the membrane as well as the surrounding nutrient medium are oxygen depleted. In the aerobic biofilm the extra-cellular enzymes are produced in situ and are released into the nutrient medium where they hydrolyse the cellulose and hemicellulose into soluble monosugars, which are then converted to the desired fermentation product by suitable microorganisms in the anaerobic zones of the reactor. The process can be run in batch mode as well as in a continuous mode.
WO2011127545	UNIV RIO DE JANEIRO	Brasil	METHOD FOR PRODUCING ETHANOL FROM RESIDUAL BIOMASS FROM THE CELLULOSE INDUSTRY. The present invention pertains to the field of chemical engineering, and its main subject matter is a method for producing ethanol from residual biomass from the cellulose industry. The biomass is processed in a single reaction vessel in which enzymatic hydrolysis and fermentation (saccharification) occur simultaneously in an advantageous manner. The invention also relates to the ethanol produced by the method described.
WO2011125056	INBICON AS et al.	Dinamarca	RAPID AND LOW COST ENZYMATIC FULL CONVERSION OF LIGNOCELLULOSIC BIOMASS. Methods are provided for improved processing of lignocellulosic biomass in bioethanol production. Fiber fraction of hydrothermally pretreated lignocellulosic biomass is subject to separate hydrolysis and fermentation (SHF) or prehydrolysed and subject to simultaneous saccharification and fermentation (SSF) at high initial loadings of cellulase enzymes, > 15 FPU/g DM or preferably > 17 FPU/ g DM. The cellulase enzymes are subsequently recycled and used in subsequent hydrolysis cycles along with a lower dose supplementation of fresh enzyme. Loss of enzyme activity between hydrolysis cycles is offset by improved overall process advantage.
US8030039	AMERICAN PROCESS INC	EE.UU.	METHOD FOR THE PRODUCTION OF FERMENTABLE SUGARS AND CELLULOSE FROM LIGNOCELLULOSIC MATERIAL. A method for the production of fermentable sugars and high viscosity cellulose from lignocellulosic material in a batch or continuous process is provided. Lignocellulosic material is fractionated in a fashion that cellulose is removed as pulp, cooking chemicals can be reused, lignin is separated for the production of process energy, and hemicelluloses are converted into fermentable sugars, while fermentation inhibitors are removed. High yield production of alcohols or organic acids can be obtained from this method using the final reaction step.

FERMENTACIÓN DE AZÚCARES

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011124815	VALAGRO CARBONE RENOUVELABLE POITOU CHARENTES et al.	Francia	METHOD FOR OBTAINING A FERMENTABLE PRODUCT FROM POLLUTED LIGNO-CELLULOSIC BIOMASS. The invention relates to a method for obtaining a fermentable product intended for the production of metabolites by fermentation, characterised in that said method includes the following steps: a) detoxification of a polluted ligno-cellulosic raw material including at least one polluting component; solid-liquid extraction in order to extract the polluting component (s) from the ligno-cellulosic raw material by solubilisation using at least one solvent; recovery of the cleaned ligno-cellulosic raw material; b) pre-treatment of the cleaned ligno-cellulosic raw material by defibration; c) enzymatic hydrolysis of the pre-treated ligno-cellulosic raw material in the presence of cellulose, and obtaining a fermentable product; d) optional purification of the resulting fermentable product.; The invention also relates to the use of the resulting fermentable product for producing metabolites by fermentation, as well as to a specific method for producing ethanol from the fermentable product.
WO2011116320	POET RES INC et al.	EE.UU.	SYSTEM FOR TREATMENT OF BIOMASS TO FACILITATE THE PRODUCTION OF ETHANOL. A method for treating biomass to be supplied to a fermentation system for the production of a fermentation product is disclosed. The method comprises the steps of pretreating the biomass into pre-treated biomass; separating the pre-treated biomass into a first component comprising glucan and a second component comprising sugars; providing a combined component comprising at least a portion of the first component and at least a portion of the second component; and treating the combined component of the pre-treated biomass into a treated component comprising glucose by application of an enzyme formulation. A system for treating biomass to be supplied to a fermentation system for the production of a fermentation product is also disclosed. The system comprises an apparatus configured to pre-treat the biomass; a separator configured to separate the pre-treated biomass; and a vessel configured to contain a combined component.
US2011223639	GENENCOR INT	EE.UU.	PROCESS FOR CONVERSION OF GRANULAR STARCH TO ETHANOL. The present invention concerns a method of producing glucose from a granular starch substrate comprising, contacting a slurry comprising granular starch obtained from plant material with an alpha-amylase at a temperature below the starch gelatinization temperature of the granular starch to produce oligosaccharides and hydrolyzing the oligosaccharides to produce a mash comprising at least 20% glucose and further comprising fermenting the mash to obtain ethanol.

HIDRÓLISIS ENZIMÁTICA DE RESIDUOS AGROALIMENTARIOS LIGNOCELULÓSICOS

El grupo de investigación AGR-203 de la Universidad de Cádiz (UCA) ha puesto en marcha el proyecto "Hidrólisis enzimática de residuos agroalimentarios lignocelulósicos para bio-refineria", enmarcado en el programa científico ceiA3, que pretende producir enzimas a bajo coste, a través de una fermentación en estado sólido, para facilitar la produción de bioetanol. Los residuos agrícolas de partida son el orujo de uva, la cáscara de la naranja, la paja de trigo y la cascarilla del arroz.

Este tipo de fermentaciones suelen ser mucho más económicas y presentan menor riesgo de contaminación que las que se realizan en cultivos sumergidos. Se centra en el hecho de que el sustrato del cual se alimenta el microorganismo (en este caso un tipo de hongo) es un sólido, por ejemplo, un residuo agrícola. El hongo crece directamente sobre el sustrato sólido, formando una película sobre él. Los residuos deben de recibir previamente algún tipo de pretratamiento (ultrasonidos, irradiaciones o microondas), ya que es necesario que se degrade previamente el sólido para facilitar el crecimiento del hongo y que acceda mejor al interior de los polímeros.

Los científicos de la UCA quieren probar qué sucede al trabajar con el orujo de uva, la cáscara de la naranja, la paja de trigo y la cascarilla del arroz combinados con tres microorganismos diferentes, mediante fermentaciones en estado sólido. Están interesados en establecer cuál es el hongo más adecuado, es decir, el que produce mayor cantidad de enzimas y con mejores actividades, para digerir luego esos mismos residuos y obtener azúcares fermentables destinados a la producción de bioetanol.

PRODUCCIÓN DE BIOCOMBUSTIBLES A PARTIR DE ÁLAMOS

Un equipo científico de la Universidad de Purdue (Indiana, EE.UU.) ha iniciado un proyecto de investigación de cinco años de duración para evaluar la viabilidad de algunas especies de álamo como materia prima para la producción de bioetanol.

Este tipo de árboles se han señalado como potenciales materias primas en la categoría de biomasa forestal para la producción de biocombustibles por las siguientes razones: crecen rápidamente, producen más volumen de biomasa que la mayoría de los cultivos de campo, se pueden prorrogar de forma vegetativa, son cultivos plurianuales que podrían no requerir tantos cuidados como los cultivos anuales del tipo del maíz y la soja y, a diferencia de los cultivos de campo, los álamos pueden recolectarse en cualquier época del año y enviarse directamente a las fábricas de etanol, evitandose los productores las operaciones de secado y almacenamiento.

Este estudio analizará sesenta y nueve variedades de álamo y su rendimiento con diferentes suelos y climas, enfermedades e insectos y regímenes de fertilización y riego. También se analizarán aspectos relacionados con la plantaciión y la recolección.

OBTENCIÓN DE HIDRÓGENO A PARTIR DEL BIOGÁS GENERADO EN VERTEDEROS

La empresa Konectia, "spin off" de la Universidad de Cádiz, es coordinadora del proyecto "Obtención de hidrógeno a partir de biogas". El objetivo del proyecto es crear un sistema compacto que permita generar una fuente de energía limpia y eficiente como es el hidrógeno en los distintos vertederos de Andalucía.

Los Residuos Sólidos Urbanos (RSU) acumulados en los vertederos son una fuente importante de producción de metano. En este proyecto el metano se somete a un reformado catalítico que consiste en una sucesión de reacciones químicas en presencia de un catalizador de manera que el metano reacciona con agua para producir hidrógeno y monóxido de carbono. Posteriormente, el hidrógeno se purifica eliminando el monóxido con ayuda de una serie de etapas físicas, químicas y biológicas que permiten eliminar los distintos contaminantes presentes en el biogás.

La etapa fundamental de la depuración es la eliminación del ácido sulfhídrico, que se depura mediante una tecnologóa optimizada por Konectia y que consiste en el uso de bacterias específicas y que está patentado por la UCA.

El hidrógeno obtenido puede ser comprimido y almacenado hasta su posterior utilización.

UTILIZACIÓN DE AGUA SUPERCRÍTICA PARA PRODUCIR ETANOL

Renmatix, una start-up con sede en Kennesaw, en el Estado de Georgia (EE.UU.) está usando agua supercrítica, es decir agua sometida a altas presiones y temperatura, para transformar astillas de madera en azúcar que, a continuación, puede fermentarse para fabricar biocombustibles y otros productos químicos. Bajo estas condiciones, la celulosa se disuelve y se convierte rápidamente en moléculas de azúcar. Las reacciones tardan segundos, comparadas con otros procesos que tardan varios días. Debido a la alta velocidad de la reacción, un pequeño equipo puede producir una gran cantidad de azúcar, lo que contribuiría a reducir los costes de capital. La empresa afirma que el proceso puede producir azúcar al mismo precio que partiendo de la caña de azúcar, algo que ya se está usando para producir biocombustibles rentables en Brasil. Una vez creado el azúcar, se puede fabricar etanol usando la misma tecnología que en una planta convencional.

Por ahora, Renmatix solo ha probado la tecnología a pequeña escala, usando una planta capaz de procesar tres toneladas de astillas de madera al día.

Sin embargo, trabajar con agua supercrítica presenta sus retos. Los materiales susceptibles de utilización con agua supercrítica son limitados, así como la existencia de reacciones extremadamente rápidas puede conducir a la formación de productos derivados no deseados. En proyectos anteriores, el agua supercrítica produjo la deshidratación de parte del azúcar generado, resultando compuestos capaces de envenenar la levadura que se usa para convertir el azúcar en etanol y el proceso presentaba un rendimiento relativamente bajo. Estas limitaciones parecen haber sido superadas en las investigaciones desarrolladas por Renmatix.

Descomponer la hemicelulosa produce otro tipo de azúcar llamado xilosa, que no funciona con la fermentación convencional, pero que se puede usar para algunos biocombustibles avanzados y para procesos bioquímicos.

TECNOLOGÍAS QUÍMICAS

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011148981	HITACHI PLANT TECHNOLOGIES LTD et al.	Japón	METHOD FOR PRODUCING BIOFUEL. Disclosed are a series of processes for producing a biofuel, which include a technique wherein carbon dioxide serving as a carbon source is converted into a biomass by photosynthesis by photosynthetic microorganisms and the production of a biofuel is carried out after that. Specifically disclosed is a method for producing a biofuel, which is characterized by comprising: a culture step (S1) wherein photosynthetic microorganisms that accumulate a fat or oil and a carbohydrate in the cells thereof are cultured in a broth; a fat or oil conversion step (S2) wherein the carbohydrate accumulated in the cells of the photosynthetic microorganisms, which have been cultured in the broth, is converted into a fat or oil; an extraction step (S3) wherein the oil or fat is extracted from the cells of the photosynthetic microorganisms; and a modification step (S4) wherein the extracted fat or oil is modified.
US2011294906	HUFFMAN GERALD P	EE.UU.	INCORPORATION OF CATALYTIC DEHYDROGENATION INTO FISCHER-TROPSCH SYNTHESIS TO LOWER CARBON DIOXIDE EMISSIONS. A method for producing liquid fuels includes the steps of gasifying a starting material selected from a group consisting of coal, biomass, carbon nanotubes and mixtures thereof to produce a syngas, subjecting that syngas to Fischer-Tropsch synthesis (FTS) to produce a hyrdrocarbon product stream, separating that hydrocarbon product stream into C1-C4 hydrocarbons and C5+ hydrocarbons to be used as liquid fuels and subjecting the C1-C4 hydrocarbons to catalytic dehydrogenation (CDH) to produce hydrogen and carbon nanotubes. The hydrogen produced by CDH is recycled to be mixed with the syngas incident to the FTS reactor in order to raise the hydrogen to carbon monoxide ratio of the syngas to values of 2 or higher, which is required to produce liquid hydrocarbon fuels. This is accomplished with little or no production of carbon dioxide, a greenhouse gas. The carbon is captured in the form of a potentially valuable by-product, multi-walled carbon nanotubes (MWNT), while huge emissions of carbon dioxide are avoided and very large quantities of water employed for the water-gas shift in traditional FTS systems are saved.
US2011289830	OLD DOMINION UNIVERSITY RES FOUNDATION	EE.UU.	PRODUCTION OF GLYCEROL-RELATED PRODUCTS FROM A HIGH TEMPERATURE REACTION. Disclosed are processes for producing glycerol related products. One process comprises introducing a biomass and an alkylation reagent to a substantially oxygen free environment, hydrolyzing at a temperature at or above 200 DEG C. one or more lipid glycerides in the biomass, methylating one or more fatty acids in the biomass with methyl groups from the alkylation reagent, wherein the hydrolyzing and methylating occur contemporaneously and separating resulting biodiesel and methylated glycerol-related products from a residue of the biomass by condensation.
EP2390341	NESTE OIL OYJ	Finlandia	PROCESS AND MICROORGANISMS FOR PRODUCTION OF LIPIDS. The present invention provides a process for producing lipids for biofuel or lubricant and Streptomyces bacteria used in the process. The process comprises cultivating bacterial cells of the genus Streptomyces in a medium comprising organic waste(s) or residue(s) or mixtures thereof as carbon and/or nutrient source(s), recovering lipids from the cells of said bacteria or from the cultivation medium, and using the recovered lipids or a fraction thereof as biofuel and/or lubricant, or as a starting material for biofuel and/or lubricant production. In addition, in one aspect the invention provides products obtained by using the process according to this disclosure.

TECNOLOGÍAS QUÍMICAS

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011144192	LURGI GMBH et al.	Alemania	PROCESS FOR PRODUCTION OF BIODIESEL. A process for continuous production of biodiesel from vegetable oils or animal fats by transesterification with methanol or ethanol to give crude fatty acid alkyl esters, subsequent washing with water in a wash column to remove water-soluble impurities, subsequent drying by vaporization of the water content and subsequent removal of steryl glycosides by adsorption onto calcium bentonite, wherein the adsorption column (s) used is/are regenerated in a first step, for desorption of the steryl glycosides, by rinsing with a mixture consisting of fatty acid alkyl esters and methanol or ethanol, and in a subsequent second step, for removal of methanol residues, by rinsing with fatty acid alkyl esters or with gaseous nitrogen or carbon dioxide.
WO2011133866	SENESCO TECHNOLOGIES INC et al.	EE.UU.	TRANSGENIC ALGAE WITH ENHANCED OIL EXPRESSION. The present invention provides transgenic algal cells that produce an increased amount of oil, methods of making transgenic algal cells, and methods of obtaining biofuel from the transgenic algal cells.
US2011258909	NOF CORP	Japón	FLOW IMPROVER FOR BIODIESEL FUELS. A flow improver for biodiesel fuels, comprising an [alpha]-olefin polymer with a weight average molecular weight of 50,000 to 500,000 that is obtained by polymerization of an [alpha]-olefin mixture (C), wherein the mole ratio (A)/(B) of an [alpha]-olefin (A) with 10 carbon atoms and an [alpha]-olefin (B) with 14 to 18 carbon atoms is (A)/(B)=10/90 to 60/40.
US2011250659	TARGETED GROWTH INC	EE.UU.	MODIFIED PHOTOSYNTHETIC MICROORGANISMS FOR PRODUCING LIPIDS. This disclosure describes genetically modified photosynthetic microorganisms, e.g., Cyanobacteria, that contain one or more exogenous genes encoding a phospholipase and/or thioesterase, which are capable of producing an increased amount of lipids and/or fatty acids. This disclosure also describes genetically modified photosynthetic microorganisms that contain one or more exogenous genes encoding a diacyglycerol acyltransferase, a phosphatidate phosphatase, and/or an acetyl-CoA carboxylase, which are capable of producing increased amounts of fatty acids and/or synthesizing triglycerides, as well as photosynthetic microorganism comprising mutations or deletions in a glycogen biosynthesis or storage pathway, which accumulate a reduced amount of glycogen under reduced nitrogen conditions as compared to a wild type photosynthetic microorganism.
WO2011116568	UNIV EAST CHINA SCIENCE & TECH et al.	China	PROCESS FOR PREPARING BIODIESEL CONTAINING NO BYPRODUCT GLYCEROL. A process for preparing biodiesel containing no byproduct glycerol comprises: mixing transesterification reagent with animal-vegetable fat at a temperature between 20 and 100 DEG C for 2 to 32 hours under the action of catalyst, wherein the molar ratio of the transesterification reagent to the animal-vegetable fat is 2: 1 -30: 1 and the addition amount of the catalyst is 1-30 wt.% of the animal-vegetable fat; filtering to remove the catalyst; distilling to remove the excessive transesterification reagent; and obtaining the biodiesel product. The catalyst is easy to be separated, need no washing and produce no wastewater. It is possible to reuse the catalyst. The transesterification reaction using the fat and the transesterification reagent can produce the product which can be directly used as fuels. The reaction produces no byproduct glycerol and improves the utilization rate of raw materials.

TECNOLOGÍAS QUÍMICAS

Nº DE PUBLICACIÓN	SOLICITANTE	PAÍS ORIGEN	CONTENIDO TÉCNICO
WO2011107977	TRANS BIO DIESEL LTD	Israel	A PROCESS FOR THE ENZYMATIC SYNTHESIS OF FATTY ACID ALKYL ESTERS. Disclosed are an enzymatic batchwise or continuous process for the production of fatty acid alkyl esters for use in the biofuels, food and detergent industries and a system therefor. The process utilizes enzymes immobilized on a hydrophobic resin mixed with a fatty acid source and an alcohol or alcohol donor in the presence of an alkaline or mild alkaline aqueous buffer, or in the presence of water solution. The production process for fatty acid alkyl esters is carried out by transesterification or esterification simultaneously or sequentially. The biocatalyst activity is maintained with no significant activity losses in multiple uses and also avoids the accumulation of glycerol and water by-products or other hydrophilic compounds on the biocatalyst

NESTE OIL INAUGURA UNA MACRO-PLANTA DE BIODIÉSEL EN ROTTERDAM

Neste Oil inaugura en Diciembre en Rotterdam una planta de producción de biodiésel. La planta se caracteriza por su elevado volumen de producción y la gran variedad de productos de partida utilizados (cultivos energéticos, residuos agroalimentarios, aceites de algas y vegetales usados y grasas animales). Con esta instalación, Neste Oil es propietaria de dos de las mayores instalaciones productoras de biocarburantes del mundo. La otra está en Singapur y presenta las mismas características.

Como la planta asiática, la de Rotterdam también produce biodiésel con la tecnología NExBTL, patentada por la compañía finlandesa.

Según datos aportados por Neste Oil, la planta, que se acerca al concepto de biorrefinería, tiene una capacidad de producción anual de 800000 toneladas y ha conllevado una inversión de 670 millones de euros. El sistema NExBTL admite una amplia variedad de aceites vegetales, subproductos del refino de aceites vegetales (por ejemplo, estearina), así como aceites usados y grasas que cumplen con los estrictos criterios de sostenibilidad incluidos en el Directiva de Energías Renovables de la UE. Entre esas materias primas también está el aceite de algas, gracias sobre todo a los estudios que la compañía finlandensa desarrolla junto a varios organismos de investigación holandeses.

La información de Neste Oil añade que la producción está reconocida por el ISCC (International Sustainability and Carbon Certification), uno de los siete primeros esquemas de certificación de sostenibilidad de biocarburantes aprobados por la Comisión Europea.

Con la factoría de Rotterdam, que emplea a 150 personas, Neste Oil suma anualmente una capacidad de producción de dos millones de toneladas de biocarburantes. A las mencionadas de Singapur y Holanda, se añaden dos plantas en la refinería de Porvoo, en Finlandia, que entraron en funcionamiento en 2007 y 2009 y tienen una capacidad total de 380000 toneladas anuales.

IDENTIFICACIÓN DE MICROALGAS PRECURSORAS DE BIODIÉSEL

La compañía biotecnológica española Biomar Microbial Technologies ha identificado seis algas susceptibles de ser utilizadas como precursoras de biodiésel, cultivadas con sales y luz solar y sin modificación genética.

Esta empresa cuenta con la mayor colección de compuestos marinos útiles de toda Europa, recopilada durante los últimos quince años, con más de 58000 extractos y 1500 compuestos de caldos de fermentación disponibles para ser

utilizados en ensayos clínicos con diferentes aplicaciones dentro del sector de los biocombustibles, la alimentación y la salud.

Los primeros ensayos para producir biodiésel se realizaron en el laboratorio, y, posteriormente, el cultivo se trasladó a piscinas de 400 litros en las instalaciones de Biomar, obteniéndose biodiésel a partir de los aceites que surgen de la conversión de la biomasa de microalgas en un proceso de transesterificación. La producción a gran escala se podrá realizar, previsiblemente, aumentando la disponibilidad del espacio de cultivo de dichas microalgas, fase en la que, actualmente, se está buscando un colaborador.

RÉCORD DE PRODUCCIÓN DE BIODIÉSEL EN CANDEIAS

La planta de biodiésel que la empresa estatal brasileñal Petrobras Biocombustibles posee en Candeias, en el estado de Bahía, al nordeste del país, y es su principal unidad del parque productor del mencionado biocarburante, registró en Noviembre un nuevo récord mensual, con 13.86 millones de litros de biodiésel. La marca anterior era de Marzo pasado, cuando fueron producidos 10.63 millones de litros.

La unidad también registró un nuevo récord diario, con una producción de 570 mil litros el 26 de Noviembre. "El último Récord diario ocurrió el 1 de Octubre, con 565 mil litros producidos en un único día", destacó la compañía en un comunicado.

De acuerdo con Petrobras, la unidad de Candeais comenzó a operar con capacidad de producir 57 millones de litros de biodiésel por año, oferta elevada a 217.2 millones de litros de biocombustible por año después de algunos ajustes en los procesos y obras de duplicación.

Entre plantas propias y compartidas, Petrobras Biocombustibles tiene capacidad total para producir aproximadamente 700 millones de litros al año.

Boletín elaborado con la colaboración de:

Fundación OPTI
Observatorio de Prospectiva Tecnológica Industrial

Montalbán, 3. 2º Dcha.
28014 Madrid
Tel: 91 781 00 76
E-mail: fundacion_opti@opti.org
www.opti.org

MINISTERIO DE INDUSTRIA, ENERGÍA Y TURISMO
Oficina Española de Patentes y Marcas

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

GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA E INNOVACIÓN
Ciemat
Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas

Avda Complutense 22.
28040 Madrid
Tel: 91 346 08 99
e-mail: marta.perez@ciemat.es
www.ciemat.es