

Search history

Search 1: lignocel* and (hydrola* or cellula*) and ferment and enzyme (Results 1144)
Search 2: 1 and (Steam and vapor or vapeur) (Results 314)
Search 3: 2 and (oxygen) and filter and (time or hr or hours or minutes or days) (Results 154)
Search 4: 3 and inhibit* (Results 134)
Search 5: 4 and hydrolis* (Results 7)
Search 6: 4 and (hydrolys* or hydrolis*) (Results 132)
Search 7: (6) AND IPC=(C12 OR C13) (Results 126)
Search 8: 7 and process and biomass (Results 125)
Search 9: 8 and solids (Results 114)
Search 10: 9 not solvent* (Results 10)
Search 11: 8 and TAC=(process and not (Acid or alkaline)) (Results 13)

Title: RECOMBINANT ZYMONOMAS FOR PENTOSE FERMENTATION

Abstract: Source: US5514583A [EN] The invention relates to microorganisms which normally do not ferment a pentose sugar and which are genetically altered to ferment this pentose to produce ethanol. A representative example is Zymomonas mobilis which has been transformed with E. coli xylose isomerase, xylulokinase, transaldolase and transketolase genes. Expression of the added genes are under the control of Zymomonas mobilis promoters. This newly created microorganism is useful for fermenting pentoses and glucose, produced by hydrolysis of hemicellulose and cellulose, to produce ethanol.

Classifications:

International (IPC 8-9): C12N1/21 C12N15/11 C12N15/52 C12N15/61 C12N15/63 C12N15/74 C12N9/10 C12N9/90 C12P7/06

C12P7/10 (Advanced/Invention);

C12N1/21 C12N15/63 C12N15/70 C12P7/06 C12R1/01 (Advanced/Non-invention);

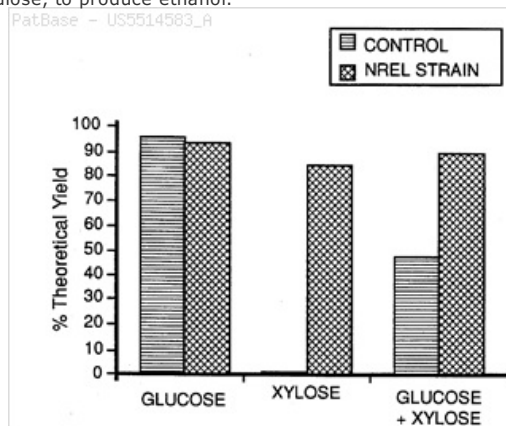
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European: C12N15/52 C12N9/10 C12N9/90 C12P7/06 D C12R1/01 M12N207/00 Y02E50/16 Y02E50/17

US: 435/161 435/163 435/165 435/243 435/252.3 435/320.1 435/822 536/23.2 536/23.7 935/29 935/60 935/72



Family:

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US5843760 A	19981201	US19970851767	19970506
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Probable Assignee: ALLIANCE FOR SUSTAINABLE ENERGY LLC

Assignee(s): (std): MIDWEST RES INST ; MIDWEST RES INST KANSAS CITY ; MIDWEST RESEARCH INST ; MIDWEST RESEARCH INSTITUTE

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D

Inventor(s): MILLAN JAMES D MC

Agent(s): PHILLIPS ORMONDE FITZPATRICK; FINLAYSON AND SINGLEHURST

Designated states: AL AM AT AU AZ BA BB BE BG BR BY CA CH CN CU CY CZ DE DK EE ES FI FR GB GE GR HU IE IL IS IT JP
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TM TR TT UA UG UZ VN YU ZW

Title: NON-PRESSURISED PRE-TREATMENT, ENZYMATIC **HYDROLYSIS** AND FERMENTATION OF WASTE FRACTIONS

Abstract: Source: US2009004714A [EN] The present invention relates to a **process** for production of fermentation products, including bioethanol by non-pressurised pre-treatment, enzymatic **hydrolysis** and fermentation of waste fractions containing mono- and/or polysaccharides, having a relatively high dry matter content. The **process** in its entirety, i.e. from non-pressurised pre-treatment over enzymatic **hydrolysis** and fermentation to sorting of **fermentable** and non-**fermentable** solids can be **processed** at a relatively high dry matter content in a single vessel or similar device using free fall mixing for the mechanical **processing** of the waste fraction.

Classifications:

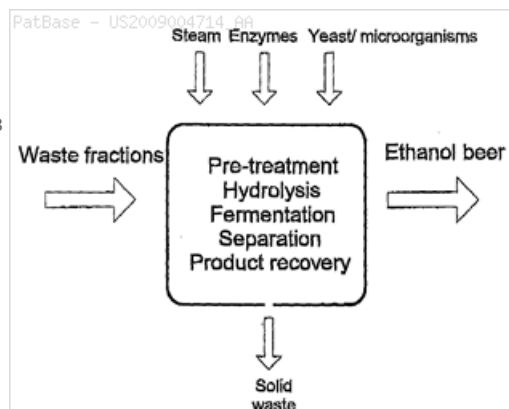
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International (IPC 1-7): C12M1/10

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US: 435/162 435/162S 435/163 435/163S 435/165 435/165P 435/72 435/72S 435/99 435/99P



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IN278111 B	20161216	IN2008DN03323	20080422
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Priority:

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US20120405262 20120225	JP20080532897 20060929	JP20120149484 20060929
WO20061B02707 20060929		

Probable Assignee: RENESCENCE A S

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DONG ENERGY POWER A S ; DONG ENERGY GENERATION A AND S ; DONG ENERGY GENERATION A S

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Agent(s): SHELSTON IP; SHELSTON IP PTY LTD; BORDEN LADNER GERVAIS LLP; CARLSEN NIELS G; TANAKA MITSUO; YAMAZAKI HIROSHI; BUDDE SCHOU AND OSTENFELD A S; WOMBLE BOND DICKINSON US LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: FERMENTATIVE PRODUCTION OF ORGANIC COMPOUNDS USING SUBSTANCES CONTAINING DEXTRIN

Abstract: Source: US2008318287A [EN] A **process** for the production of at least one organic compound having at least 3 C atoms or having at least 2 C atoms and at least 1N atom by means of fermentation, comprises the following steps: a1) milling a starch feedstock, thus obtaining a millbase which comprises at least part of the nonstarchy solid constituents of the starch feedstock; a2) suspending the millbase in an aqueous liquid and liquefying the millbase present in the aqueous liquid in the presence of at least one starch-liquefying **enzyme**, obtaining an aqueous dextrin-containing medium (1) which comprises at least a part of the nonstarchy solid constituents of the starch feedstock; and b) using the aqueous dextrin-containing medium (1) in a fermentation for culturing a microorganism which is capable of overproducing the organic compound; **enzymes** which hydrolyze the dextrans to monosaccharides being added in an amount of less than 0.001 percent by weight based on the total weight of the starch feedstock employed, or not at all.

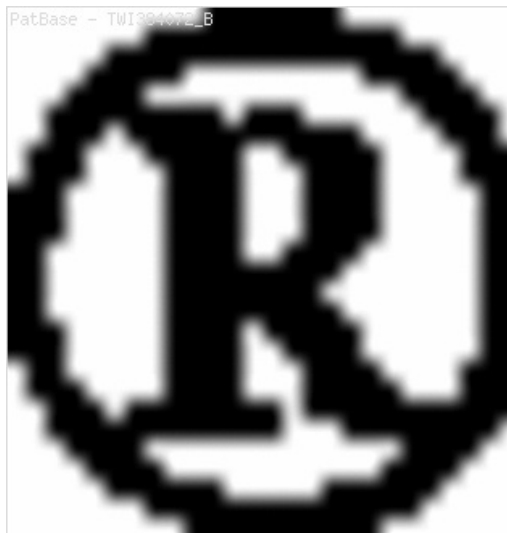
Classifications:

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CPC: C12P7/26 C12P7/42 C12P7/62 C12P7/6418 C12P7/6427 C12P7/6463 C12P13/00 C12P13/005 C12P13/04 C12P19/30 C12P19/38 C12P19/14

European: C12P13/00 C12P13/00F C12P13/04 C12P19/14 C12P19/30 C12P19/38 C12P7/26 C12P7/42 C12P7/62 C12P7/64C2 C12P7/64C4 C12P7/64E2D

US: 435/115 435/115P 435/148

PatBase - TWI384072_B



Family:

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Priority:

DE200510056669 20051128 EP20060819766 20061127 WO2006EP68927 20061127

Probable Assignee: BASF SE

Assignee(s): (std): BASF AG ; BASF SE ; BOY MATTHIAS ; FREYER STEPHAN

Assignee(s): BASF AKTIENGESELLSCHAFT

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Agent(s): ROBIC; REITSTOETTER - KINZEBACH; FUJITA TAKASHI; ISHII SADAJI; HIRAKI YUSUKE; CONNOLLY BOVE LODGE AND HUTZ LLP; NOVAK DRUCE CONNOLLY BOVE AND QUIGG LLP

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Title: METHOD FOR PRODUCING GLUCOSE BY ENZYMATIC **HYDROLYSIS** OF CELLULOSE THAT IS OBTAINED FROM MATERIAL CONTAINING LIGNO-CELLULOSE USING AN IONIC LIQUID THAT COMPRISES A POLYATOMIC ANION

Abstract: Source: US2010081798A [EN] The present invention relates to a **process** for preparing glucose from a **lignocellulose**-comprising starting material, in which this is firstly treated with an ionic liquid and subsequently subjected to an enzymatic **hydrolysis**. The invention further relates to a **process** for preparing microbial metabolites, especially ethanol, in which the glucose obtained is additionally subjected to a fermentation.

Classifications:

International (IPC 8-9): C07G1/00 C07H3/02 C12P19/02 C12P19/14 C12P7/10 C12P7/14 (Advanced/Invention);

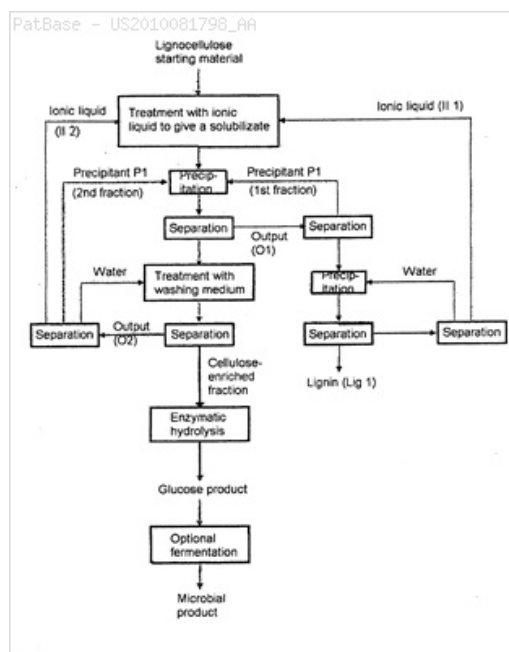
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CPC: C12P19/02 Y02E50/16

European: C12P19/02 Y02E50/16

US: 435/105 435/105S 435/162 530/500 536/1.11 536/1.110S



Family:

Publication number	Publication date	Application number	Application date
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Priority:

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Probable Assignee: BASF SE

Assignee(s): (std): BASF SE ; BRODERSEN JULIA ; STEGMANN VEIT ; MASSONNE KLEMENS ; D ANDOLA GIOVANNI ; FREYER STEPHAN ; BALENSIEFER TIM ; BASF AG

Assignee(s): BASF AKTIENGESELLSCHAFT ; SCHROEDER HARTWIG ; FREYER STEFAN

Inventor(s): (std): ANDOLA GIOVANNI D ; BALENSIEFER TIM ; BRODERSEN JULIA ; D ANDOLA GIOVANNI ; FREYER STEFAN ; FREYER STEPHAN ; GIOVANNI D ANDOLA ; HARTWIG SCHROEDER ; JULIA BRODERSEN ; KLEMENS MASSONNE ; MASSONNE KLEMENS ; MASSONNE KLEMENS ; STEGMANN VEIT ; STEPHAN FREYER ; TIM BALENSIEFER ; VEIT STEGMANN ; SCHROEDER HARTWIG

Inventor(s): STEFAN FREYER ; SCHROEDER HARTWIG ; KLEMENS MASSONE ; D'ANDOLA GIOVANNI

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; ROBIC; REITSTOETTER KINZEBACH; OBLON SPIVAK MCCLELLAND MAIER AND NEUSTADT LLP; REITSTOETTER KINZEBACH AND PARTNER

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ
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Title: PROCESSING BIOMASS

Abstract: Source: US2011262985A [EN] Methods are provided for changing a molecular structure of a **biomass** feedstock. The methods include a screw extrusion **process**.

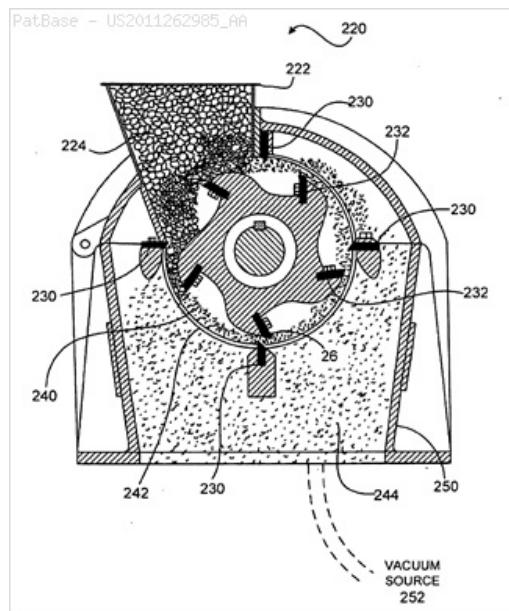
Classifications:

International (IPC 8-9): B01J19/08 B01J19/20 B09B B09B3/00 B09B5/00 B29B9/12 B29B9/16 B29C47/38 C01L1/32 C02F11/04 C07C4/00 C08B1/00 C08H8/00 C08J11/00 C08J3/28 C10B7/10 C10L C10L1/02 C10L1/04 C10L1/32 C10L5/44 C12P C12P19/02 C12P19/14 C12P7/04 C12P7/08 C12P7/10 C12P7/40 C13K1/02 D21C5/00 (Advanced/Invention); B09B3/00 B29B9/16 B29K1/00 B29L31/00 C02F11/04 C08H8/00 C10L1/04 C10L5/44 C12P7/08 C12P7/10 (Advanced/Non-invention); B09B3/00 C07C4/00 C08B1/00 C08H8/00 C10L1/32 C12P7/02 (Core/Invention); C10L (Subclass/Invention)

CPC: C12P2201/00 Y02E50/10 Y02E50/16 Y02E50/30 Y02E50/343 B01J19/085 B01J2219/0879 C12P7/08 C08H8/00 C12P19/02 C08B1/00 B29B9/16 B29K2001/00 C02F11/04 B01J19/20 B09B3/00 C10B7/10 B29L2031/00 C12Y302/01004 B01J2219/12 C12P19/14 B29B9/12 C10L5/44 C12P7/10

European: C10L5/44 C12P7/10 M12P201/00 Y02E50/10 Y02E50/16 Y02E50/30 Y02E50/34B

US: 1/1 162/192 162/50 162/50S 204/157.15 264/470 435/137 435/161 435/163 435/165 435/165P 435/72 435/99

**Family:**

Publication number	Publication date	Application number	Application date
AP201105703 A0	20110630	AP20110005703	20091113
AP201609360 A0	20160831	AP20160009360	20091113
AP3927 A	20161215	AP20110005703	20091113
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AU2014271224 AA	20141218	AU20140271224	20141201
AU2014271224 BB	20170525	AU20140271224	20141201
AU2017216450 AA	20170831	AU20170216450	20170815
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CN102216435 A	20111012	CN200980145586	20091113
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CN105505999 A	20160420	CN201610040222	20091113
CN105506000 A	20160420	CN201610040606	20091113
CN105524946 A	20160427	CN201610039150	20091113
CN105524947 A	20160427	CN201610039151	20091113
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CN105542015 A	20160504	CN201510862085	20091113
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ID201707409 A	20170714	ID2016P0006038	20091113
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Priority:

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WO2009US64307	20091113	US20110099151	20110502	US20140579926	20141222
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Probable Assignee: XYLECO INC

Assignee(s): (std): MEDOFF MARSHALL ; XYLECO INC

Inventor(s): (std): MEDOFF MARSHALL ; MARSHALL MEDOFF

Inventor(s): MODOFF MARSHALL

Agent(s): SPRUSON AND FERGUSON; SMART AND BIGGAR; SIMPSON MARK GEOFFREY; ACHMAD FATCHY; REINHOLD COHN AND PARTNERS; KAWAMOTO KAZUYA; SHIMIZU HATSUSHI; OSAKABE SUGURU; SPRUSON AND FERGUSON ASIA PTE LTD; LEBER PATENT LAW PC; LEBER IP LAW; LEBER CELIA

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: COMPOSITIONS AND METHODS FOR CONVERSION OF **LIGNOCELLULOSIC** MATERIAL TO **FERMENTABLE** SUGARS AND PRODUCTS PRODUCED THEREFROM

Abstract: Source: US2010248320A [EN] The present invention relates to compositions and methods for the conversion of **lignocellulosic** material to **fermentable** sugars and to products produced therefrom (e.g., ethanol, foodstuffs, etc.). In particular, the invention provides **lignocellulose**-degrading compositions (e.g., generated via incubation of microbes with **lignocellulosic** priming feedstock in solid-state fermentation format) and methods of using the same (e.g., in saccharification and/or **hydrolysis** steps (e.g., on ethanologenic feedstock) and as food or feed additives).

Classifications:

International (IPC 8-9): A23K1/06 A23K10/38 C12N1/00 C12N1/14

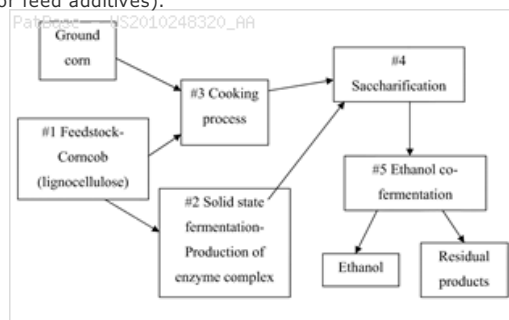
C12N1/20 C12P19/00 C12P7/10 (Advanced/Invention);

A23K1/06 C12N1/00 C12N1/20 C12P7/02 C12P7/10 (Core/Invention)

CPC: Y02P60/873 C12N1/20 C12P7/10 Y02E50/16 A23K10/12 A23K10/38 A23K50/10 A23K50/30 C12N1/14

European: A23K1/00C1 A23K1/06 A23K1/18K A23K1/18M1 C12N1/14 C12N1/20 C12P7/10 Y02E50/16

US: 426/54 426/54S 426/635 426/635S 435/161 435/163 435/165 435/165P



Family:

Publication number	Publication date	Application number	Application date
AU2010226673 AA	20100923	AU20100226673	20100317
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Priority:

US20090160969P 20090317 US20100726248 20100317 WO2010US27703 20100317

Probable Assignee: ALLTECH INC

Assignee(s): (std): ALLTECH INC ; HOSKINS BRIAN J ; LYONS MARK P

Assignee(s): BANK OF AMERICA NA ADMINISTRATIVE AGENT AS

Inventor(s): (std): HOSKINS BRIAN J ; LYONS MARK P

Inventor(s): LYONS MARK P HOSKINS BRIAN J ; MARK P LYONS ; BRIAN J HOSKINS

Agent(s): SPRUSON AND FERGUSON; SMART AND BIGGAR; AUERBACH JONATHAN N; FEDERICO VILLASECA Y COMPANIA; ROBERTSON JAMES ALEXANDER; CASIMIR JONES S C; CASIMIR JONES SC; TYLER J; SISK TYLER J

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: DIGESTIBLE **LIGNOCELLULOSIC BIOMASS** AND EXTRACTIVES AND METHODS FOR PRODUCING SAME

Abstract: Source: US2013217073A [EN] The invention relates to methods for treating **lignocellulosic biomass** to obtain useful products therefrom.

Classifications:

International (IPC 8-9): C07G1/00 C08B1/00 C08B15/02 C08B37/00

C08H7/00 C08H8/00 C08L97/02 C10L5/44 C12N9/14 C12P1/06

C12P19/04 C12P19/14 C12P19/20 C12P7/10 C12R1/885

C13K1/02 (Advanced/Invention);

C12R1/885 (Advanced/Non-invention)

CPC: C12P19/14 C07G1/00 C08L97/02 C10L5/445 C10L5/363 Y02E50/10

Y02E50/30 C08B15/00 C08L97/005 C09D197/005 C10L5/44 C09J197/005

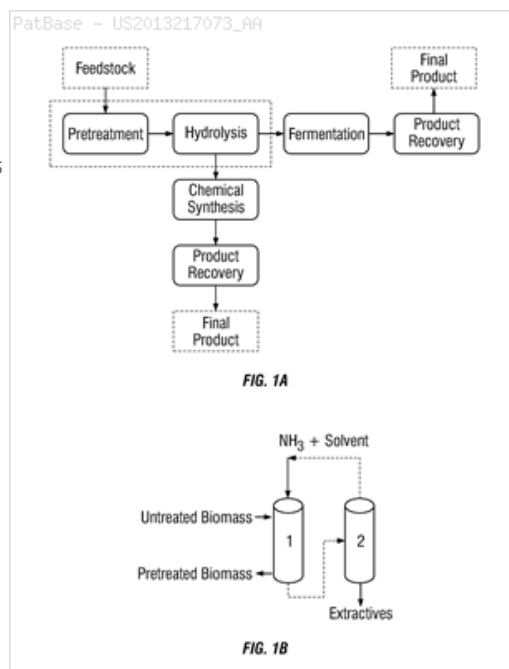
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European: C12P19/20 C12P7/10 M12P201/00 Y02E50/16

US: 106/164.4 127/43 422/129 435/99 44/530 44/535 44/541 44/589

530/500



Family:

Publication number	Publication date	Application number	Application date
AU2011242896 AA	20111027	AU20110242896	20110419
AU2011242896 BB	20150122	AU20110242896	20110419
AU2011242896 CA	20160421	AU20110242896	20110419
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CA2797193 C	20151215	CA20112797193	20110419
CN102939388 A	20130220	CN201180026819	20110419
CN102939388 B	20160803	CN201180026819	20110419
EP2561084 A2	20130227	EP20110772569	20110419
EP2561084 A4	20131023	EP20110772569	20110419
IN09093DN2012 A	20140328	IN2012DN09093	20121019
MX2012012149 A1	20121121	MX20120012149	20110419
MX341792 B	20160902	MX20120012149	20110419
US2013217073 AA	20130822	US20110642052	20110419
US2013244293 AA	20130919	US20130886021	20130502
US2013247456 AA	20130926	US20130835382	20130315
US9650657 BB	20170516	US20110642052	20110419
WO11133571 A2	20111027	WO2011US33079	20110419
WO11133571 A3	20120112	WO2011US33079	20110419

Priority:

US20090236403P	20090824	US20100325560P	20100419	US20110642052	20110419
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WO2011US33079	20110419	US20130886021	20130502	US20130817204P	20130429
US20130835382	20130315	WO2010US46525	20100824		

Probable Assignee: BOARD OF TRUSTEES OF MICHIGAN STATE UNIV

Assignee(s): (std): CHEH ALBERT M ; CHUNDAWAT SHISHIR ; UNIV MICHIGAN STATE ; SOUSA LEONARDO ; DALE BRUCE ; SOUSA LEONARDO DA COSTA ; TRUSTEES OF MICHINGAN STATE UNVERSITY BOARD OF ; BALAN VENKATESH

Assignee(s): BOARD OF TRUSTEES OF MICHIGAN STATE UNIV ; BOARD OF TRUSTEES OF MICHIGAN STATE UNIVERSITY ; BOARD OF TRUSTEES OF MICHINGAN STATE UNIVERSITY ; ENERGY UNITED STATES DEPARTMENT OF

Inventor(s): (std): ALBERT M CHEH ; BRUCE DALE ; CHEH ALBERT ; DALE BRUCE E ; LEONARDO SOUSA ; MARSHALL DEREK ; RITCHIE BRYAN ; SHISHIR CHUNDAWAT ; SOUSA LEONARDO DA COSTA ; VENKATESH BALAN ; SOUSA LEONARDO ; DALE BRUCE ; CHUNDAWAT SHISHIR ; CHEH ALBERT M ; BALAN VENKATESH

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; RIDOUT AND MAYBEE LLP; Danner Stefan; CLARK IP LAW PLC; MADDEN ROBERT B ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG

TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: **PROCESS** FOR THE PRODUCTION OF ALCOHOLS FROM **BIOMASS**

Abstract: Source: US2012107887A [EN] Alcohols useful as fuel compositions are produced from **biomass** by: contacting the **biomass** with a cooking liquor containing 1 to 20 wt percent, based on the cooking liquor, of sodium hydroxide, and under conditions effective to provide a pulp stream containing pulp having a lignin content of 5 percent to 20 percent by weight, based on the pulp washing the pulp stream; hydrolyzing the washed pulp stream with an **enzyme** solution; **fermenting** the hydrolyzate in the presence of a microorganism, one alcohol having 2 to 18 carbon atoms.

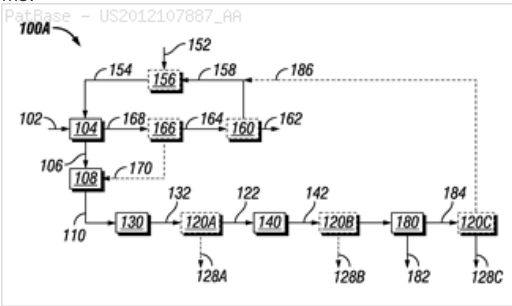
Classifications:

International (IPC 8-9): C12P7/02 C12P7/06 C12P7/10 D21C1/06 D21C11/04 D21C3/02 (Advanced/Invention)

CPC: Y02E50/16 Y02E50/17 D21C3/02 C12P7/10 C12P2201/00 D21C3/222 D21C11/0007

European: D21C3/02 N21C11/00B N21C3/22B

US: 435/155 435/155P



Family:

Publication number	Publication date	Application number	Application date
US2012107887 AA	20120503	US20110252872	20111004
US8889384 BB	20141118	US20110252872	20111004
WO12047832 A2	20120412	WO2011US54686	20111004
WO12047832 A3	20120823	WO2011US54686	20111004

Priority:

US20100390870P 20101007 US20110252872 20111004

Probable Assignee: SHELL OIL CO

Assignee(s): (std): CHHEDA JUBEN NEMCHAND ; FALENDER ALLISON ELAINE ; HEIDE EVERT VAN D ; SHELL INT RESEARCH ; SHELL OIL CO ; VAN DER HEIDE EVERT

Assignee(s): SHELL INT RESEARCH MIJ BV ; SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B V ; SHELL OIL COMPANY

Inventor(s): (std): CHHEDA JUBEN NEMCHAND ; FALENDER ALLISON ELAINE ; HEIDE EVERT VAN D ; VAN DER HEIDE EVERT

Agent(s): IWATA YUKIKO ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: **PROCESSING** PAPER FEEDSTOCKS

Abstract: Source: US2013052687A [EN] Methods of **processing** paper feedstocks are provided, as well as intermediates and products made using such methods. Certain types of paper feedstocks, in particular highly pigmented papers, and/or highly loaded papers such as paper that has been color printed, e.g., magazines, and high basis weight coated papers, e.g., magazine stock, are utilized to produce useful intermediates and products, such as energy, fuels, foods or materials.

Classifications:

International (IPC 8-9): B09B3/00 C08B37/00 C10L1/02 C10L3/06 C12M1/00 C12M1/02 C12M1/40 C12P C12P13/04 C12P19/00 C12P19/02 C12P19/14 C12P3/00 C12P5/00 C12P7/02 C12P7/06 C12P7/08 C12P7/10 C12P7/14 C12P7/40 C13K1/02 C13K13/00 D21B1/00 D21C1/00 D21H25/00 D21H25/02 D21H25/04 D21H25/06

D21H25/18 (Advanced/Invention);

A23L1/30 A23L1/305 (Advanced/Non-invention);

C12P (Subclass/Invention)

CPC: C12P7/14 C12M21/18 C12M29/06 C12M27/00 C12P2201/00

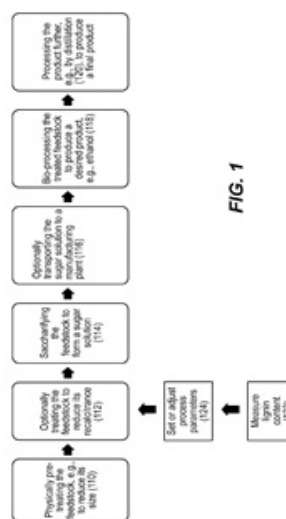
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US: 435/155 435/162 435/166 435/168 435/289.1 435/71.1 435/72 435/99 536/124

PatBase - US2013052687_AA

Patent Application Publication Feb. 28, 2013 Sheet 1 of 3 US 2013/0052687 A1



Family:

Publication number	Publication date	Application number	Application date
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Priority:

AU20120217866	20120214	AU20150246176	20151023	NZ20120612188	20120214
EP20120705586	20120214	AU20170279732	20171221	JP20130553645T	20120214
WO2012US24970	20120214	US20120396365	20120214	US20110442710P	20110214
US20150745208	20150619	NZ20120709188	20120214	US20170596313	20170516

Probable Assignee: XYLECO INC

Assignee(s): (std): MASTERMAN THOMAS ; MASTERMAN THOMAS CRAIG ; MEDOFF MARSHALL ; XYLECO INC

Inventor(s): (std): MASTERMAN THOMAS ; MASTERTON THOMAS ; MEDOFF MARSHALL ; MASTERMAN THOMAS CRAIG

Inventor(s): MARSHALL MEDOFF ; THOMAS MASTERMAN ; MEDOFF MARSHAL

Agent(s): WRAYS; WRAYS PTY LTD; MARKS AND CLERK; SMART AND BIGGAR; JENNINGS TARA ROMAINE; FRKELLY; ACHMAD FATCHY; KORAKH AND CO; KOBAYASHI SUMIKO; KOBAYASHI HIROSHI; OHMORI NORIO; DONALDSON AND BURKINSHAW LLP; FULYA SUEMERALP; LEBER IP LAW; LEBER PATENT LAW P C ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: **PROCESS** FOR ENZYMATIC **HYDROLYSIS** OF **LIGNOCELLULOSIC** MATERIAL AND FERMENTATION OF SUGARS

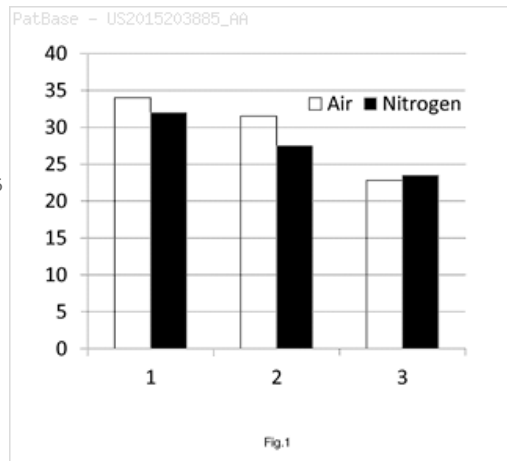
Abstract: Source: US2015203885A [EN] The invention relates to a **process** for the preparation of a fermentation product from ligno-cellulosic material, comprising the following steps: a) optionally pre-treatment of the ligno-cellulosic material; b) optionally washing of the optionally pre-treated ligno-cellulosic material; c) enzymatic **hydrolysis** of the optionally washed and/or optionally pre-treated ligno-cellulosic material using an **enzyme** composition comprising at least two **cellulase** and whereby the **enzyme** composition at least comprises GH61; d) fermentation of the **hydrolysed** ligno-cellulosic material to produce a fermentation product; and e) optionally recovery of a fermentation product; wherein before and/or during the enzymatic **hydrolysis oxygen** is added to the ligno-cellulosic material.

Classifications:

International (IPC 8-9): C12N9/24 C12N9/42 C12P1/00 C12P1/02 C12P17/10 C12P19/00 C12P19/02 C12P19/14 C12P35/00 C12P5/02 C12P7/08 C12P7/10 C12P7/16 C12P7/18 C12P7/20 C12P7/40 C12P7/42 C12P7/46 C12P7/48 C12P7/54 C12P7/56 C13K1/02 (Advanced/Invention); C12R1/645 (Advanced/Non-invention); C12P1/00 C12P19/14 (Core/Invention)

CPC: C12N9/2402 C12N9/2437 C12P2201/00 C12P2203/00 C12P7/56 C12P7/42 C12P7/40 C12P7/54 C12P7/46 C12P7/48 C12P7/18 C12P5/026 C12P7/20 C12P7/16 C12P17/10 C12P35/00 C12P19/14 C12P7/10 C12P19/02 Y02E50/343 Y02E50/16

US: 435/105 435/108 435/109 435/113 435/115 435/118 435/121 435/136 435/139 435/140 435/144 435/145 435/146 435/158 435/159 435/160 435/162 435/165 435/167 435/189 435/193 435/198 435/200 435/201 435/202 435/209 435/219 435/232 435/43 435/47 435/99



Family:

Publication number	Publication date	Application number	Application date
AU2013343592 AA	20140515	AU20130343592	20131107
AU2013343592 BB	20170601	AU20130343592	20131107
AU2013343595 AA	20140515	AU20130343595	20131107
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AU2013343597 AA	20140515	AU20130343597	20131107
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AU2017206241 AA	20170810	AU20170206241	20170720
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CN104769117 A	20150708	CN201380058360	20131107
CN104769126 A	20150708	CN201380058376	20131107
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ID201701883 A	20170310	ID2015P0003414	20131107
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JP2015534828 T2	20151207	JP20150541126T	20131107
JP2015534829 T2	20151207	JP20150541128T	20131107
JP2016501012 T2	20160118	JP20150541127T	20131107
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KR20150082276 A	20150715	KR20157011651	20131107
KR20150082277 A	20150715	KR20157011652	20131107
MX2015005628 A1	20150904	MX20150005628	20131107
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MX2015005631 A1	20150814	MX20150005631	20131107
TH158503 A	20161221	TH20151002255	20131107
TH168475 A	20170928	TH20151002256	20131107

UA116454 C2	20180326	UA20150005518	20131107
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US2015299749 AA	20151022	US20130440658	20131107
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WO14072390 A1	20140515	WO2013EP73250	20131107
WO14072393 A1	20140515	WO2013EP73253	20131107
WO14072395 A1	20140515	WO2013EP73255	20131107

Priority:

AU20130343592	20131107	AU20130343595	20131107	AU20170204105	20170616
AU20170206241	20170720	AU20170206278	20170721	AU20130343597	20131107
EP20120191957	20121109	EP20130174656	20130702	EP20130176500	20130715
EP20130184702	20130917	EP20130176083	20130711	EP20130184701	20130917
EP20130789275	20131107	EP20130789530	20131107	WO2013EP73250	20131107
WO2013EP73253	20131107	WO2013EP73255	20131107	EP20130792865	20131107
US20150420765	20150210	US20170812978	20171114		

Probable Assignee: DSM IP ASSETS BV

Assignee(s): (std): DSM IP ASSETS BV

Assignee(s): HISENI AIDA ; NOORDAM BERTUS ; BERKHOUT MICHAEL PETRUS JOZEF

Inventor(s): (std): BERKHOUT MICHAEL PETRUS JOZEF ; HISENI AIDA ; NOORDAM BERTUS

Inventor(s): MICHAEL PETRUS JOZEF BERKHOUT ; BERTUS NOORDAM ; AIDA HISENI

Agent(s): PHILLIPS ORMONDE FITZPATRICK; SMART AND BIGGAR; BIERMANN JAN; LANNY SETIAWAN MBA MGMT MA LPC MA LMFT; MATULEWICZ EMIL RUDOLF ANTONIUS

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: IMMOBILIZED PRODUCT TOLERANT MICROORGANISMS

Abstract: Source: US2014147901A [EN] Methods for adapting or selecting microorganisms with increased product tolerance are provided. Additionally, a bioreactor capable of operation in either packed bed or fluidized bed is disclosed along with methods to use the bioreactor for culturing microorganisms adapted or selected increased product tolerance.

Classifications:

International (IPC 8-9): C12P7/16 (Advanced/Invention)

CPC: C12P7/16 C12N1/36 C12N11/00 Y02E50/10

US: 435/160 435/174 435/176 435/177 435/294.1

PatBase - US2014147901_AA

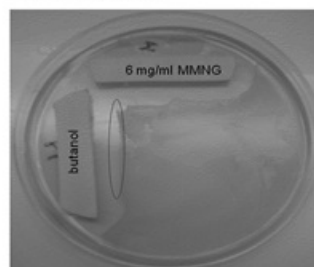


FIGURE 1

Family:

Publication number	Publication date	Application number	Application date
US2014147901 AA	20140529	US20130866884	20130419

Priority:

US20100936611 20101222 US20130866884 20130419

Probable Assignee: COBALT

Assignee(s): (std): COBALT

Inventor(s): (std): BURNS GUYDISH STACY M ; CONTAG PAMELA REILLY ; MEERMAN HENDRIKUS J ; WALTHER DAVID C

Title: DIRECT FERMENTATION OF **BIOMASS** TO FUEL PRECURSORS

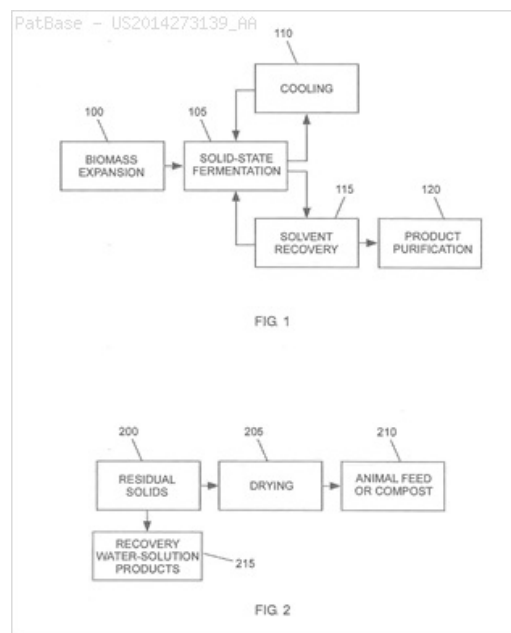
Abstract: Source: US2014273139A [EN] Featured herein are mixed solvent fermentation **processes** for efficiently generating sulfur-free fuels from low-cost raw materials.

Classifications:

International (IPC 8-9): C12P7/10 (Advanced/Invention)

CPC: C12N1/14 C12N1/22 C12N1/38 C12P7/28 C12P39/00 C12P7/10 C12P7/04 Y02E50/16

US: 435/165



Family:

Publication number	Publication date	Application number	Application date
US2014273139 AA	20140918	US20140215261	20140317

Priority:

US20130788581P 20130315

US20140215261 20140317

Probable Assignee:

INNOVATIVE METABOLISM INC

Assignee(s): (std):

INNOVATIVE METABOLISM INC

Inventor(s): (std):

FERRANTE ANTHONY A

Title: METHODS AND SYSTEM FOR LIQUEFACTION, **HYDROLYSIS** AND FERMENTATION OF AGRICULTURAL FEEDSTOCKS

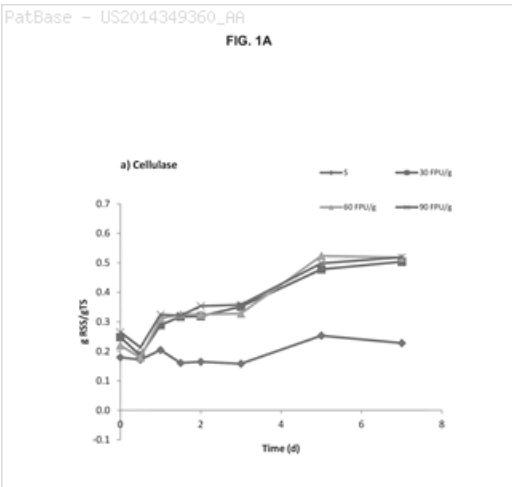
Abstract: Source: US2014349360A [EN] Treatment of agricultural **biomass** without separation of the **biomass** to extract **fermentable** feedstock, instead using a hydrolytic **process** upstream of the fermentation **process**, provides an efficient and cost-effective **process** for forming ethanol from agricultural **biomass**.

Classifications:

International (IPC 8-9): C10L1/02 C12P7/06 C12P7/08 C12P7/10 C12P7/14 (Advanced/Invention)

CPC: C12P7/14 C10L1/02 C12P7/10 C12P2201/00 Y02E50/16 C12P7/06 Y02E50/17

US: 435/162



Family:

Publication number	Publication date	Application number	Application date
EP2976431 A1	20160127	EP20140768756	20140319
EP2976431 A4	20161116	EP20140768756	20140319
US2014349360 AA	20141127	US20140220033	20140319
WO14153425 A1	20140925	WO2014US31262	20140319

Priority:

US20130803405P 20130319 US20140220033 20140319 WO2014US31262 20140319

Probable Assignee: ENERGY BEET DESIGNS LLC

Assignee(s): (std): ENERGY BEET DESIGNS LLC ; UNIV CALIFORNIA

Assignee(s): THE UNIV OF CALIFORNIA

Inventor(s): (std): DIENER JOHN E ; MANTERNACH JEFFREY H ; MOORE JIMMY L ; PUCHEU WILLIAM C ; TISCHER JAMES R ; WINCKLER JOSEPH W ; ZHANG RUIHONG ; ZICARI STEVEN M

Agent(s): HOFFMANN EITLE; MANN JEFFRY S ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW