

1) Family number: 43952891 (US2009314487A)

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Title: PROCESSING HYDROCARBONS

Abstract: Source: US2009314487A [EN] Systems and methods that include providing, e.g., obtaining or preparing, a material that includes a hydrocarbon carried by an inorganic substrate, and exposing the material to a plurality of energetic particles, such as accelerated charged particles, such as electrons or ions.

Classifications:

International (ipc 8-9): A23K10/12 A23L5/00 B01J19/08 B02C19/18 B09B3/00 C07C1/00 C07C4/00 C08B1/00 C08H8/00 C10G1/00 C10G1/04 C10G11/00 C10G15/00 C10G15/08 C10G15/10 C10G3/00 C10G35/04 C10G47/00 C10G65/02 C10L1/02 C10L1/04 C12P1/00 C12P19/00 C12P19/02 C12P19/14 C12P5/00 C12P5/02 C12P7/02 C12P7/04 C12P7/10 C12P7/14 C12P7/16 C12P7/40 C13K1/02 D21B1/02 D21B1/10 D21C1/00 E21B36/00 E21B43/00 E21B43/24 E21B43/28 G06F15/00 G06F9/30 G06F9/44 G21G5/00 G21K5/00 H01M8/1007 H01M8/1011 H01M8/16 H01M8/22 H05G2/00 (Advanced/Invention);

C07G1/00 C08B1/00 C08B30/02 C08H8/00 C08L97/02 C09K8/592 C10G11/00 C10G15/10 C10G3/00 C10G35/04 C10G47/00 C10L1/04 C12P19/04 D21B1/02 (Advanced/Non-invention); B01J19/08 B02C19/00 C07C1/00 C07C4/00 C10G1/00 C10G11/00 C10G15/00 C10G3/00 C10G35/00 C10G47/00 C10G65/00 C10L1/00 E21B36/00 E21B43/00 E21B43/16 G21G5/00 (Core/Invention)

International (ipc 1-7): B01J19/08 C10G1/00 C10G11/00 C10G15/08 C10G15/10 E21B43/24

CPC: C10G1/04 C10G3/00 C10G11/00 C10G47/00 C10G2300/1011 C10L1/04 Y02E50/16 Y02T50/678 C10G1/00 C10G15/08 C10G15/10 C10G2300/1033 C10G2300/807 E21B43/2401 E21B43/24 B01J2219/08 B01J2219/0879 C08B1/00 C12P7/14 C12P19/02 C12P2201/00 B01J19/085 C12P19/14 B01J19/081 Y02P30/20 C10L1/02 H01M8/22 C10L2200/0469 C10L2290/26 C10L2290/36 C10L2290/34 C10L2290/02 C10L2270/02 H01M8/1007 C12P7/16 C12P7/04 C12P5/00 H01M8/1013 C12P2203/00 C10L2290/543 H01M8/16 C12P7/02 C12P5/02 C12P5/023 C10L2270/04 C10L2290/06 B01J19/08 C12P7/10 Y02E50/343 C10G2300/4037 E21B43/2403 E21B43/281 G06F9/3838

European: C10G1/00 C10G11/00 C10G15/08 C10G15/10 C10G3/00 C10G47/00 C10L1/04

US: 1/1 166/247 166/247P 166/272.3 204/157.15 204/157.150S 204/157.6 204/157.63 204/157.630P 204/157.65 204/157.9 204/164 204/165 204/168 204/170 204/172 208/106 208/108 208/109 208/111.01 208/111.35 208/112 208/113 208/113S 208/118 208/120.01 208/120.35 208/122 208/124 208/132 208/133 208/133S 208/134 208/134S 208/135 208/138 208/138S 208/139 208/140 208/140S 208/141 208/141S 208/142 208/142S 208/143 208/143S 208/144 208/144S 208/145 208/145S 208/146 208/146S 208/147 208/147S 208/148 208/148S 208/149 208/149S 208/150 208/150S 208/151 208/151S 208/152 208/152S 208/153 208/153S 208/154 208/154S 208/155 208/155S 208/156 208/156S 208/157 208/157S 208/158 208/158S 208/159 208/159S 208/160 208/160S 208/161 208/161S 208/162 208/162S 208/163 208/163S 208/164 208/164S 208/165 208/165S 208/166 208/166S 208/167 208/167S 208/168 208/168S 208/169 208/169S 208/170 208/170S 208/171 208/171S 208/172 208/172S 208/173 208/173S 208/174 208/174S 208/175 208/175S 208/176 208/176S 208/177 208/177S 208/178 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Priority:

US20080049406P	20080430	US20080409406P	20080430	US20080073665P	20080618
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Assignee(s): INT BUSINESS MACHINES CORP

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Inventor(s): MARSHALL MEDOFF

Agent(s): SPRUSON AND FERGUSON; SMART AND BIGGAR; XYLECO INC; XYLECO INC CELIA LEBER; IBM PEC C O PATRICK E CALDWELL ESQ CORP; CELIA H; PATRICK E; CALDWELL FIRM LLC; LEBER PATENT LAW PC; LEBER IP LAW; SHELLY; LEBER CELIA H; BABINEAU JAMES W 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 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 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

2) Family number: 43952875 (US2009283229A)

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Title: FUNCTIONALIZING CELLULOSIC AND LIGNOCELLULOSIC MATERIALS

Abstract: Source: US2009283229A [EN] Irradiated lignocellulosic or cellulosic materials are provided which contain carboxylic acid groups and/or other functional groups not present in a naturally occurring cellulosic or lignocellulosic material from which the irradiated material was obtained

Classifications:

International (IPC 8-9): A23G3/32 A41D1/00 A63B59/06 B01J19/08 B01J19/12 B02C23/18 B03C9/00 B05D3/06 B05D7/06 B05D7/06 B27K5/00 B27N1/00 B29C65/00 B29C65/14 B29C71/04 B32B21/14 C07C1/20 C07C27/00 C07C27/04 C07C27/24 C07C29/00 C07C31/00 C07C6/00 C07H3/00 C07H3/04 C08B1/00 C08B15/00 C08B15/02 C08B15/04 C08B15/10 C08B3/06 C08B30/02 C08H7/00 C08H8/00 C08J11/10 C08J3/24 C08J3/28 C08L97/02 C10L1/00 C10L1/02 C10L3/00 C12M1/00 C12N13/00 C12P C12P1/00 C12P13/00 C12P19/00 C12P19/02 C12P19/14 C12P21/00 C12P3/00 C12P5/00 C12P5/02 C12P7/00 C12P7/02 C12P7/04 C12P7/06 C12P7/10 C12P7/16 C12P7/40 C12P7/58 C13B50/00 C13B99/00 C13K1/00 C13K1/02 C13K1/06 C13K5/00 D02G3/00 D02G3/02 D03D15/00 D04B1/14 D04B21/00 D04H D04H1/12 D04H1/26 D04H1/42 D04H1/425 D04H3/00 D04H5/00 D06B3/10 D06M D06M10/00 D06M10/02 D06M10/06 D06M10/08 D06M10/10 D06M14/22 D21B1/02 D21B1/06 D21C1/00 D21C1/10 D21C5/00 D21C9/00 D21F11/00 D21F5/00 D21G1/00 D21H11/04 D21H11/16 D21H11/20 D21H21/28 D21H23/22 D21H25/00 D21H25/04 G01N23/00 G01N23/02 G03C1/00 G03C5/00 G21K5/00 G21K5/10 H01J37/30 H01J37/317 (Advanced/Invention); C12P19/00 C12P19/02 C12P19/14 C12P7/02 C12P7/10 D06M101/04 D06M101/06 D21C9/00 (Advanced/Non-invention); A41D1/00 B01J19/08 B01J19/12 B03C9/00 B05D3/00 B05D3/06 B05D7/06 B27K5/00 B27N1/00 B29C65/00 B29C65/14 B32B21/00 C07C31/00 C07H3/00 C08B15/00 C08B3/00 C08H8/00 C08J3/28 C12N13/00 C12P5/00 C12P7/00 C12P7/02 C13K1/00 C13K5/00 D03D15/00 D04B1/14 D04B21/00 D04H1/42 D04H3/00 D04H5/00 D06M14/00 D21B1/06 D21C1/00 D21C5/00 D21C9/00 D21F5/00 D21G1/00 D21H11/00 D21H21/00 D21H23/00 D21H25/00 G21K5/00 (Core/Invention); C12P D03D D04B D04H D06M (Subclass/Invention)

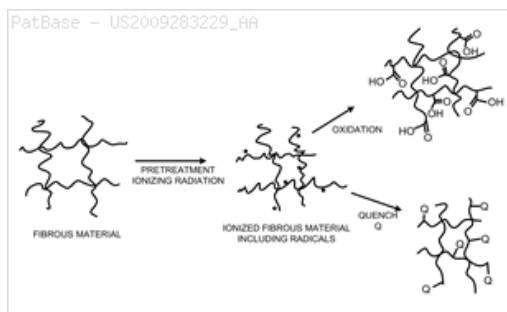
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Family:

Publication number	Publication date	Application number	Application date
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Priority:

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Probable Assignee: XYLECO INC

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

Assignee(s): XYLECO INC WAKEFIELD ; XYLECO INCL-271 SALEM STREETWOBURNMA01801US ; MEDOFF MARSHALL90 ADDINGTON ROADBROOKLINEMA02146US

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

Inventor(s): MEDOFF MARSHALL BROOKLINE ; MEDOFF MARSHALL90 ADDINGTON ROADBROOKLINEMA02146US

Agent(s): SPRUSON AND FERGUSON; SMART AND BIGGAR; STOLMAR AND PARTNER PATENTANWAELTE PARTG MBB; SIMPSON MARK GEOFFREY; VON FUENER NICOLAI; PONS ANGEL; REINHOLD COHN AND PARTNERS; EVROMARKPAT; FULYA SUEMERALP; FISH AND RICHARDSON PC; XYLECO INC; XYLECO INC CELIA LEBER; CELIA H; CELIA; LEBER PATENT LAW PC; LEBER PATENT LAW P; FRANCESCO; LEBER IP LAW; LEBER CELIA H ET AL; LEBER CELIA H

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 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 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

3) Family number: 43952862 (US2009312537A)

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Title: CARBOHYDRATES

Abstract: Source: US2009312537A [EN] Carbohydrates having functional groups, such as carboxylic acid groups and methods of making such carbohydrates.

Classifications:

International (IPC 8-9): A01H5/00 A23J1/16 A23K1/00 A23K1/06 A23K1/12 A23K1/14 A23K1/16 A23K1/165 A23K1/18 A23K1/20 A23K10/00 A23K10/12 A23K10/30 A23K10/32 A23K10/33 A23K10/37 A23K20/00 A23K20/163 A23K20/189 A23K3/03 A23K40/00 A23K40/10 A23K50/10 A23K50/80 A23L1/025 A23L1/09 A23L1/10 A23L1/29 A23L19/00 A23L29/30 A23L33/00 A23L5/00 A23L5/30 A23L7/10 A61K31/191 A61K31/439 A61K31/475 A61K36/00 A61K36/899 A61K38/14 A61K38/48 A61K41/00 A61K8/97 A61P31/04 A61Q19/00 B01D39/04 B01D39/18 B01J19/08 B01J19/10 B01J19/12 B01J20/24 C07C1/20 C07H1/00 C07K2/00 C08B1/00 C08B15/04 C08B15/06 C08B3/00 C08B30/02 C08B37/00 C08B37/14 C08B5/04 C08H C08H1/00 C08H5/04 C08H8/00 C08J11/16 C08J3/28 C08J7/18 C08L1/02 C08L5/14 C08L9/02

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G01N33/00 G01N33/68 G21G5/00 (Advanced/Invention);
A23K50/30 A23K50/40 A23K50/75 A23L3/26 B01J19/08 B60H1/00
C07C4/00 C08B1/00 C12N9/42 C12N9/44 C12P1/00 C12P19/00
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H01J37/06 H01J37/317 (Advanced/Non-invention);
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C10L5/40 C12P19/00 C12P5/00 C13K1/00
D21C3/00 (Core/Invention);
A23K B01J C08B C08H C08J C10L C12P C13K
D21C (Subclass/Invention)

International (IPC 1-7): A23K1/00 A23K1/18 B01J19/08 C08B15/06
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B01D39/18 C08H8/00 C08J3/28 C08L1/02 C08L5/14 C12P13/04
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European: A23K1/00C1 A23K1/14 A23K1/16L A23K1/18K A23K1/18S A61K8/97 A61Q19/00 B01D39/18 C08B15/04
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426/2 426/240 426/240S 426/2P 426/52 426/52S 426/53 426/53S 426/61 426/61S 426/615S 426/618 426/618S 426/624
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PatBase - US2009312537_AA

Patent Application Publication Dec. 17, 2009 Sheet 1 of 12 US 2009/0312537 A1

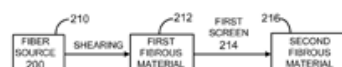


FIG. 1

Family:

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Priority:

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Probable Assignee: XYLECO INC

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

Assignee(s): XYLECO INC WOBURN

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

Agent(s): SPRUSON AND FERGUSON; SMART AND BIGGAR; STOLMAR AND PARTNER PATENTANWAELTE PARTG MBB; SIMPSON MARK GEOFFREY; POTTER CLARKSON LLP; DE ELZABURU ALBERTO; REINHOLD COHN AND PARTNERS; EVROMARKPAT; ETAZH 3 EVROMARKPAT; FULYA SUEMERALP; XYLECO INC; XYLECO INC CELIA LEBER; LEBER PATENT LAW PC; CELIA H; WILMER CUTLER PICKERING HALE AND DORR LLP; BABINEAU JAMES W 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 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 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

4) Family number: 43952853 (US2009286295A)

© PatBase

Title: PROCESSING BIOMASS

Abstract: Source: US2009286295A [EN] Biomass (e.g., plant biomass, animal biomass, and municipal waste biomass) is processed to produce useful products, such as fuels. For example, systems can use feedstock materials, such as cellulosic and/or lignocellulosic materials, to produce ethanol and/or butanol, e.g., by fermentation.

Classifications:

International (ipc 8-9): A01N63/00 B01F1/00 C07H3/00 C07H3/02 C07H3/04 C08B1/00 C09K3/00 C12N1/00 C12N1/16 C12N1/20 C12N1/38 C12N11/02 C12P19/02 C12P5/02 C12P7/04 C12P7/06 C12P7/10 C12P7/14 C12P7/16 C12P7/18 C12P7/20 C12P7/40 C12P7/42 C12P7/46 C12P7/52 C12P7/54 C12P7/56 C12P7/58 C12P7/64 C12R1/84 C12R1/865 (Advanced/Invention); C07H3/00 C12R1/84 C12R1/865 (Advanced/Non-invention); C07H3/00 C09K3/00 C12N1/00 C12N1/20 C12P19/00 C12P5/00 C12P7/00 C12P7/02 C12P7/14 (Core/Invention)

International (ipc 1-7): C07H3/00 C12N1/20 C12P7/06 C12P7/10 C12R1/84 C12R1/865 G01N23/00

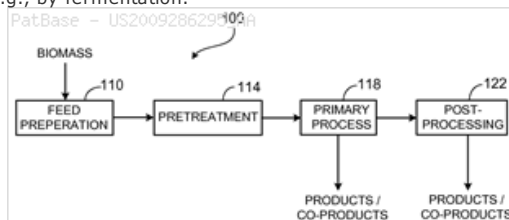
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European: C07H3/02 C07H3/04 C12N1/20 C12P7/06 Y02E50/16 Y02E50/17

US: 1/1 252/182.12 252/182.1205 435/134 435/135 435/136 435/137 435/139 435/140 435/141 435/142 435/145 435/146 435/147 435/157 435/158 435/159 435/160 435/161 435/161S 435/162 435/162P 435/165 435/165S 435/167 435/170 435/171 435/174 435/177 435/179 435/243 435/243S 435/252 435/252.1 435/254.2 435/254.21 435/254.23 435/255.1 435/255.2 435/255.5 560/76

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Publication number	Publication date	Application number	Application date
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TH119669 A	20130117	TH20091001930	20090429
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Priority:

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Assignee(s): XYLECO INC WAKEFIELD

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

Inventor(s): MEDOFF MARSHALL BROOKLINE ; MASTERMAN THOMAS CRAIG ROCKPORT ; MASTERMAN CRAIG THOMAS ROCKPORT ; CRAIG THOMAS MASTERMAN

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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 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 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

5) Family number: 34395612 (US2007108056A)

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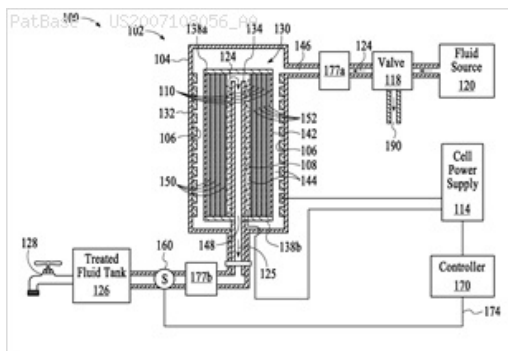
Title: ELECTROCHEMICAL ION EXCHANGE TREATMENT OF FLUIDS

Abstract: Source: US2007108056A [EN] A fluid treatment apparatus for treating a fluid comprises an electrochemical cell having fluid orifices to receive and release fluid, and a fluid passageway connecting the orifices with a water-splitting ion exchange membrane is exposed to the fluid in the passageway. First and second electrodes are positioned about the membrane. The apparatus also comprises a controller to control and operate a power supply and valve system. The power supply supplies a current to the first and second electrodes at sufficiently high current density to result in bacteriostasis, deactivation, or a reduction in the microorganisms in the fluid. The controller can also operate a set of cells to deionize fluid and regenerate the cells.

Classifications:

International (IPC 8-9): B01D61/44 B01D61/42 B01D61/48
B01D61/54 B03C5/00 B03C5/02 C02F1/46 C02F1/461
C02F1/469 (Advanced/Invention);

B01D61/44 C02F1/00 C02F1/28 C02F1/32 C02F1/42 C02F1/44
C02F1/467 C02F1/469 (Advanced/Non-invention);
B01D61/42 B03C5/00 C02F1/469 (Core/Invention)
International (IPC 1-7): C02F1/469
CPC: C02F1/4695 C02F2301/026 C02F2301/043 B01D61/54
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C02F2001/425 C02F2001/46152 C02F2201/003 C02F2201/46115
C02F2201/46125 C02F2201/4613 C02F2201/46145 C02F2201/4616
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C02F2303/16 B01D61/44 C02F1/469 Y02A20/131 Y02A20/134
European: B01D61/44 B01D61/54 C02F1/461B2 C02F1/469
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M02F303/04 M02F303/16
US: 1/1 204/536 204/537 204/538 204/554 204/631 204/632 204/660 204/660S 204/661 204/663



Family:

Publication number	Publication date	Application number	Application date
BRPI0616890 A2	20110705	BR2006PI16890	20061006
CN101316794 A	20081203	CN200680044337	20061006
CN101316794 B	20160106	CN200680044337	20061006
CN105540763 A	20160504	CN201510907626	20061006
EP1945577 A1	20080723	EP20060825614	20061006
IN01726CN2008 A	20090102	IN2008CN01726	20080404
KR101333243 B1	20131126	KR20087010854	20061006
KR20080056284 A	20080620	KR20087010854	20061006
TW200744958 A	20071216	TW20060137317	20061011
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US2007108056 AA	20070517	US20060539596	20061006
US2014027288 AA	20140130	US20130044840	20131002
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Priority:

US20050724456P 20051006 US20060831703P 20060717 CN200680044337 20061006
US20060539596 20061006 WO2006US39297 20061006 US20130044840 20131002

Probable Assignee: PIONETICS INC

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XPV CAPITAL AGENT AS CORP ; COMERICA BANK ; EMPORIA CAPITAL FUNDING LLC ADMINISTRATIVE
AGEN AS ; EMPORIA CAPITAL FUNDING LLC ADMINISTRATIVE AGENT F ; EMPORIA CAPITAL FUNDING
LLC ADMINISTRATIVE AGENT FOR LENDERS AS ; EMPORIA CAPITAL FUNDING LLC AS
ADMINISTRATIVE AGENT

Inventor(s): (std): CRAWFORD HOLMES JAMES ; DAVID NYBERG ERIC ; ELLEN VOGDES CHRISTINE ; JANAH ASHOK K ;
JANAH ASHOK KUMAR ; KUMAR JANAH ASHOK ; HOLMES JAMES C ; HOLMES JAMES CRAWFORD ;
NYBERG ERIC D ; NYBERG ERIC DAVID ; VOGDES CHRISTINE E ; VOGDES CHRISTINE ELLEN

Inventor(s): JAMES CRAWFORD HOLMES ; ERIC DAVID NYBERG ; CHRISTINE ELLEN VOGDES ; ASHOK KUMAR
JANAH ; VOGDES CHRISTINE ; JANAH ASHOK ; NYBERG ERIC ; HOLMES JAMES

Agent(s): ZIMMERMANN AND PARTNER; JANAH AND ASSOCIATES A PROFESSIONAL CORP; ASHOK K; JANAH
AND ASSOCIATES PC

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
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6) Family number: 43168920 (US2009200032A)

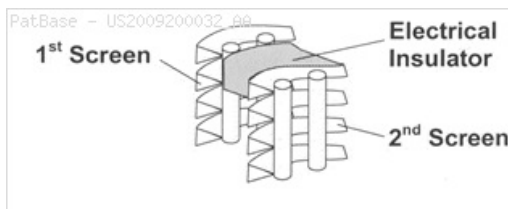
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Title: SYSTEM, METHOD AND APPARATUS FOR CREATING AN ELECTRICAL GLOW DISCHARGE

Abstract: Source: US2009200032A [EN] The present invention provides system, method and apparatus for creating an
electric glow discharge that includes a first and second electrically conductive screens having substantially equidistant a gap
between them, one or more insulators attached to the electrically conductive screens, and a non-conductive granular
material disposed within the gap. The electric glow discharge is created whenever: (a) the first electrically conductive screen
is connected to an electrical power source such that it is a cathode, the second electrically conductive screen is connected to
the electrical power supply such that it is an anode, and the electrically conductive fluid is introduced into the gap, or (b) both
electrically conductive screens are connected to the electrical power supply such they are the cathode, and the electrically
conductive fluid is introduced between both electrically conductive screens and an external anode connected to the electrical
power supply.

Classifications:

International (IPC 8-9): B01D17/02 B01J19/08 B23K10/00
B23K10/02 B23K15/00 B23K15/06 B23K15/08 B64G1/40 C01B3/34
C02F1/28 C02F1/46 C02F1/461 C04B35/10 C04B37/00 C10B23/00
C10B53/06 C10G15/00 C10G32/00 C10J3/72 C25B1/00 C25B11/03
C25B13/02 C25B13/08 C25B9/00 C25B9/04 C25B9/08 E21B21/06
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B23K10/00 B64G1/40 C02F1/32 C02F1/78 G21D5/02 H05H1/24 H05H1/34 H05H1/46 (Advanced/Non-invention);
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60/39.826 60/39.826S

Family:

Publication number	Publication date	Application number	Application date
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Priority:

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Probable Assignee: FORET PLASMA LABS LLC

Assignee(s): (std): FORET PLASMA LABS LLC ; FORET PLAZMA LABS LLK ; FORET TODD

Inventor(s): (std): FORET TODD ; FORET TODD T

Inventor(s): TODD FORET

Agent(s): PIZZEYS; PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD; SHAPIRO COHEN; SHAPIRO COHEN LLP; SONN HELMUT; SONN AND PARTNER PATENTANWAELTE; MUELLER BORE AND PARTNER PATENTANWAELTE PARTG MBB; CHALKER FLORES LLP; DANIEL J; EDWIN S; SINGLETON CHAINEY ET AL; FLORES EDWIN ET AL; CHALKER DANIEL ET AL; CHALKER DANIEL J 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

7) Family number: 34325358 (US2007062801A)

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Title: TREATMENT OF FLUIDS WITH WAVE ENERGY FROM A CARBON ARC

Abstract: Source: US2007062801A [EN] A method of and apparatus for treating liquids flowing in a thin film around a source of wave energy to directly exposes the liquid to the wave energy, preferably generated in whole or part by an electrical arc between carbon electrodes. In addition to the wave energy generated by the electrical arc, energy generated by cavitation of the flowing liquid may be used in treating the liquid.

Classifications:

International (IPC 8-9): A23B4/015 A23C3/07 A23L2/50 A23L3/005

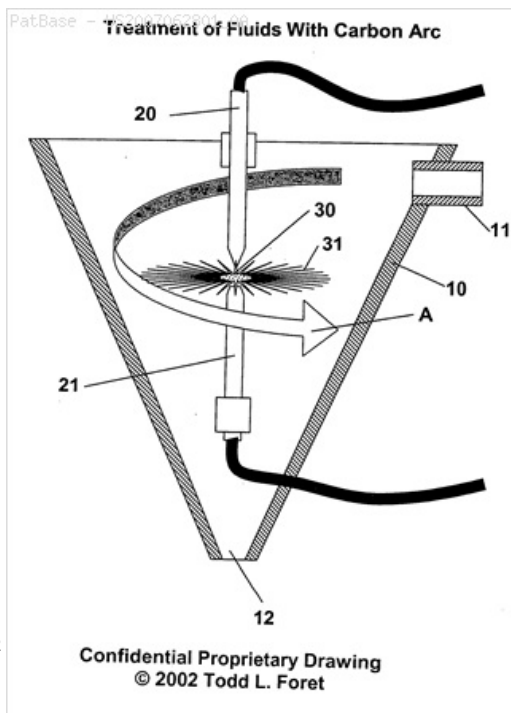
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B01J C02F (Subclass/Invention)

International (IPC 1-7): C02F1/32

CPC: C02F1/467 A61L2/084 A61L2/025 A61L2/085 C02F1/46
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Family:

Publication number	Publication date	Application number	Application date
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Probable Assignee: FORET PLASMA LABS LLC

Assignee(s): (std): FORET PLASMA LABS LLC ; FORET TODD

Inventor(s): (std): FORET TODD ; TODD FORET ; FORET TODD T

Agent(s): SHAPIRO COHEN; SHAPIRO COHEN LLP; SONN AND PARTNER PATENTANWAELTE; CHALKER FLORES LLP; CHALKER DANIEL J; DANIEL J; EDWIN S; CHAINEY P

Designated states: AE AG AL AM 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 DE DK DM 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 MG MK ML MN MR MT 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

8) Family number: 57414072 (US2016030856A)

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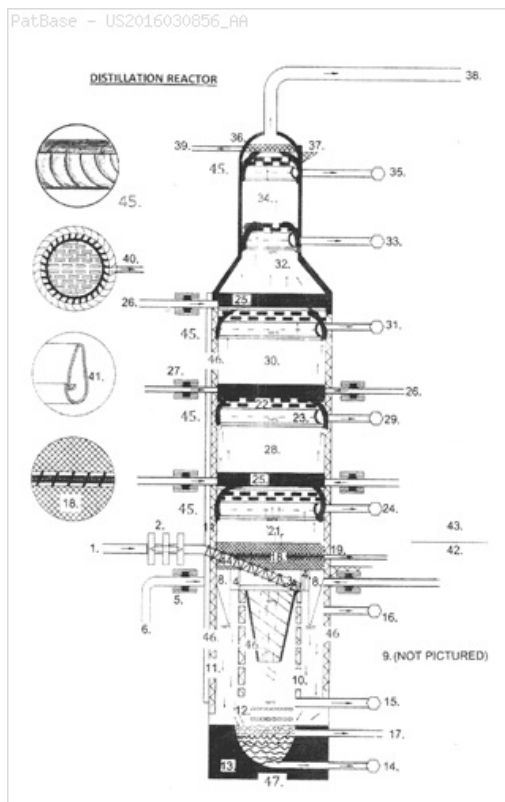
Title: DISTILLATION REACTOR MODULE

Abstract: Source: US2016030856A [EN] The distillation reactor consists of a reactor apparatus with corresponding method of upstream distilling and purification of carbon based liquid or liquidized streams for use as fuels, lubricating oils and or gaseous energy and electricity production. The distillation reactor consolidates the atmospheric and vacuum distillation processes along with desalting, defueling, deasphalting, fractionation, thin/wiped film evaporation and Hydro finishing into an advanced high velocity, high volume single reactor system. Carbon based feed streams include either a single stream or preferably, a combined stream of liquefied coal slurries, crude oils, spent oils, Pyrolytic oils and or peat or other plant carbon derived liquids, vapors, mists or gases. The method further consists of controlling the mix ratio, flow velocity, sequential fractionation and filtration technology and processing atmospheres of the carbon feeds with the reactor apparatus. The combined apparatus and method allows for a refinery to consistently produce a finished barrel of oil well below traditional costs and at a higher efficiency than current art and prior art.

Classifications:

International (IPC 8-9): B01D3/00 B01D3/06 B01D3/10 B01D3/26 B01D3/32 B01D39/20 B01D53/48 B01D53/62 B01D59/04 B01J B01J19/24 B01J19/26 B01J2/00 B01J6/00 B01J8/24 B02C23/00 B03C1/00 B22F3/10 B22F9/00 B29B17/00 C01B17/027 C01B17/74 C02F1/00 C10B49/12 C10G1/00 C10G11/18 C10G33/00 C10G45/00 C10G57/00 C10G7/00 C10G7/06 C10G9/04 C10J3/72 C10L9/10 C22B13/00 C22B15/00 C22B21/00 C22B7/00 C22B9/00 F03G7/00 F27B17/00 G21C1/02 G21D5/00 H01M10/54 H01M8/00 H02K55/02 H02K7/09 (Advanced/Invention)
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US: 196/46 202/232 209/213 210/251 241/301 241/65 266/160
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Family:

Publication number	Publication date	Application number	Application date
CA2907677 AA	20150921	CA20142907677	20140318
EP2969180 A2	20160120	EP20140762668	20140318
EP2969180 A4	20161005	EP20140762668	20140318
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Priority:

US20130800209P 20130315	US20130801170P 20130315	US20130801491P 20130315
US20140776734 20140318	US20140776736 20140318	WO2014US31118 20140318
WO2014US31116 20140318	US20140776732 20140515	WO2014US38290 20140515

Probable Assignee: TRANSTAR GROUP LLC

Assignee(s): (std): BRADLEY RANDALL ; KALPAN ALLEN ; KAPLAN ALLEN ; TRANSTAR GROUP LTD

Assignee(s): TRANSTAR GROUP LLC

Inventor(s): (std): KALPAN ALLEN ; KAPLAN ALLEN ; BRADLEY RANDALL

Agent(s): ADE AND CO INC; NELLIGAN OBRIEN PAYNE LLP; PERRONACE ANDREA; HERSHKOVITZ ABRAHAM ET AL; HERSHKOTIZ ABRAHAM 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

9) Family number: 27161126 (US2003153059A)

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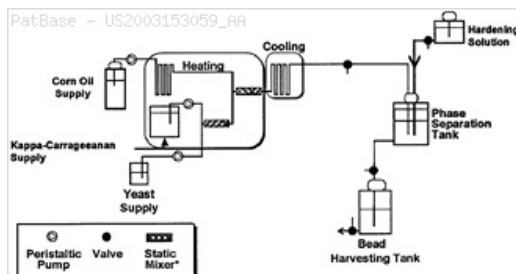
Title: COMBINATION CONTINUOUS/BATCH FERMENTATION PROCESSES

Abstract: Source: US2003153059A [EN] In the production of potable alcohols, a continuous fermentation stage is employed to pitch and/or initially ferment a wort containing fermentable sugars. An exemplary continuous stage involves the use of a gas lift bioreactor employing superflocculant yeast and stringent oxygen control. The continuous stage can then be followed by sending an at least partially fermented discharge from the continuous process is delivered to a batch processing stage for finishing.

Classifications:

International (IPC 8-9): C12C11/00 C12C11/02 C12C11/07
C12C11/09 C12C13/00 C12C7/00 C12P7/06 (Advanced/Invention);

C12C11/02 (Advanced/Non-invention);
C12C11/00 C12P7/02 (Core/Invention);
C12C (Subclass/Invention)
International (IPC 1-7): C12C11/00 C12C11/02 C12C11/07
C12C11/09 C12C13/00 C12P7/06
CPC: C12C11/09 Y02E50/17 C12C11/07 C12C11/075
European: C12C11/07 C12C11/07B C12C11/09 Y02E50/17
US: 426/16 426/16P 426/16S 435/161 435/161P 435/161S



Family:

Publication number	Publication date	Application number	Application date
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AU2002317081 AA	20030102	AU20020317081	20020620
BG108523 A	20040930	BG20040108523	20040113
BG66230 B1	20120731	BG20040108523	20040113
BRPI0210552 A	20040525	BR2002PI10552	20020620
BRPI0210552 B1	20140610	BR2002PI10552	20020620
CA2451330 AA	20031219	CA20022451330	20020620
CA2451330 C	20120131	CA20022451330	20020620
CN100560708 C	20091118	CN20028016264	20020620
CN1694950 A	20051109	CN20028016264	20020620
CZ200400055 A3	20041215	CZ20040000055	20020620
CZ304820 B6	20141119	CZ20040000055	20020620
DE60210451 D1	20060518	DE20026010451	20020620
DE60210451 T2	20070201	DE20026010451T	20020620
EP1397481 A2	20040317	EP20020744983	20020620
EP1397481 B1	20060405	EP20020744983	20020620
HR20040005 A2	20041231	HR20040000005	20040107
JP2004532646 T2	20041028	JP20030506416T	20020620
KR100910238 B1	20090731	KR20037016720	20020620
KR20040022430 A	20040312	KR20037016720	20020620
MXPA03011982 A1	20040326	MX2003PA11982	20020620
RO122457 B1	20090630	RO20030001038	20020620
RU2004100827 A	20050610	RU20040100827	20020620
RU2361908 C2	20090720	RU20040100827	20020620
SI21561 C	20050228	SI20020020020	20020620
SK200400048 A5	20050103	SK20040000048	20020620
SK288157 B6	20140108	SK20040000048	20020620
US2003153059 AA	20030814	US20020175351	20020620
US2005214408 AA	20050929	US20050098688	20050405
VN11545 A1	20130826	VN20040000033	20020620
WO02102961 A2	20021227	WO2002CA00970	20020620
WO02102961 A3	20030227	WO2002CA00970	20020620
YU100503 A	20060525	YU20030001005	20020620
ZA200309944 A	20040512	ZA20030009944	20031223

Priority:

US20010299153P 20010620 US20010299186P 20010620 US20020175351 20020620
WO2002CA00970 20020620 WO2002CA00970 20031220 US20050098688 20050405

Probable Assignee: LABATT BREWING CO LTD

Assignee(s): (std): ANHEUSER BUSCH INBEV S A ; ANHEUSER BUSCH INBEV SA ; LABATT BREWING CO LTD ;
PILKINGTON PHYLLIS H ; MENSOUR NORMAND A ; LABATT BRJUING KOMPANI LTD

Assignee(s): PILKINGTON PHYLLIS HEATHER ; MENSOUR NORMAND ANTHONY ; LABATT BREWING COMPANY LTD ;
LABATT BREWING COMPANY LIMITED ; LABATT BRJUING KOMPANI LIMITED ; LABATT BREWING CO
LTD LONDON

Inventor(s): (std): ANTHONY PILKINGTON PHYLLIS HEA ; HEATHER PILKINGTON PHYLLIS ; MENSOUR ANTHONY ;
MENSOUR ANTHONY NORMAND ; MENSOUR NORMAND ; MENSOUR NORMAND A ; MENSOUR NORMAND
ANTHONY ; MENSOUR NORMAND ANTONI ; PHYLLIS HEATHER PILKINGTON ; PILKINGTON PHYLLIS KHEDER
; PILKINGTON HEATHER ; PILKINGTON PHYLLIS ; PILKINGTON PHYLLIS H ; PILKINGTON PHYLLIS
HEATHER ; ANTHONY MENSOUR NORMAND

Inventor(s): ANTHONY NORMAND MENSOUR ; PILKINGTON PHYLLIS HEATHER MENSOUR NORMAND ANTHONY

Agent(s): SPRUSON AND FERGUSON; STIKEMAN ELLIOTT SENCRL SRL LLP; SMART AND BIGGAR; PAUL
GRANDINETTI, LEVY AND GRANDINETTI; PAUL GRANDINETTI LEVY AND GRANDINETTI

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

10) Family number: 43430296 (US2009159461A)

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Title: ELECTROHYDRAULIC AND SHEAR CAVITATION RADIAL COUNTERFLOW LIQUID PROCESSOR

Abstract: Source: US2009159461A [EN] Axially fed fluid is sheared during long residence time in a radial workspace between counter-rotating coaxial disk-shaped centrifugal impellers. Gases evolve in the fractal turbulence of a shear layer, which is forced between laminar boundary layers, and an axial suction pump axially extracts evolved noncondensibles and volatiles through cores of radial vortices in the shear layer. Cavitation due to shear between the impellers kills pathogens by shock waves, microjets, OH radicals, and nearby UV light pulses. Oppositely charged electrodes bounding the workspace cause electroporesis and electrohydraulic cavitation. The electrodes are counter-rotating ridged armatures of disk dynamos,

forming a dynamic capacitor having audio frequency pulsed electric fields. Electrode erosion by arcing is prevented by shear between the electrodes. The device is also a continuous crystallizer. Inductive repulsion keeps conductive fractions, including suspended metals such as arsenic and mercury, and mineralized water and brine, from passing through the dynamic capacitor at the periphery of the reactor along with the nonconductive solvent. Solutions reach saturation while gases such as carbon dioxide are axially extracted. Metals and concentrated dissolved solids linger in the highly turbulent workspace and agglomerate into chunks, until reaching a size where momentum transfer from the impellers can impel the chunk through the inductive repulsion. Atomized water sprays from the periphery of the workspace and evaporatively cools, precipitating salt and fine crystals of pharmaceuticals. Scale forming compounds precipitate in the reactor into chunks which are easily separable from cooling water or reverse osmosis feed by conventional means. Electrolytic cracking neutralizes ammonia and VOCs.

Classifications:

International (IPC 8-9): B01D19/00 B01D33/00 B01D33/17 B01D35/01 B01D43/00 B01D45/14 B01D9/00 B01F7/00 B01J19/00 B01J19/08 B01J19/18 B04B1/00 B04B5/10 B82B3/00 C02F1/00 C02F1/28 C02F1/34 C02F1/38 C02F1/46 C02F1/461 C02F1/48 C02F1/50 C02F11/12 C25B1/00 C25B1/02 C25B1/13 C25B1/24 C25B11/02 C25B9/00 C25B9/12 C25D11/02 C25D17/00 C25D17/10 C25D21/04 C25D5/00 C25D5/06 D01F9/12

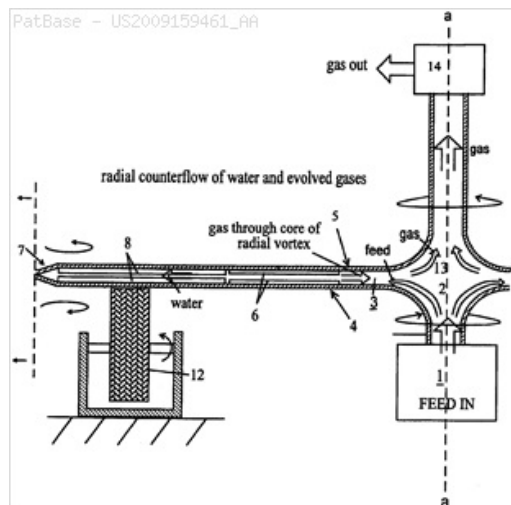
F04D (Advanced/Invention);

B01D33/17 B01D45/14 B04B1/00 C02F1/20 C02F1/461 C02F1/467 (Advanced/Non-invention); B01D19/00 B01D33/00 B01D33/15 B01J19/08 B82B3/00 C02F1/28 C02F1/46 C02F1/461 C02F1/50 C25B1/00 C25B9/12 C25D17/00 C25D17/10 D01F9/12 (Core/Invention)

CPC: B01D63/16 B01D2315/02 C02F1/001 C02F1/20 C02F1/385 C02F11/127 C02F2301/026 C02F2303/04 C25D5/003 C25D5/006 C25D5/06 B01J19/088 B01D9/0022 B01F7/00875 B01J19/008 B01J19/1806 B01J2219/0818 B01J2219/0875 B01J2219/0877 B01J2219/0879 B01J2219/0896 C02F1/34 C02F1/4608 C02F1/4672 C02F2001/46123 C25D21/04 C25B1/02 C25B1/24 C25B9/125 C25B1/00 C25B1/13 C25D11/024 C25D17/00 C25D17/10 Y02E60/368

European: B01D63/16 B01D9/00C2 B01F7/00H1B B01J19/00K B01J19/08D2 B01J19/18B C02F1/00D C02F1/34 C02F1/38B C02F1/467 C02F11/12C10 C25B1/00 C25B1/13 C25B9/12B C25D17/00 C25D17/10 C25D21/04 L01D315/02 L01J219/08D2B4B L01J219/08M2 L01J219/08M4 L01J219/08M6 L01J219/08P2 M02F1/20 M02F1/461B2F M02F1/467B M02F301/02F M02F303/04 Y02E60/36F2

US: 204/212 204/218 204/218S 204/545 204/669 205/334 205/477 205/494 205/498 205/538 205/551 205/555 205/571 205/615 205/626 205/628 205/742 205/742S 205/751 205/751P 205/755 210/167.13 210/360.1 210/360.100P 210/365 210/512.3 210/748.01 210/748.03 210/748.11 210/781 422/186 422/186S 423/447.1 423/447.100P 95/253 95/261 95/30 96/175 96/182 96/196 96/216 96/219 977/743 977/743S



Family:

Publication number	Publication date	Application number	Application date
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AU2008340363 BB	20101118	AU20080340363	20081208
BRPI0819564 A2	20150505	BR2008PI19564	20081208
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CA2715370 C	20140729	CA20092715370	20090209
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CN101983260 A	20110302	CN200980111988	20090209
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CN102015544 A	20110413	CN200980114540	20090304
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EP2257498 A2	20101208	EP20090717985	20090304
EP2257498 A4	20131113	EP20090717985	20090304
GB201013364 A0	20100922	GB20100013364	20090209
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GB2468831 B2	20120905	GB20100013366	20090209
GB2469251 A1	20101006	GB20100013364	20090209
GB2469251 B2	20130313	GB20100013364	20090209
IN04935DN2010 A	20120601	IN2010DN04935	20100707
KR101103433 B1	20120109	KR20107015727	20100715
KR20100123821 A	20101125	KR20107015727	20081208
MX2010006958 A1	20100930	MX20100006958	20081208
MX2010009706 A1	20110414	MX20100009706	20090304
US2009159461 AA	20090625	US20080234541	20080919
US2009159523 AA	20090625	US20070004308	20071220
US2009200176 AA	20090813	US20080167771	20080703
US2009263309 AA	20091022	US20090368236	20090209
US2012318671 AA	20121220	US20120589917	20120820
US2014346055 AA	20141127	US20140459153	20140813
US7757866 BB	20100720	US20070004308	20071220
US8268136 BB	20120918	US20080234541	20080919
US8771499 BB	20140708	US20120589917	20120820
US9611556 BB	20170404	US20140459153	20140813
WO09082615 A1	20090702	WO2008US85916	20081208
WO09100455 A1	20090813	WO2009US33598	20090209

WO09100452 A1	20090917	WO2009US33699	20090309
WO09111582 A3	20091203	WO2009US36059	20090304

Priority:

US20070004308	20071220	US20080026963P	20080207	US20080034242P	20080306
US20080034424P	20080306	US20080034242	20080306	US20080167771	20080703
US20080234541	20080919	WO2008US85916	20081208	US20090368236	20090209
WO2009US33598	20090209	WO2009US33600	20090209	WO2009US36059	20090304
US20120589917	20120820	US20140459153	20140813		

Probable Assignee: MCCUTCHEN CO

Assignee(s): (std): MCCUTCHEN CO ; MCCUTCHEN DAVID J ; MCCUTCHEN WILMOT H

Assignee(s): MCCUTCHEN CO2444 SE TIBBETTS STREETPORTLANDOR97202US

Inventor(s): (std): MCCUTCHEN DAVID ; MCCUTCHEN WILMOT H ; MCCUTCHEN DAVID J

Inventor(s): DAVID J MCCUTCHEN ; DAVID MCCUTCHEN ; WILMOT H MCCUTCHEN ; MCCUTCHEN WILMOT HUS ; MCCUTCHEN DAVID JUS

Agent(s): SHELSTON IP PTY LTD; SHELSTON IP; BORDEN LADNER GERVAIS LLP; MILLER JAMES LIONEL WOOLVERTON; MAGGS MICHAEL NORMAN; MARGER JOHNSON AND MCCOLLOM PC; MARGER JOHNSON; MCCOLLOM ALAN T ET AL; EATON KURT 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 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 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

11) Family number: 34550386 (US2007131621A)

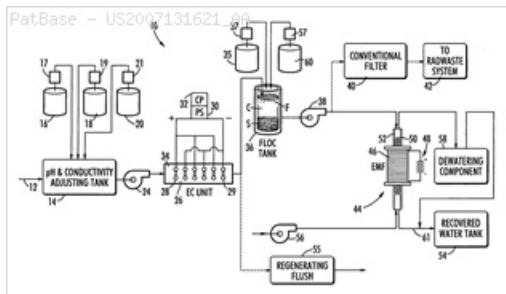
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Title: METHOD AND SYSTEM FOR TREATING RADIOACTIVE WASTE WATER

Abstract: Source: US2007131621A [EN] A method and apparatus for treating radioactive waste water containing contaminating ions, colloids and suspended solids having like (usually negative) charges preventing their precipitation. An electric current is passed through the waste water in an EC assembly to cause electro-coagulation of the contaminants and anodes of this assembly are made of a metal that dissolves to provide cations for neutralizing the negative charges and forming precipitates containing neutralized contaminants. Precipitates are then separated from waste water by an electro-magnetic or other filtering unit. The water pH and conductivity may be adjusted before the EC assembly and additives may be introduced into its effluent for enlargement of precipitate particles, improvement of filtration, improvement of dewaterability, and/or enhancement of magnetism.

Classifications:

International (IPC 8-9): B01D35/06 B03C1/005 C02F1/463 C02F1/465 C02F1/48 C02F1/56 C02F9/00 G21F9/00 G21F9/06 G21F9/10 (Advanced/Invention); C02F1/52 C02F1/66 (Advanced/Non-invention); B01D35/06 B03C1/005 C02F1/461 C02F1/463 C02F1/48 C02F1/54 C02F9/00 G21F9/00 G21F9/06 (Core/Invention); C02F1/52 C02F1/66 (Core/Non-invention)
CPC: Y02W10/37 C02F1/463 C02F1/488 C02F1/52 C02F1/66 C02F9/00 C02F2101/006
European: C02F1/463 C02F9/00 M02F1/48K M02F1/52 M02F1/66 M02F101/00R M02F9/00
US: 204/518 204/518S 204/571 204/571S 210/695 23/295.00R 23/295R 502/439 588/20 588/303



Family:

Publication number	Publication date	Application number	Application date
CA2633011 AA	20080610	CA20062633011	20061214
CA2633011 C	20140225	CA20062633011	20061214
EP1971554 A2	20080924	EP20060847642	20061214
EP1971554 A4	20100407	EP20060847642	20061214
JP2009520185 T2	20090521	JP20080545800T	20061214
JP5193057 B2	20130508	JP20080545800T	20061214
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KR20080083154 A	20080916	KR200807017124	20061214
MX2008007629 A1	20080904	MX20080007629	20061214
US2007131621 AA	20070614	US20050303065	20051214
US2009152203 AA	20090618	US20090371201	20090213
US7563939 BB	20090721	US20050303065	20051214
US8222475 BB	20120717	US20090371201	20090213
WO07070628 A2	20070621	WO2006US47675	20061214
WO07070628 A3	20080110	WO2006US47675	20061214

Priority:

US20050303065	20051214	WO2006US47675	20061214	US20090371201	20090213
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Probable Assignee: ENERGYSOLUTIONS LLC

Assignee(s): (std): DENTON MARK S ; ENERGYSOLUTIONS DIVERSIFIED SE ; DENTON MARK SLATER ; ENERGYSOLUTIONS DIVERSIFIED SERVICES INC ; NUKEM CORP

Assignee(s): NUKEM NOW KNOWN ENERGYSOLUTIONS DIVERSIFIED SERVICES INC AS CORP ; CHEM NUCLEAR SYSTEMS LLC ; CITICORP NORTH AMERICA INC ; CITICORP NORTH AMERICA INC COLLATERAL AGENT AS ; RWE NUKEM CORP ; ENERGYSOLUTIONS LLC ; JPMORGAN CHASE BANK NA ; JPMORGAN CHASE BANK NA ADMINISTRATIVE AGENT AS ; DURATEK INC ; DURATEK SERVICES INC

Inventor(s): (std): DENTON MARK S ; DENTON MARK SLATER

Inventor(s): MARK S DENTON ; DENTON MARK

Agent(s): OYEN WIGGS GREEN AND MUTALA LLP; BOCKHORN AND KOLLEGEN; NEXSEN PRUET ADAMS KLEEMEIER LLC; HOLLAND AND HART LLP; HOLLAND AND HART

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

12) Family number: 31520407 (US2005029174A)

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Title: HYBRID MAGNETOHYDRODYNAMO (MHD) FIELD SANITATION GENERATOR FOR TREATING WASTEWATER, SEWAGES AND SLUDGE AND RECOVERING POTABLE WATER

Abstract: Source: US2005029174A [EN] The Hybrid MHD-FSU (Field Sanitation Unit) innovation is a self-contained sewage treatment plant that fully converts sewage/wastewater into (1) solid organic material, (2) potable, pathogen-free drinking water, and (3) generates electricity. At a high level, the system consists of four main components: (1) Mixer, (2) MHD Reactor, (3) Filter, and (4) Turbine. The innovation presents a stand-alone compact configuration of typical wastewater treatment components (equalization and mixing, process treatment, filtration) that are combined with the customized MHD reactor to perform the waste treatment/water recovery processing. The Hybrid magnetohydrodynamo (MHD) Field Sanitation Unit has the ability (1) to recover an organic material (2) to recover a pathogen free, clean potable drinking water, and (3) to generate electricity using wastewater as the conductive medium. The invention also relates a core heating microwave source coupled to an outer rigid mantle boundary that compose an MHD electrode pair. The invention assemblies are generally configured of three components: (a) magnetron, waveguide and a launch assembly; (b) the perovskite ceramic components; and (c) the conductive wastewater sludge fluid but more specifically the MHD assemblies are described herein in detail. Fig. 1 illustrates a general process flow of the invention. The main components of the invention are composed of the following: (1) the clean water supply feed, (2) the influent raw wastewater (3) the mixer, (4) the MHD reactor chamber, (5) the storage tank for clean water, (6) the filtration system producing potable water, (7) the storage bin for solids and organic material (8) hydro-turbine (9) the potable drinking water storage, (10b) the battery storage system with power conditioning subsystem.

Classifications:**International (ipc 8-9):** B01D17/06 B01D21/00 B09B3/00

C02F11/18 (Advanced/Invention);

C02F1/30 C02F1/44 (Advanced/Non-invention);

B01D17/00 B01D21/00 B09B3/00 C02F11/18 (Core/Invention);

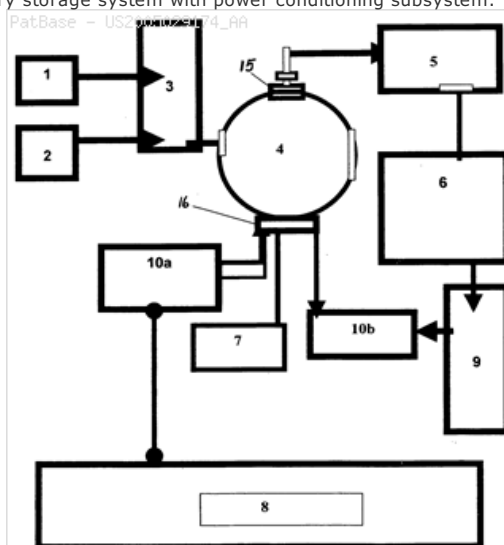
C02F1/30 C02F1/44 (Core/Non-invention)

International (ipc 1-7): B01D17/06**CPC:** Y02W10/30 Y02W10/37 C02F11/18 B01D21/0009 B09B3/0075

C02F1/302 C02F1/441 C02F11/185

European: B01D21/00E B09B3/00M C02F11/18 M02F1/30B

M02F1/44B M02F11/18C

US: 210/143 210/243 210/748 210/748.07**Family:**

Publication number	Publication date	Application number	Application date
US2005029174 AA	20050210	US20030636532	20030808

Priority:

US20030636532 20030808

Probable Assignee: SPIRALCAT OF MARYLAND**Assignee(s):** COLLINS CAROL ANN ; SPIRALCAT OF MARYLAND**Inventor(s):** (std) COLLINS CAROL ANN**Inventor(s):** COLLINS CAROL**Agent(s):** CAROL COLLINS