

Search query (11): [SP]: cross-reference to related applications [0001] this application claims priority to and the benefit of co-pending u.s. provisional patent application ser. no. 61/710,857, filed oct. 8, 2012, which application is incorporated herein by reference in its entirety. statement regarding federally funded research or development [0002] not applicable. the names of the parties to a joint research agreement [0003] not applicable. incorporation-by-reference of material submitted on a compact disc [0004] not applicable. field of the invention [0005] the invention relates to sewage treatment in general and particularly to a human waste treatment system and method that is disconnected from a conventional central sewage treatment system. background of the invention [0006] the conventional sewage treatment system that is disconnected from a conventional central sewage treatment system is an open sewer or a flowing or stationary body of water into which waste, including human waste, is deposited. in many such sewage treatment systems in the third world, no deliberate treatment is applied in addition to those processes that occur in nature. some of the problems with such sewage treatment systems are that diseases are easily transferred to anyone who comes in contact with such a body of water, and the sewage can and often does contaminate ground water supplies that are used in daily life.[0007] in recent years, there has been growing challenge of sanitation dominantly in emerging countries, with a manifestation that more than 1.8 million children under five years old die from waterborne diseases every year (corcoran et al., 2010). in developing countries, a deficit of social infrastructure including electric grid and sewer connection requires sanitation facilities for water management to be fossil-fuel independent and self-contained. in addition, global water models projecting an increase in water stress underscores the importance of a water management strategy towards increasing the water use efficiency (alcamo et al., 2007). in urban area of developed world, water treatment criteria has become more stringent in order to enhance livability in cities, while a local augmentation in population density often causes wastewater flow exceeding the treatment capacity of a centralized sewage treatment facility.[0008] also known in the prior art is weres et al., u.s. pat. no. 5,364,508, issued nov. 15, 1994, which is said to disclose electrochemical methods for producing hydroxyl free radicals and decomposing by oxidation chemical substances dissolved in water. the method utilizes a novel electrode which is capable of operation at sufficiently positive anodic potential to produce hydroxyl radicals. a complete device for oxidizing chemical substances dissolved in water is described, and operating conditions favorable to the method are discussed. examples of oxidation reactions are presented, including oxidation of an herbicide, an insecticide, toluene, cresol, and a fluoroalkyl surfactant.[0009] also known in the prior art is weres et al., u.s. pat. no. 5,419,824, issued may 30, 1995, which is said to disclose a novel electrode which is capable of operation at sufficiently positive anodic potential to produce hydroxyl free radicals and release them into solution, and a process for producing these electrodes. it also provides electrochemical cells utilizing these electrodes, and a novel material included in these electrodes. the electrode consists of titanium metal or a titanium alloy, with an oxide coating that includes titanium dioxide and also includes niobium(iv) oxide or tantalum(iv) oxide, sufficient to impart adequate electrical conductivity to the titanium dioxide under the necessary anodic polarization. an electrode preparation process is described, which allows niobium or tantalum in the oxide coating to be reduced to the +4 valence state, and causes the coating to assume a very stable and insoluble crystal structure. a process for manufacturing ammonium niobate, which is the preferred source compound for niobium in the electrode manufacturing process, is also provided.[0010] also known in the prior art is weres et al., u.s. pat. no. 5,439,577, issued aug. 8, 1995, which is said to disclose an electrochemical water treatment device for producing hydroxyl free radicals and decomposing by oxidation chemical substances dissolved in water. it utilizes a novel electrode which is capable of operation at sufficiently positive anodic potential to produce hydroxyl radicals.[0011] also known in the prior art is weres, u.s. pat. no. 7,494,583, issued feb. 24, 2009, which is said to disclose an electrode having a valve metal substrate and an electrocatalytic surface composition comprising titanium dioxide doped with bismuth, and an electrolytic water purification process utilizing this electrode, wherein organic substances dissolved or dispersed in water are oxidized and degraded in a nonselective manner with good current efficiency.[0012] there is a need for wastewater and solid human waste treatment facilities that are useful without connection to a conventional central sewage treatment system. summary of the invention [0013] according to one aspect, the invention features a self-contained wastewater treatment system lacking a connection to a municipal wastewater treatment system. the self-contained wastewater treatment system comprises an electrochemical cell having at least one anode and at least one cathode, the electrochemical cell having a liquid input port configured to receive input in liquid form, a liquid output port configured to deliver output in liquid form and a gas output port configured to deliver output in a gaseous form, the electrochemical cell having an anode electrical terminal and a cathode electrical terminal a gas accumulation device configured to receive and to store gaseous output from the electrochemical cell a liquid accumulation device configured to receive and to store liquid output from the electrochemical cell an electrical power source lacking a connection to an electrical grid, the electrical power source configured to provide electrical power to the electrochemical cell by way of the anode electrical terminal and the cathode electrical terminal, the electrical power source having at least one input terminal configured to receive control signals at least one input port configured to receive as an input stream manmade waste in the form of one or more of urine, feces, and wastewater a holding tank having a controlled output connection to the liquid input port of the electrochemical cell, the holding tank configured to receive the input stream from the at least one input port, to hold material in the received input stream and to transfer a portion of the material so held for treatment in the electrochemical cell by way of the liquid input port and a controller having at least one controller input port configured to receive input signals representing one or more of data and instructions, the controller having at least one controller output port configured to provide control signals as output, the controller in communication with and configured to control the electrochemical cell, the gas accumulation device, the liquid accumulation device, the electrical power source and the holding tank.[0014] in one embodiment, the electrochemical cell is an photoelectrochemical cell.[0015] in another embodiment, the electrical power source comprises a photovoltaic panel.[0016] in yet another embodiment, the electrical power source comprises a storage battery.[0017] in still another embodiment, the gas accumulation device is configured to store hydrogen gas.[0018] in a further embodiment, the self-contained wastewater treatment system further comprises a hydrogen-air fuel cell configured to receive hydrogen gas from the gas accumulation device and to supply electricity to the electrical power source.[0019] in yet a further embodiment, the controller is a general purpose programmable computer operating under a set of instructions recorded on a machine-readable medium.[0020] in an additional embodiment, the system further comprises measurement apparatus configured to measure operational parameters of the self-contained wastewater treatment system or of its components.[0021] according to another aspect, the invention relates to a wastewater treatment process. the process comprises the step of providing a self-contained wastewater treatment system lacking a connection to a municipal wastewater treatment system, comprising: an electrochemical cell having at least one anode and at least one cathode, the electrochemical cell having a liquid input port configured to receive input in liquid form, a liquid output port configured to deliver output in liquid form and a gas output port configured to deliver output in a gaseous form, the electrochemical cell having an anode electrical terminal and a cathode electrical terminal a gas accumulation device configured to receive and to store gaseous output from the electrochemical cell a liquid accumulation device configured to receive and to store liquid output from the electrochemical cell an electrical power source lacking a connection to an electrical grid, the electrical power source configured to provide electrical power to the electrochemical cell by way of the anode electrical terminal and the cathode electrical terminal, the electrical power source having at least one input terminal configured to receive control signals at least one input port configured to receive as an input stream manmade waste in the form of one or more of urine, feces, and wastewater a holding tank having a controlled output connection to the liquid input port of the electrochemical cell, the holdin

Results: 24

Search history

Search hydrogen wf1 generation (Results 6568)

1:

Search excrement or excreta poop or muck or shit or feces or (fecal wf1 matter) (Results 83920)

2:

Search 1 and 2 (Results 22)

3:

Search PN=(CO20170012602) (Results 1)

4:

Search [SP]: *** warning: ocr data - may be incomplete ***** please email the publication number to patbase@rws.com of any affected text for review ***campo de la invencion la presente invencion pertenece al campo de la electroquímica y consiste en un reactor cuya configuración permite aumentar la eficiencia energética de la producción de hidrógeno a partir de la oxidación de las moléculas orgánicas presentes en los excrementos aplicando electrolisis. si bien el hidrógeno resulta ser el combustible ideal desde el punto de vista ambiental (el agua es el único producto de reacción), los mecanismos conocidos para su obtención a partir de agua, combustibles fósiles o materia orgánica no son limpios y/o eficientes. los reactores electrolíticos conforman un campo de investigación relevante para desarrollar sistemas de producción de hidrógeno limpios y eficientes. antecedentes de la invencion la utilización de combustibles fósiles como mecanismo para atender en su gran mayoría la demanda energética en el mundo (alrededor del 87 percent), constituye la fuente principal de emisión de gases de efecto invernadero (dioxido de carbono), responsables del efecto de calentamiento global que sufre el planeta. adicionalmente, las reservas de este tipo de combustibles (carbon, petroleo y gas) no son ilimitadas, razon por la cual no resulta posible ni adecuado continuar dependiendo de ellos como fuente de energia. 5 10 15 20 25 30 debido a lo anterior, el mercado mundial de las llamadas energias renovables esta creciendo de manera sostenida y robusta, lo anterior a pesar de que dichas energias renovables aun se encuentran en fases de investigacion para que resulten viables desde el

punto de vista economico, asi como a pesar de que no siempre son totalmente limpias debido a que para su obtencion se requiere en ocasiones de los mismos combustibles fosiles.de manera particular, el uso de hidrogeno como fuente de energia y su transformacion en electricidad ha venido adquiriendo en los ultimos anos gran importancia. en efecto, es cada vez mas alto el porcentaje de hidrogeno que se utiliza en las denominadas pilas de combustible o simplemente como sustituyente directo de la gasolina para lograr el funcionamiento de motores de combustion interna (actualmente, la gran mayoria del hidrogeno que se obtiene en la industria es empleado para la sintesis de amoniaco o para el craqueo del petroleo).sin embargo, el principal inconveniente que tiene actualmente el uso del hidrogeno es su produccion, pues si bien existen varias formas para obtenerlo, las mas utilizadas en la actualidad no se consideran tecnologias limpias, a saber: mediante el gas natural por medio de un proceso de reformado con vapor, mediante el reformado del carbon para producir hidrogeno mediante un proceso de gasificacion, a partir de gasolina o de biomasa gasificada, entre otros. asi, por ejemplo, mas de la mitad de todo el hidrogeno que se produce en el mundo se obtiene a partir del reformado de gas natural, el cual es un combustible fosil escaso, costoso y que en su proceso libera dióxido de carbono.el hidrogeno tambien puede ser obtenido a partir del agua, ya sea mediante su produccion biologica con un bioreactor de algas, utilizando calor (termolisis), por metodos quimicos (reduccion quimica), empleando electricidad (electrolisis del agua), entre otros.2 5 10 15 20 25 30 en relacion particular con la electrolisis del agua, si bien esta corresponde a una tecnologia limpia para la obtencion del hidrogeno (siempre y cuando la electricidad empleada no provenga de los combustibles fosiles), no es un metodo ampliamente utilizado debido principalmente a que su eficiencia (termodinamica y economica) es poco competitiva en relacion con, por ejemplo, el reformado del gas natural.frente a dicha situacion, en los ultimos anos se han realizado diferentes esfuerzos para desarrollar mecanismos tendientes a obtener hidrogeno a partir de la electrolisis de materia organica, cuyo potencial de oxidacion generalmente es menor que el del agua.asi, por ejemplo, el documento de patente ep1892215 (junio 2, 2006) revela un dispositivo para la generacion electroquimica de hidrogeno a partir de la oxidacion de compuestos organicos seleccionados entre alcoholes (metanol, etanol, etilen glicol, 2-propanol), aldehidos (formaldehido), acidos carboxilicos (acido formico) y eteres (diethyl eter), y empleando bajas temperaturas de reaccion (100 degrees centigrade o menos).dicho dispositivo generador de hidrogeno se caracteriza porque comprende una membrana de particion, un electrodo de combustible ubicado sobre una de las superficies de la membrana de particion, un medio para suministrar un combustible que contiene el compuesto organico y agua al electrodo de combustible, un electrodo oxidante provisto en la otra superficie de la membrana de particion, un medio para suministrar un agente oxidante al electrodo oxidante, y un medio para generar y recoger el gas que contiene hidrogeno del electrodo de combustible.utilizando metanol como ejemplo, los solicitantes de ep1892215 plantean que la reaccion quimica redox que se presenta puede expresarse mediante la siguiente formula: $3\text{H}_2 + 5\text{CO} + 25\text{H}_2\text{O} + 2\text{H}_2\text{O} + 3/2\text{O}_2 + 2\text{CO}_2 + 3\text{H}_2\text{O} + 3\text{H}_2$ donde dicha reaccion tendria una eficiencia teorica del 59 percent.finalmente, los solicitantes de ep1892215 senalan que usando el dispositivo generador de hidrogeno alla revelado, el hidrogeno puede suministrarse facilmente a un tanque de almacenamiento de hidrogeno para suministrar hidrogeno a un contenedor de almacenamiento de hidrogeno incorporado en un automovil electrico (automovil de pila de combustible). ademas, cuando se usa hidrogeno como gas de procesamiento o similar en la fabricacion de dispositivos semiconductores, el hidrogeno puede suministrarse facilmente a un sitio de procesamiento proporcionando un medio de almacenamiento de hidrogeno.por su parte, en la patente us2008/0277273 (junio 25, 2008) se revela un sistema para producir gas hidrogeno a partir de materia organica biodegradable y utilizando bacterias como biocatalizadores.en particular, dicha patente divulga un sistema electroquimico para la generacion de gas hidrogeno que utiliza preferiblemente aguas residuales, y en donde el reactor consiste basicamente de una carcasa conformada por una sola camara en cuyo interior estan dispuestos el catodo y el anodo sin que alguna membrana o separador de intercambio ionico sea dispuesto entre ellos.en funcionamiento, la carcasa se llena parcialmente con un medio acuoso sustancialmente libre de oxigeno pero que contiene una pluralidad de bacterias exoelectrogenicas que se encargan de oxidar el combustible organico biodegradable que esta presente en el espacio interior de la carcasa.adicionalmente y de manera opcional, dicho medio acuoso incluye un mediador quimico para la transferencia al anodo de los electrones generados por la pluralidad de bacterias.4 5 10 15 20 25 30 de acuerdo con los ensayos experimentales revelados por los solicitantes del documento de patente us2008/0277273, empleando un voltaje de 0,5 v, el reactor produjo un total de 31,88 ml de gas, y de este 30,76 ml fue hidrogeno gaseoso, lo que represento una pureza del 96.5 percent. por su parte, la eficiencia del proceso, evaluada en terminos del calor de combustion del gas de hidrogeno producido en comparacion con la electricidad empleada (ambos en base a joules) fue del 334 percent.la eficiencia columbica del proceso, definida como el porcentaje de electrones recuperados del sustrato fue del 94 percent, mientras que segun el contenido de energia del sustrato degradado durante una prueba (92 percent) y el calor de combustion del gas de hidrogeno producido, la eficiencia energetica general del proceso fue del 93 percent. o finalmente, la densidad de corriente producida en el sistema es de 147 a/m², mientras que la tasa de produccion de gas de hidrogeno normalizada al volumen de liquido del reactor fue de 1640 litros de gas de hidrogeno por metro cubico de reactor por dia.de otro lado, en los ultimos anos se han llevado estudios particulares para obtener hidrogeno a partir de la electrolisis de la urea presente en la orina. entre estos se encuentra la investigacion publicada en el articulo cientifico boggs, bryan k, et al, urea electrolysis: direct hydrogen production from urine chemical communications, 2009, n degrees 32, donde se divulga un proceso electroquimico que implica la electrolisis de la urea en un medio alcalino (koh) para la produccion de h₂. los autores mostraron que es posible oxidar electroquimicamente la urea (a una concentracion promedio de 0,33 m) empleando electrodos fabricados con metales de transicion de bajo costo, como el niquel.asi mismo, en el articulo cientifico king, rebecca l., et al, investigation of multimetal catalysts for stable hydrogen production via urea electrolysis journal of power sources, 2011, vol. 196, n degrees 22, se demostro que la electrolisis de urea es un metodo viable para la remediacion de aguas residuales y la produccion 5 simultanea de hidrogeno, senalando que si bien un catalizador de niquel de bajo costo resulta optimo para la oxidacion de urea en medio alcalino, resultaba necesario encontrar mecanismos para disminuir la obstruccion de la superficie y aumentar la baja densidad de corriente. en este sentido y de acuerdo con los 5 resultados experimentales revelados por los autores, un electrodo multimetal rhni permite reducir el sobrepotencial para la electrooxidacion de urea, asi como una mejora en la densidad de corriente en un factor de 200 en comparacion con un catalizador de ni.10 finalmente, en el documento de patente mx 2011/013384 (diciembre 13, 2011) se divulga una celda electroquimica de generacion de hidrogeno y ox (Results 1)

Search electrolysis (Results 118538)

6:

Search 6 and 2 (Results 378)

7:

Search urea (Results 382206)

8:

Search 7 and 8 (Results 58)

9:

Search 9 and 1 (Results 4)

10:

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provide electrical power to the electrochemical cell by way of the anode electrical terminal and the cathode electrical terminal, the electrical power source having at least one input terminal configured to receive control signals at least one input port configured to receive as an input stream manmade waste in the form of one or more of urine, feces, and wastewater a holding tank having a controlled output connection to the liquid input port of the electrochemical cell, the holding tank configured to receive the input stream from the at least one input port, to hold material in the received input stream and to transfer a portion of the material so held for treatment in the electrochemical cell by way of the liquid input port and a controller having at least one controller input port configured to receive input signals representing one or more of data and instructions, the controller having at least one controller output port configured to provide control signals as output, the 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embodiment, the system further comprises measurement apparatus configured to measure operational parameters of the self-contained wastewater treatment system or of its components.[0021] according to another aspect, the invention relates to a wastewater treatment process. the process comprises the step of providing an self-contained wastewater treatment system lacking a connection to a municipal wastewater treatment system, comprising: an electrochemical cell having at least one anode and at least one cathode, the electrochemical cell having a liquid input port configured to receive input in liquid form, a liquid output port configured to deliver output in liquid form and a gas output port configured to deliver output in a gaseous form, the electrochemical cell having an anode electrical terminal and a cathode electrical terminal a gas accumulation device configured to receive and to store gaseous output from the electrochemical cell a liquid accumulation device configured to receive 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Title: METHOD OF AND APPARATUS FOR SEWAGE TREATMENT

Abstract: A method of treating sewage comprises separating solids (3) from the sewage (1), accumulating and averaging the separated sewage (5), and further subjecting averaged sewage (7) to electrochemical treatment so as to produce a foam layer (9), forming in the resulting foam layer (9) air counterflows by means of rarefaction provided by a pump (10) at the solids separation stage such that the flows of air (11) and foam are directed from the peripheral areas of the foam layer (9) towards the central portion thereof and further onto the solids separation stage, while treated liquid (14) is directed towards the area underlying the central portion of the foam layer (9) and subsequently withdrawn therefrom.

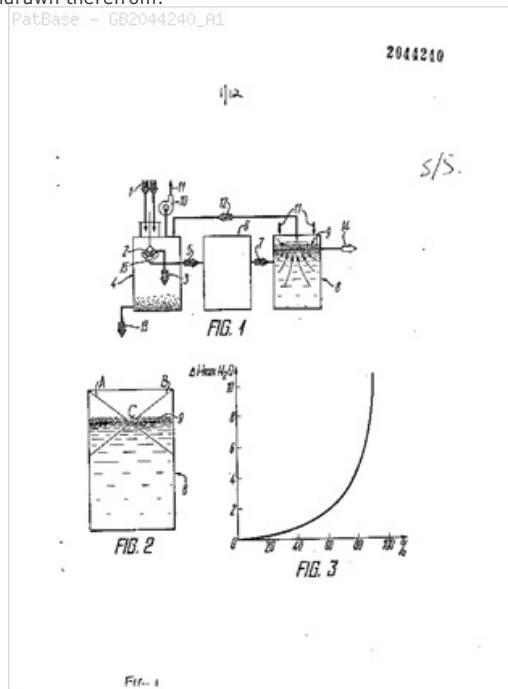
Classifications:

International (IPC 8-9): B01D19/02 B01D29/00 B01D29/86 B01D33/27 B01D35/00 B63J4/00 B63J9/00 C02F1/00 C02F1/24 C02F1/46 C02F1/465 C02F9/00 (Advanced/Invention); B63J4/00 C02F101/00 C02F103/00 C02F103/02 C02F103/34 (Advanced/Non-invention); B01D19/02 B01D29/00 B01D33/00 B01D35/00 B63J4/00 B63J9/00 C02F1/00 C02F1/24 C02F1/46 C02F1/461 C02F9/00 (Core/Invention); B63J4/00 (Core/Non-invention)

International (IPC 1-7): B01D29/00 B01D29/40 B01D29/86 B01D33/27 B01D35/00 B63J1/00 B63J4/00 B63J5/00 C02F1/00 C02F1/24 C02F1/46 C02F9/00

CPC: C02F2103/008 B01D19/02 B63J4/006 C02F1/465 C02F9/00

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Family:

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DD148556 A3	19810603	DD19800218965	19800206
DD148557 A3	19810603	DD19800218821	19800128
DD148566 A3	19810603	DD19800218872	19800128
DD148567 A3	19810603	DD19800219682	19800314
DD158174 A3	19830105	DD19800219883	19800319
DE3010748 A1	19810115	DE19803010748	19800320
DE3010748 C2	19831208	DE19803010748	19800320
FI74695 B	19871130	FI19800000816	19800317
FI74695 C	19880310	FI19800000816	19800317
FI800816 A	19800922	FI19800000816	19800317
FR2451897 A1	19801017	FR19800006246	19800320
FR2451897 B1	19820716	FR19800006246	19800320
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GB2044240 B2	19830316	GB19800005205	19800215
SE440642 B	19850812	SE19800002019	19800314
SE440642 C	19851121	SE19800002019	19800314
SE8002019 A	19800922	SE19800002019	19800314
SE8002019 L	19800922	SE19800002019	19800314
SU1039813 A1	19830907	SU19792733610	19790321
SU1039813 T	19830907	SU19792733610	19790321
SU891119 A1	19811223	SU19792777952	19790705
SU891119 T	19811223	SU19792777952	19790705
SU918276 A1	19820407	SU19792757003	19790511
SU918276 T	19820407	SU19792757003	19790511
SU925368 A1	19820507	SU19792777953	19790705
SU925368 T	19820507	SU19792777953	19790705

Priority:

SU19792733610 19790321 SU19792757001 19790511 SU19792757003 19790511
 SU19792757004 19790511 SU19792777954 19790705 SU19792777952 19790705
 SU19792777953 19790705

Probable Assignee: LE T I KHOLODILNOJ PROMY

Assignee(s): (std): LE T I KHOLODIL ; LE T I KHOLODILNOJ PROMYSLENNY ; LE T I KHOLODILNOI PROM ; LE T I KHOLODILNOI PROMY ; LE TEKHNI KHOLODILNOI PROMYSH ; LE T IN ; LE T KHOLODIL PROMYSH ; LE T I KHOLODILNOJ PROMY ; LENINGRAD TECHNOLOGICAL INST OF REFRIGERATION IND ; ZENIN GENNADIJ S ; YATSENKO

VLADIMIR N ; SOLOVEV ANATOLIJ T ; SHAMSHIN VADIM M ; VESELKOV VIKTOR D ; LENINGRADSKY
TEKHNOLOGICHESKY INSTITUT KHOLODILNOI ; LENINGRADSKY TEKHNOLOGICHESKY INST KHOLODILN ;
BOGATYKH SEMEN A

Assignee(s):

BOGATYKH SEMEN A SU ; YSHLENNOSTI ; LENINGRADSKY TEKHNOLOGICHESKY IN ; LENINGRADSKY
TEKHN INST KHOLODILNOI PROMYSH ; YATSENKO VLADIMIR N SU ; ZENIN GENNADIJ S SU ; VESELKOV
VIKTOR D SU ; SHAMSHIN VADIM M SU ; SOLOVEV ANATOLIJ T SU ; LENINGRADSKIJ
TEKHNOLOGITSCHESKIJ INSTITUT KHOLODILNOJ PROMYSCHLENNOSTI LENINGRAD SOWJETUNION ;
LENINGRADSKY TEKHNOLOGICHESKY INSTITUT KHOLODILNOI PROMYSCHLENNOSTI ; LENINGRADSKY
TEKHNOLOGICHESKY INSTITUT KHOLODILNOI PROM ; LENINGRADSKY TEKHNOLOGICHESKY INST ;
LENINGRADSKIJ TEKHNOLOGITSCHESKIJ INST KHOLODILNOJ PROMYSCHLENNOSTI LENINGRAD
SOWJETUNION ; LENINGRADSKY TEKHNOLOGICHESKY INST KHOLODILNOI PROMYSCHLENNOSTI ;
LENINGRADSKY TEKHNOLOGICHESKY INST KHOLODILNOI PROM ; LENINGRADSKY TEKHNOLOGICHESKY
INSTITUT ; LENINGRADSKIJ TEKHNOLOGITSCHESKIJ INSTITUT CHOLODI ; LENINGRAD TEKHNOLOGINST
KHOLODIL PROMYSH ; LENINGRADSKIJ TEKHNOLOGICESKIJ INST KHOLODIL N ; LENINGRADSKIJ
TEKHNOLOGICESKIJ INSTITUT KHOLODILNO ; LE T I KHOLODILNOJ PROMYSCHLENNOSTI ; LENINGRADSKIJ
TEKHNOLOGICESKIJ INSTITUT KHOLODILNOJ PROMYSLENNOSTI SU ; LENINGRADSKIJ TEKHNOLOGICESKIJ
INSTITUT KHOLODIL NOJ PROMYSLENNOSTI LENINGRAD SU ; LENINGRADSKIJ TEKHNOLOGICESKIJ INST
CHOLODIL NOJ PROMYSLENNOSTI LENINGRAD SU

Inventor(s): (std):

1G S ZENIN ; 2S A BOGATYKH ; 3V N YATSENKO ; 4A T SOLOVIEV ; 5V M SHAMSHIN ; 6V D VESELKOV ; 7V
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SEMEN ALEXANDROVICH ; FOMIN VALENTIN P ; FOMIN VALENTIN P SU ; FOMIN VALENTIN PAVLOVICH ; G S
ZENIN ; JACENKO VLADIMIR N ; JAZENKO VLADIMIR N ; NEFEDOV VLADIMIR E SU ; NEFEDOV VLADIMIR
EFIMOVICH ; NEFEDOV VLADIMIR J ; NEFEDOV VLADIMIR JE ; S A BOGATYKH ; SAMSIN VADIM M ;
SCHAMSCHIN VADIM M ; SENIN GENNADIJ S ; SHAMSHIN VADIM M SU ; SHAMSHIN VADIM MAXIMOVICH ;
SOLOVEV ANATOLIJ T ; SOLOVEV ANATOLIJ T SU ; SOLOVIEV ANATOLY TIMOFEEVICH ; SOLOVJEV
ANATOLIJ T ; V D VESELKOV ; V E NEFEDOV ; V M SHAMSHIN ; V N YATSENKO ; VESELKOV VIKTOR
DMITRIEVICH ; YATSENKO VLADIMIR N SU ; YATSENKO VLADIMIR NIKOLAEVICH ; ZENIN GENNADIJ S ;
ZENIN GENNADIJ S SU ; ZENIN GENNADY SERGEEVICH ; ZENIN G S ; YATSENKO V N ; VESELKOV V D ;
SOLOVIEV A T ; SHAMSHIN V M ; NEFEDOV V E ; FOMIN V P ; BOGATYKH S A ; V P FOMIN ; VESELKOV
VIKTOR D ; VESELKOV VIKTOR D SU ; YATSENKO VLADIMIR N ; SHAMSHIN VADIM M ; BOGATYKH SEMEN A
; NEFEDOV VLADIMIR E

Inventor(s):

1 G S ZENIN ; SAMSIN VADIM M SU ; JACENKO VLADIMIR N SU ; VESELKOV VIKTOR D WYBORG
LENINGRADSKOJ OBLASTI ; BOGATYCH SEMEN A SU ; V P FOMIN ; V N YATSENKO ; V M SHAMSHIN ; V E
NEFEDOV ; V D VESELKOV ; S A BOGATYKH ; G S ZENIN ; A T SOLOVIEV ; 8 V P FOMIN ; 7 V E NEFEDOV ;
6 V D VESELKOV ; 5 V M SHAMSHIN ; 4 A T SOLOVIEV ; 3 V N YATSENKO ; 2 S A BOGATYKH

Title: DEVICE AND PROCESS FOR REMOVING MICROBIAL IMPURITIES IN WATER BASED LIQUIDS AS WELL AS THE USE OF THE DEVICE

Abstract: The present invention relates to the technical filed of electrochemical elimination or reduction of microbial impurities of liquids. The liquids treated may inter alia include wastewater, industrial process water and water intended for human consumption. The device comprises a disinfection chamber connected through a liquid inlet located in the bottom of a base area by a manifold; an inner chamber housing an electrode stack comprising at least two perforated electrode plates made of conductive material symmetrically placed at a distance of 1-5 mm connected in parallel via connector mounted at the chamber; said electrode plates being separated from each other and the chamber wall at a fixed distance by spacers, and arranged such that in perpendicular plane view 60-100 percent of the area of passage is covered by the electrodes; an outer chamber; an outer shell; a liquid outlet; connectors for wiring connecting the connector and one or more external power supply units, each of the above elements being designed such that said liquid has a forward velocity of 2-50 cm/s and an initial perpendicular velocity component above 10 cm/s and wherein further the current density is above 5 mA/cm².

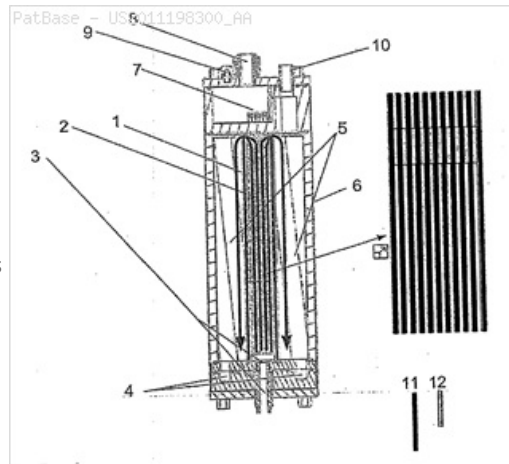
Classifications:

International (IPC 8-9): C02F1/461 C02F1/467 C02F1/76 C25B11/03 C25B15/02 (Advanced/Invention); C02F1/461 (Core/Invention)

CPC: C02F1/001 C02F1/4674 C02F2001/46128 C02F2001/46133 C02F2001/46142 C02F2001/46157 C02F2001/46161 C02F2001/46185 C02F2201/4611 C02F2201/46125 C02F2201/46145 C02F2209/001 C02F2209/05 C02F2209/29 C02F2303/16

European: C02F1/467B2 M02F1/00D M02F1/461B2H M02F1/461B2J M02F1/461B2J2B M02F1/461B2L2 M02F1/461B2L2B M02F1/461B6B M02F201/461B2 M02F201/461B6B M02F201/461B6D M02F209/00B M02F209/05 M02F209/29 M02F303/16

US: 204/230.2 204/230.200S 204/276 204/276S 204/278.5 204/278.500S 205/758 205/758S 210/748.2 210/748.200P



Family:

Publication number	Publication date	Application number	Application date
AU2009298257 AA	20100408	AU20090298257	20090930
CN102224110 A	20111019	CN200980146639	20090930
EP2331469 A1	20110615	EP20090776204	20090930
US2011198300 AA	20110818	US20090120644	20090930
WO10037391 A1	20100408	WO2009DK00215	20090930

Priority:

EP20080017174 20080930 US20080101183P 20080930 EP20080018954 20081030
US20080109515P 20081030 EP20090776204 20090930 US20090120644 20090930
WO2009DK00215 20090930

Probable Assignee: ADEPT WATER TECHNOLOGIES A S

Assignee(s): (std): ADEPT WATER TECHNOLOGIES AS ; FOGH POUL ; LINDBERG KARIM ; SADOLIN JANNIK

Assignee(s): ADEPT WATER TECHNOLOGIES A S

Inventor(s): (std): FOGH POUL ; JANNIK SADOLIN ; KARIM LINDBERG ; LINDBERG KARIM ; POUL FOGH ; SADOLIN JANNIK

Agent(s): SHELSTON IP; SHELSTON IP PTY LTD; WADSKOV HANSEN STEEN LYDERS LERCHE; BUDDE SCHOU A S

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: Ecological water closet

Abstract: The invention discloses an ecological lavatory which comprises a urinal, with a reaction groove having batteries, the dejection can enter the reaction groove directly, the battery comprises faeces, microorganism, proton membrane and electrode. The invention can realize water purification and power generation at the same time.

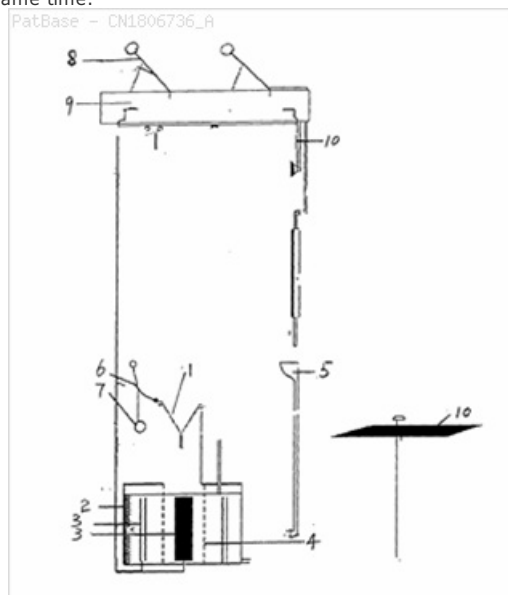
Classifications:

International (IPC 8-9): A47K11/00 H01M14/00

H01M8/16 (Advanced/Invention)

CPC: Y02E60/527

European: Y02E60/52H



Family:

Publication number	Publication date	Application number	Application date
 CN1806736 A	20060726	CN200610038252	20060213

Priority:

CN200610038252 20060213

Probable Assignee: UNIV NANJING

Assignee(s): (std): NANJING UNIV ; NANJING UNIVERSITY ; UNIV NANJING

Inventor(s): (std): LU GENFA JIANG

Inventor(s): GENFA JIANG LU

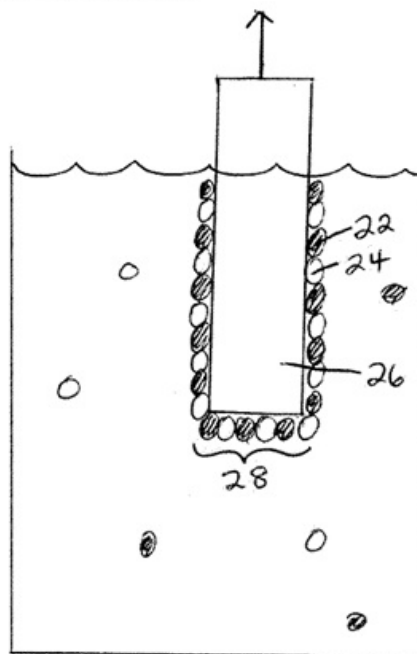
Title: CATALYTIC MATERIALS, ELECTRODES, AND SYSTEMS FOR WATER ELECTROLYSIS AND OTHER ELECTROCHEMICAL TECHNIQUES

Abstract: Catalysts, electrodes, devices, kits, and systems for electrolysis which can be used for energy storage, particularly in the area of energy conversion, and/or production of oxygen, hydrogen, and/or oxygen and/or hydrogen containing species. Compositions and methods for forming electrodes and other devices are also provided.

Classifications:

International (IPC 8-9): C02F1/469 C25B C25B1/04 C25B11/06 C25B9/00 C25B9/04 E21B49/00 H01M4/90 H01M8/00 H01M8/02 H01M8/18 (Advanced/Invention); C25B1/04 C25B11/06 H01M4/90 (Advanced/Non-invention); C02F1/469 C25B1/00 C25B11/00 H01M4/90 (Core/Invention); C25B (Subclass/Invention)
CPC: Y02E70/10 Y02E70/20 Y02W10/33 Y02W10/37 C25B11/0442 Y02E60/366 C25B11/04 C25B1/04
European: C25B1/04 C25B11/04 C25B11/04D Y02E60/36F
US: 204/293 204/293S 204/547

PatBase - US2010101955_AA



Family:

Publication number	Publication date	Application number	Application date
AU2009260794 AA	20091223	AU20090260794	20090617
BRPI0915418 A2	20170627	BR2009PI15418	20090617
CN102149852 A	20110810	CN200980132275	20090617
EP2315862 A2	20110504	EP20090767066	20090617
IL210009 A0	20110228	IL20090210009	20090617
JP2011525217 T2	20110915	JP20110514609T	20090617
KR20110033212 A	20110330	KR20117001218	20090617
MX2010014396 A1	20110617	MX20100014396	20090617
RU2011101575 A	20120727	RU20110101575	20090617
US2010101955 AA	20100429	US20090486694	20090617
WO09154753 A2	20091223	WO2009US03627	20090617
WO09154753 A3	20100715	WO2009US03627	20090617
WO09154753 A9	20100415	WO2009US03627	20090617

Priority:

US20080073701	20080618	US20080073701P	20080618	US20080084948P	20080730
US20080084948	20080730	US20080103879P	20081008	US20080103879	20081008
US20090146484P	20090122	US20090146484	20090122	US20090179581P	20090519
US20090179581	20090519	US20090486694	20090617	WO2009US03627	20090617

Probable Assignee: MASSACHUSETTS INST OF TECHNOLOGY

Assignee(s): (std): MASSACHUSETTS INST OF TECH ; SUN CATALYTIX CORP ; SURENDRANATH YOGESH ; NOCERA DANIEL G ; REECE STEVEN Y ; MASSACHUSETTS INST TECHNOLOGY ; DINCA MIRCEA ; ESSWEIN ARTHUR J ; KANAN MATTHEW W ; LUTTERMAN DANIEL A

Assignee(s): NATIONAL INSTITUTES OF HEALTH NIH US DEPT OF HEALT ; NATIONAL INSTITUTES OF HEALTH (NIH) US DEPT OF HEALTH AND HUMAN SERVICES (DHHS) US GOVERNMENT ; NATIONAL INSTITUTES OF HEALTH NIH US DEPT OF HEALTH AND HUMAN SERVICES DHHS US GOVERNMENT ; MASSACHUSETTS INST ; MASSACHUSETTS INST OF TECHNOLOGY ; NATIONAL INSTITUTES OF HEALTH NIH US DEPT OF HEA

Inventor(s): (std): ARTHUR J ESSWEIN ; DANIEL A LUTTERMAN ; DANIEL G NOCERA ; DINCA MIRCEA ; ESSWEIN ARTHUR J ; KANAN MATTHEW W ; LUTTERMAN DANIEL A ; MATTHEW W KANAN ; MIRCEA DINCA ; NOCERA DANIEL G ; REECE STEVEN Y ; STEVEN Y REECE ; SURENDRANATH YOGESH ; YOGESH SURENDRANATH

Agent(s): PIZZEYS ; PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD ; HOFFMANN EITLE ; WOLF GREENFIELD AND SACKS PC ; OYER TIMOTHY J

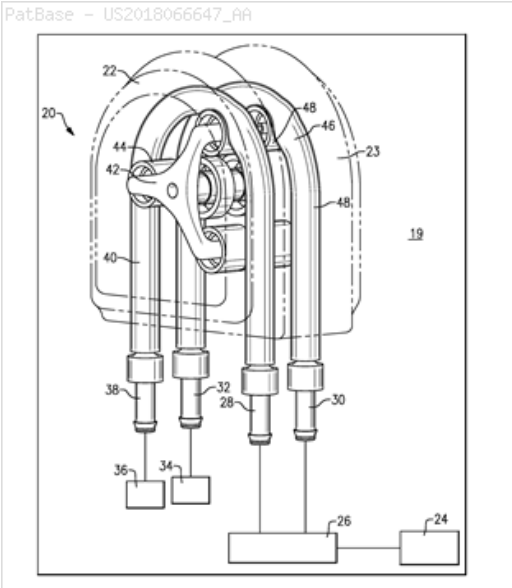
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Title: PERISTALTIC MOTOR AND PUMP COMBINATION

Abstract: A peristaltic pump system has a pump tube and a pump rotor engaging the pump tube. The pump rotor is drivable to rotate to move a pump fluid through the pump tube from a pump inlet to a pump outlet. A motor drives the pump rotor to rotate. The motor includes a motor tube and a motor rotor to be driven to rotate by a motor fluid moving through the motor tube from a motor inlet to a motor outlet. A urine treatment system and method are also disclosed.

Classifications:

International (IPC 8-9): B64G1/60 C02F1/00 F04B15/04 F04B43/12 (Advanced/Invention)
CPC: B64G1/60 F04B15/04 F04B2205/01 F04B43/1253 F04B43/12



Family:

Publication number	Publication date	Application number	Application date
EP3290708 A1	20180307	EP20170189711	20170906
US2018066647 AA	20180308	US20160256940	20160906

Priority:

US20160256940 20160906

Probable Assignee: HAMILTON SUNDSTRAND CORP

Assignee(s): (std): HAMILTON SUNDSTRAND CORP

Inventor(s): (std): HIMMELMANN RICHARD A

Agent(s): GITTINS ALEX MICHAEL

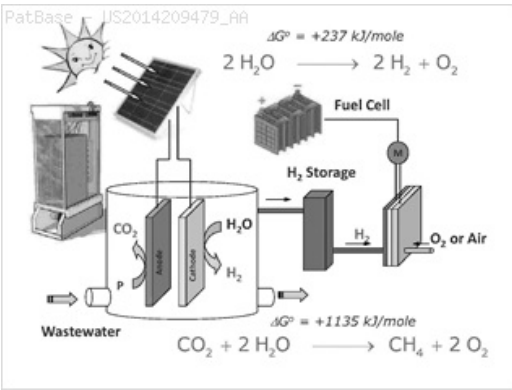
Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Title: SELF-CONTAINED, PV-POWERED DOMESTIC TOILET AND WASTEWATER TREATMENT SYSTEM

Abstract: A wastewater treatment system and method for remediating wastewater and human waste that is self-contained and that has no connection to a municipal wastewater system and no connection to an electrical grid. The domestic toilet and wastewater treatment system can be powered by a photovoltaic panel as a source of electricity. The system includes an electrochemical cell that allows a waste stream to be disinfected in a few hours to a condition where no viable bacterial colonies can be cultured. The system produces a liquid stream that is suitable for system flushing or for uses in which non-potable water is acceptable. The system can generate hydrogen as a product that can be used to generate power. The system can generate nitrate, urea, ammonia and phosphate for use as fertilizer. The disinfected residual organic solids are also completely disinfected for potential use as an organic soil amendment for agriculture.

Classifications:

International (IPC 8-9): C02F1/46 C02F1/467 (Advanced/Invention)
CPC: C02F1/444 C02F3/28 C02F2001/007 C02F2001/46142
C02F2103/002 C02F2103/005 C02F2201/008 C02F2201/009
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C02F1/4674 C02F2201/4611 C02F2201/4612 Y02W10/33 Y02W10/37
Y02A20/211 Y02A20/212
US: 204/278 205/743



Family:

Publication number	Publication date	Application number	Application date
CN104755431 A	20150701	CN201380052639	20131008
IN03740DN2015 A	20150918	IN2015DN03740	20150501
US2014209479 AA	20140731	US20130048163	20131008
WO14058825 A1	20140417	WO2013US63790	20131008

Priority:

US20120710857P 20121008 US20130048163 20131008 WO2013US63790 20131008

Probable Assignee: CALIFORNIA INST OF TECHNOLOGY

Assignee(s): (std): CALIFORNIA INSTITUTE OF TECHNOLOGY ; CID CLEMENT A ; CHO KANGWOO ; HOFFMANN MICHAEL R ; KWON DAEJUNG ; QU YAN ; ARYANFAR ASGHAR ; CALIFORNIA INST OF TECHN

Assignee(s): CALIFORNIA INST OF TECHNOLOGY

Inventor(s): (std): ARYANFAR ASGHAR ; CHO KANGWOO ; CID CLEMENT A ; HOFFMANN MICHAEL R ; KWON DAEJUNG ; QU YAN

Agent(s): MILSTEIN JOSEPH B

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 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: ELECTROLYTIC TREATMENT OF AQUEOUS MEDIA

Abstract: A variety of pollutants and other contaminants may be removed from a variety of aqueous media using electrolytic treatments. The treatment includes inserting an anode and a cathode into the medium undergoing treatment, and applying a high current and voltage to the electrodes. The treatment may also include the addition of catalytic enzymes to the medium undergoing treatment. The present methods are compatible with aquatic lifeforms, and offer an effective alternative to chemical-based water treatment systems.

Classifications:

International (IPC 8-9): A01K63/04 C02F1/46 C02F1/461

C02F3/34 (Advanced/Invention);

C02F1/467 C02F1/52 (Advanced/Non-invention);

A01K63/04 C02F1/46 C02F3/34 (Core/Invention);

C02F1/461 C02F1/52 (Core/Non-invention)

International (IPC 1-7): C02F1/46 C02F1/461

CPC: A01K63/04 C02F1/4672 C02F1/5236 C02F3/005 C02F3/342

C02F2101/105 C02F2101/16 C02F2101/36 C02F2103/10 C02F2103/20

C02F2103/22 C02F2103/32 C02F2201/4613

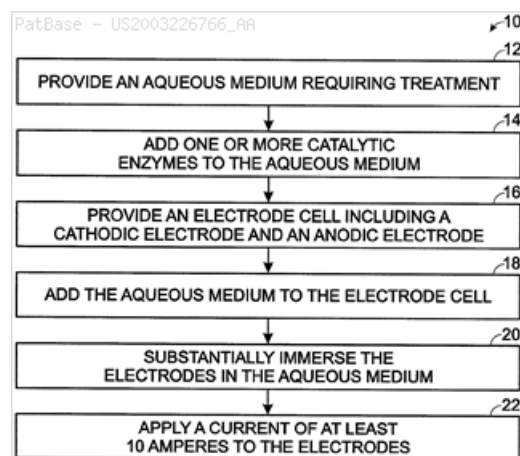
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M02F101/10C M02F101/16 M02F101/36 M02F103/10 M02F103/20

M02F103/22 M02F103/32 M02F201/461B6B2

US: 205/688 205/698 205/698S 205/701 205/742 205/756 205/756S

205/759 205/760 210/632



Family:

Publication number	Publication date	Application number	Application date
CA2431106 AA	20031205	CA20032431106	20030604
US2003226766 AA	20031211	US20020163813	20020605
US6802956 BB	20041012	US20020163813	20020605

Priority:

US20020163813 20020605 CA20032431106 20030604

Probable Assignee: AQUATIC TECHNOLOGIES LLC

Assignee(s): (std): AQUATIC TECHNOLOGIES

Assignee(s): AQUATIC TECHNOLOGIES 11710 SW FOXRIDGE ; AQUATIC TECHNOLOGIES LLC ; ORLEBEKE DAVID N ; ORLEBEKE JOYCE K

Inventor(s): (std): ORLEBEKE DAVID N

Inventor(s): ORLEBEKE JOYCE K

Agent(s): SMART AND BIGGAR

Title: Apparatus for electrochemical treatment of liquid (Machine translation)

Abstract: Source: RU88011U

Machine translation: 1. Device for electrochemical treatment of liquid containing chamber with treated water and located in the electrode, the voltage source stabilizers electrical parameter in the electrode circuit, characterized in that the device is introduced means for measuring the current in the electrodes and the means to control the parameters of the processing liquid made in the form of programmable controller, equipped with the possibility of the control features of the current values of the device parameters, timing, mode control and determine the total amount of electricity produced fluid during processing, a voltage source and means of stabilizing the electrical parameters in the electrode circuit in the form of pulse power converter, which are connected to the input of the inverter output and the output means for measuring the current data input of the controller is connected to the data output means for measuring current, and its output is connected to the input of a key element in series between the electrodes and means for measuring the current.! 2. The device according to claim 1, characterized in that it is equipped with a status indicator, the input of which is connected to the controller.

Classifications:

International (IPC 8-9): C02F1/46 (Advanced/Invention);
C02F1/46 (Core/Invention)

Family:

Publication number	Publication date	Application number	Application date
 RU88011 U1	20091027	RU20090124407U	20090622

Priority:

RU20090124407U 20090622

Title: MARINE WASTEWATER TREATMENT

Abstract: Methods and systems for treating wastewater. Wastewater slurry collected in a tank is routed by a macerator pump. The macerated slurry is piped to an electrolytic cell to oxidize and disinfect it. The slurry is then piped to an electrocoagulation cell. Suspended solid particles are flocculated in the electrocoagulation cell. The flocculated slurry is routed to a primary settling tank for separation of sludge and a substantially clarified supernatant. The supernatant is piped to a secondary clarifying tank to facilitate further separation of the sludge. The sludge is discharged to a sludge collection tank. The turbidity levels of the sludge discharged is continually monitored. When the turbidity level equals a pre-determined low value, the sludge discharge is stopped. The substantially clarified supernatant may be discharged as an effluent following dechlorination.

Classifications:

International (IPC 8-9): B01D1/00 B01D1/18 B01D19/00 B01D19/04 B01D24/48 B01D29/11 B01D29/27 B01D29/50 B01D29/60 B01D29/90 B01D33/00 C02F1/00 C02F1/20 C02F1/46 C02F1/461 C02F1/463 C02F1/465 C02F1/52 C02F1/56 C02F1/70 C02F11/00 C02F11/12 C02F11/14 C02F9/00 C12F3/00 F26B (Advanced/Invention); C02F1/46 C02F1/52 C02F11/12 (Advanced/Non-invention); B01D29/11 B01D33/00 C02F1/463 C02F1/54 C02F11/00 (Core/Invention)

CPC: C02F9/00 C02F1/463 C02F1/4672 C02F1/70 C02F2001/007

C02F2103/002 C02F2103/005 C02F1/20 C02F1/385 C02F11/12

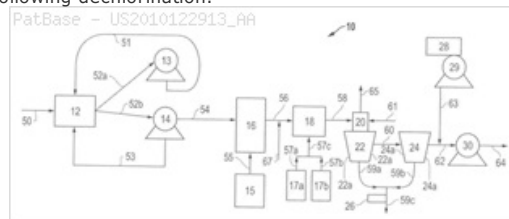
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European: B63J4/00S C02F11/14 C02F9/00 F26B1/00 F26B5/00 M02F1/00S M02F1/20 M02F1/38B M02F1/463 M02F1/467B M02F1/56 M02F1/70 M02F103/00C M02F103/00E M02F103/00S M02F11/12 M02F209/00T M02F209/11 M02F209/42 R26B200/18

US: 204/267 204/267S 205/743 205/755 205/756 205/757 210/141 210/141S 210/198.1 210/198.100S 210/710 210/732

210/732S 210/748.17 210/754

**Family:**

Publication number	Publication date	Application number	Application date
BRPI0916079 A2	20151110	BR2009PI16079	20091119
BRPI1004342 A2	20150825	BR2010PI04342	20100104
CN102215926 A	20111012	CN200980145998	20091119
CN102215926 B	20130925	CN200980145998	20091119
CN102272284 A	20111207	CN201080003842	20100104
IN04203DN2011 A	20120413	IN2011DN04203	20110603
IN04746DN2011 A	20120727	IN2011DN04746	20110621
JP2012509170 T2	20120419	JP20110537419T	20091119
JP2012513890 T2	20120621	JP20110543734T	20100104
JP5281693 B2	20130904	JP20110537419T	20091119
KR101379705 B1	20140401	KR20117014077	20091119
KR20110095379 A	20110824	KR20117014077	20091119
KR20110119686 A	20111102	KR20117018269	20100104
SG172461 A1	20110829	SG20110048642	20100104
US2010122913 AA	20100520	US20090621291	20091118
US2010170854 AA	20100708	US20090648041	20091228
US8465653 BB	20130618	US20090621291	20091118
WO10059208 A1	20100527	WO2009US06183	20091119
WO10080688 A1	20100715	WO2010US00016	20100104

Priority:

US20080199676P 20081119 US20090142794P 20090106 US20090621291 20091118
WO2009US06183 20091119 US20090648041 20091228 WO2010US00016 20100104

Probable Assignee: SEVERN TRENT DE NORA LLC

Assignee(s): (std): BARIYA RUBIN ; CASBEER DANA ; DANA CASBEER ; DAVID HILL ; SEV TRENT DE NORA L L C ; MATOUSEK RUDOLF C ; HILL DAVID ; SEV TRENT DE NORA LLC ; MATOUSEK RUDOLF ; RUBIN BARIYA

Assignee(s): SEVERN TRENT DE NORA LLC ; SEVERN TRENT DE NORA L L C

Inventor(s): (std): MATOUSEK RUDOLF C ; REEVES TOMMY ; RUBIN BARIYA ; DAVID HILL ; DANA CASBEER ; MATOUSEK RUDOLF ; HILL DAVID ; CASBEER DANA ; BARIYA RUBIN

Inventor(s): RUDOLF C MATOUSEK ; TOMMY REEVES

Agent(s): MARUYAMA TOSHIYUKI; NISHIOKA NOBUYASU; DAMBROSIO AND MENON LLP; D AMBROSIO AND MENON PLLC; DAMBROSIO AND MENON PLLC; MENON USHA

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 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: WATER SUPPLY SYSTEM FOR AN AIRCRAFT

Abstract: A water supply system, particularly for an aircraft such as a passenger aircraft, includes a disinfecting unit with an electrolysis cell connected in series with a water storage tank including a water distribution pipe system and a circulating pump. A bypass pipe with a valve permits connecting the electrolysis cell to the distribution system or bypassing the electrolysis cell. The electrolysis cell disinfects the water by anodic oxidation. A salt solution container may be connected to the electrolysis cell to enhance the anodic oxidation. The pump circulates the disinfected water through the tank and/or through the entire system, whereby the water supply is disinfected and the disinfected water in turn disinfects the entire system.

Classifications:

International (IPC 8-9): B64D11/02 B64D11/04

C02F1/467 (Advanced/Invention);

C02F1/00 C02F5/00 (Advanced/Non-invention);

B64D11/00 C02F1/461 (Core/Invention);

C02F1/00 C02F5/00 (Core/Non-invention)

International (IPC 1-7): B64D11/00 C02F1/467

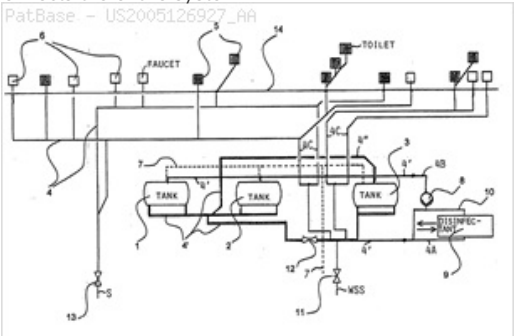
CPC: B64D11/02 B64D11/04 C02F1/008 C02F1/4674 C02F5/00

C02F2201/001 C02F2301/043

European: B64D11/02 B64D11/04 C02F1/467B2 M02F1/00T

M02F201/00A M02F301/04B M02F5/00

US: 205/743



Family:

Publication number	Publication date	Application number	Application date
DE10349158 A1	20050616	DE20031049158	20031022
US2005126927 AA	20050616	US20040971823	20041021

Priority:

DE20031049158 20031022

Probable Assignee: AIRBUS GMBH

Assignee(s): (std): AIRBUS GMBH

Assignee(s): GIENKE TORSTEN ; LINDAUER CHRISTIANE ; AIRBUS DEUTSCHLAND GMBH

Inventor(s): (std): LINDAUER CHRISTIANE ; GIENKE TORSTEN

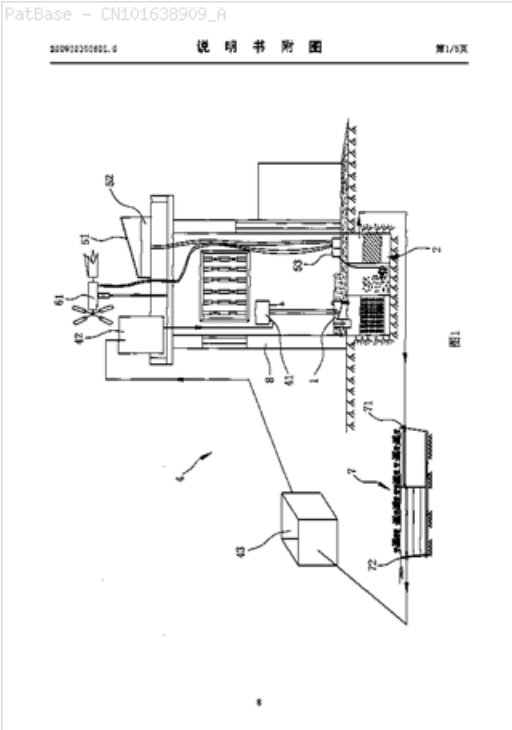
Agent(s): FASSE PATENT ATTORNEYS PA

Title: GREEN ECOTYPICAL TOILET

Abstract: The invention discloses a green ecotypical toilet which comprises an excrement and urine separation system, an excrement decomposing and treating system (2), a urine purifying system (3), an ecological wetland (7) and a clear water backflow system (4), wherein the excrement and urine separation system at least comprises an excrement and urine separator (1); an excrement outlet of the excrement andurine separator (1) is communicated with an inlet of the excrement decomposing and treating system (2), and an urine outlet of the excrement and urine separator (1) is communicated with an inlet of the urine purifying system (3); outlets of the excrement decomposing and treating system (2) and the urine purifying system (3) are both communicated with an input end (71) of the ecological wetland (7); and an output end (72) of the ecological wetland (7) is connected with the clear water backflow system (4). Compared with the prior art, the invention respectively degrades excrement and urine intoreusable clear water more sufficiently and complete, and realizes the self recycling use of the water system and the recycling use of light energy and wind energy, thereby achieving the purposes of no discharge, no pollution, clean and sanitary environment, environmental protection and energy saving.

Classifications:

International (IPC 8-9): C02F11/02 C02F9/14 E03B11/02 E03B5/00 E03D11/00 F03D9/00 H02J7/00 H02N6/00 (Advanced/Invention); C02F3/30 C02F3/32 C02F3/34 (Advanced/Non-invention); E03D11/00 (Core/Invention)
CPC: Y02B10/30 Y02B10/70
European: Y02B10/30 Y02B10/70



Family:

Publication number	Publication date	Application number	Application date
 CN101638909 A	20100203	CN200910101601	20090813

Priority:

CN200910101601 20090813

Probable Assignee: NINGBO JIANGBEI YINING ENVIRON

Assignee(s): (std): NINGBO JIANGBEI YINING ENVIRON

Assignee(s): NINGBO JIANGBEI YINING ENVIRONMENTAL PROTECTION TECHNOLOGY CO ; NINGBO JIANGBEI YINING ENVIRONMENTAL PROTECTION TECHNOLOGY CO LTD

Inventor(s): (std): BINGBING ZHANG

Inventor(s): ZHANG BINGBING

Title: PROCESS FOR ELECTROCOAGULATING WASTE FLUIDS

Abstract: An electrocoagulation process for removing organic and metal contaminants from a pressurized waste fluid is disclosed in which a clarified waste fluid is produced when the pressure is released.

Classifications:

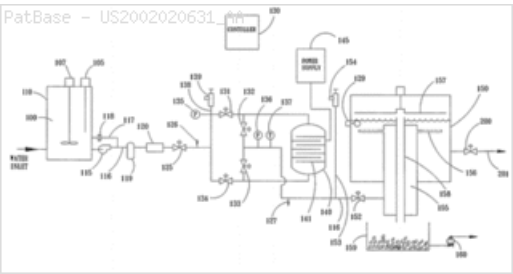
International (ipc 8-9): C02F1/463 (Advanced/Invention);
C02F1/24 C02F1/38 C02F1/44 C02F1/66 C02F1/72 C02F1/76
C02F1/78 (Advanced/Non-invention);
C02F1/463 (Core/Invention);
C02F1/24 C02F1/38 C02F1/44 C02F1/66 C02F1/72 C02F1/76
C02F1/78 (Core/Non-invention)

International (ipc 1-7): C02F1/463 C02F1/469

CPC: C02F1/24 C02F1/38 C02F1/44 C02F1/463 C02F1/66 C02F1/72
C02F1/722 C02F1/76 C02F1/78 C02F2101/20 C02F2101/30

European: C02F1/463 M02F1/24 M02F1/38 M02F1/44 M02F1/66
M02F1/72 M02F1/72C M02F1/76 M02F1/78 M02F101/20 M02F101/30

US: 204/237 204/269 204/276 204/277 204/554 204/66 204/660 204/665
204/672 204/673 205/744 205/752 205/756 205/757



Family:

Publication number	Publication date	Application number	Application date
US2002020631 AA	20020221	US20010925060	20010808
US6719894 BB	20040413	US20010925060	20010808

Priority:

US20000224615P 20000811 US20010925060 20010808

Probable Assignee: GAVREL TOM G

Assignee(s): (std): GAVREL TOM G ; GAVREL TOM GUS ; OTTO DAVID W ; VINSON IRA B

Assignee(s): ECOLOTTRON INC

Inventor(s): (std): GAVREL TOM GUS ; OTTO DAVID W ; VINSON IRA B

Title: ELECTROLYSIS METHOD, AND METHOD AND PLANT FOR THE PRETREATMENT OF RAW WATER

Abstract: The invention relates to an electrolysis method that uses iron particles and an aqueous solution containing sodium hypochlorite. The method is characterised in that said method uses direct current, the iron particles form the anode (46) and the sodium hypochlorite concentration of the aqueous solution is at least 1 g/L. The invention further relates to a method and to a plant for the pretreatment of raw water for producing water that can then be easily treated in order to produce drinkable water or a so-called technical water that cannot be consumed but that can be used for household, agricultural or industrial applications such as cleaning, washing, laundry, flushing, garden watering or irrigation.

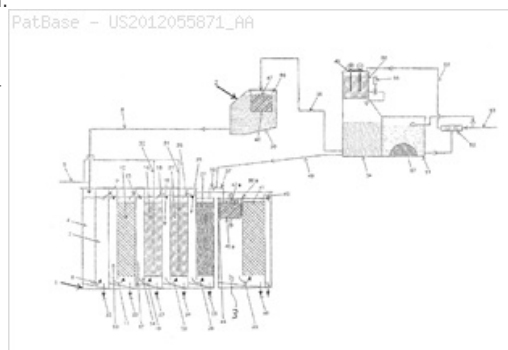
Classifications:

International (IPC 8-9): C02F C02F1/32 C02F1/40 C02F1/46 C02F1/461 C02F1/463 C02F1/467 C02F1/50 C02F1/52 C02F1/76 C02F101/10 C02F101/20 C02F3/00 C02F3/06 C02F3/10 C02F3/30 C02F9/00 C02F9/14 C25B1/26 C25B11/02 (Advanced/Invention); C02F1/40 C02F1/461 C02F1/463 C02F1/467 C02F101/10 C02F101/20 C02F3/00 C02F3/06 C02F3/30 (Advanced/Non-invention); C02F1/461 C02F1/463 C02F3/30 C02F9/00 (Core/Invention); C02F (Subclass/Invention)

CPC: C02F9/00 C02F1/40 C02F1/46114 C02F1/463 C02F3/005 C02F3/06 C02F3/302 C02F2001/46133 C02F2101/105 C02F2101/20 Y02W10/12 Y02W10/15 C02F1/4674

European: C02F1/467B2 C02F9/00 M02F1/40 M02F1/461B2B M02F1/461B2J M02F1/463 M02F1/467B2 M02F101/10C M02F101/20 M02F3/00E M02F3/06 M02F3/30D

US: 1/1 205/348 205/348S 210/150 210/150S 210/630 210/631 210/631S 210/748.2 210/748.200S



Family:

Publication number	Publication date	Application number	Application date
AU2010223782 AA	20100916	AU20100223782	20100304
AU2010223782 BB	20151203	AU20100223782	20100304
CA2754083 AA	20100916	CA20102754083	20100304
CA2754083 C	20181023	CA20102754083	20100304
DE602009018503 D1	20131031	DE200960018503T	20090309
DE602010033031 D1	20160616	DE201060033031T	20100304
EP2230211 A1	20100922	EP20090356017	20090309
EP2230211 B1	20130904	EP20090356017	20090309
EP2406187 A2	20120118	EP20100711819	20100304
EP2406187 B1	20160504	EP20100711819	20100304
ES2437765 T3	20140114	ES20090356017T	20090309
IN01766MN2011 A	20120127	IN2011MN01766	20110824
IN293112 B	20180223	IN2011MN01766	20110824
JP2012519588 T2	20120830	JP20110553241T	20100304
JP5411302 B2	20140212	JP20110553241T	20100304
RU2011135008 A	20130420	RU20110135008	20100304
RU2531828 C2	20141027	RU20110135008	20100304
US2012055871 AA	20120308	US20100203997	20100304
US9181119 BB	20151110	US20100203997	20100304
WO10102418 A2	20100916	WO2010CH00056	20100304
WO10102418 A3	20110217	WO2010CH00056	20100304
ZA201106063 A	20120926	ZA20110006063	20110818

Priority:

EP20090356017 20090309 EP20100711819 20100304 WO2010CH00056 20100304

Probable Assignee: F TEC SYSTEMS SA

Assignee(s): (std): F TEC SYSTEMS S A ; F TEC SYSTEMS SA ; FRESNEL JEAN MARIE

Inventor(s): (std): FRESNEL JEAN MARIE ; FRESNEL ZHAN MARI ; JEAN MARIE FRESNEL

Agent(s): GRIFFITH HACK; NORTON ROSE OR SENCRL SRL LLP; NORTON ROSE FULBRIGHT CANADA LLP SENCRL SRL; RPK PATENTANWALTE REINHARDT POHLMANN U KAUFMANN PARTNERSCHAFT MBB; STONA DANIEL; TRIGO JOSE RAMON; STURM AND FIX LLP

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

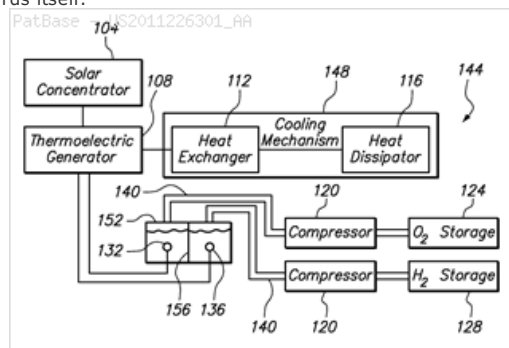
Abstract: A thermoelectric collector generates electricity from solar energy which may be stored or used for various applications. In general, the collector utilizes a high density thermopile to generate electricity. The thermoelectric collector may be configured to heat the high density thermopile at one end and cool another end to establish a thermal gradient. This temperature gradient generates electricity. The high density thermopile provides numerous advantages including a generally solid structure which lends itself to the creation of a thermal gradient, and ruggedness for outdoor applications. In addition, the stacked arrangement of the high density thermopile's components allows for high efficiency as well as easy maintenance and adjustability of electrical output capacity. Further, the high density thermopile may be shaped in various ways due to its novel configuration. In one embodiment, the high density thermopile may form a solar collector to direct heat towards itself.

International (IPC 8-9): C25B1/02 C25B15/02 C25B9/00 H01L35/00
H01M8/06 (Advanced/Invention)

CPC: H01M8/0656 C01B13/0207 C25B1/02 C25B15/00 H01M8/04201
H01M8/04626 H01M8/04753 Y02P20/133 Y02P20/134 F24S23/71
H01L35/30

European: C01B13/02B2 C25B1/02 C25B15/00 H01L35/30 H01M8/04C6
H01M8/04H4K6F H01M8/04H6D2 H01M8/06B6 R24J2/12 Y02E60/50

US: 136/206 204/228.1 204/228.100S 204/228.3 204/228.300S
204/230.2 204/230.200S 205/343 205/343S 429/422 429/422P



Publication number	Publication date	Application number	Application date
US2011226301 AA	20110922	US20100728923	20100322
US2011229780 AA	20110922	US20110007486	20110114

US20100728923 20100322 US20110007486 20110114

Probable Assignee: KERSHAW DAN

Assignee(s): (std): KERSHAW DAN

Inventor(s): (std): KERSHAW DAN

Title: BATTERIES UTILIZING A SOLID POLYMERIC ELECTROLYTE

Abstract: A solid state battery utilizing an anionic ion exchange membrane solid electrolyte. The solid electrolyte is used to replace the separator and the liquid electrolyte typically utilized in batteries. The solid electrolyte may be a polymeric material allowing the transfer of hydroxyl ions therethrough.

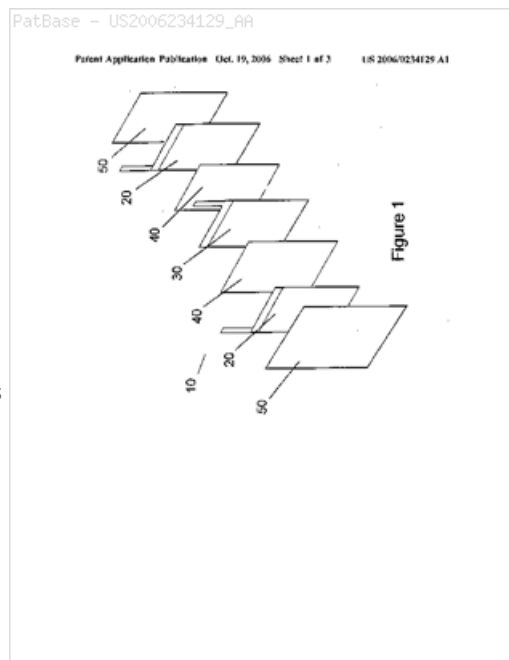
Classifications:

International (IPC 8-9): H01L31/00 H01M4/48 H01L31/0256 H01M10/052 H01M10/0525 H01M10/0562 H01M10/0565 H01M10/36 H01M10/40 H01M16/00 H01M4/131 H01M4/24 H01M4/50 H01M4/505 H01M4/52 H01M4/525 H01M4/58 (Advanced/Invention)

CPC: H02S20/25 H02S40/38 H01M10/347 H01L31/03762 H01M4/36 H01M4/48 H01M4/50 H01M4/52 H01M4/5825 H01M4/60 H01M10/36 H01M10/465 H01M16/00 H01M16/003 H01M10/345 H01M4/131 H01M4/242 H01M4/32 H01M4/383 H01M4/505 H01M4/525 H01M10/052 H01M10/0525 H01M10/0562 H01M10/0565 H01M10/26 H01M10/30 H01M2300/0082 H01M4/38

European: H01L31/058C H01M10/052 H01M10/0525 H01M10/0562 H01M10/0565 H01M10/26 H01M10/30 H01M10/34D H01M10/34D2 H01M10/36 H01M10/46B H01M16/00 H01M16/00F H01M4/131 H01M4/24B H01M4/32 H01M4/36 H01M4/38B H01M4/48 H01M4/50 H01M4/505 H01M4/52 H01M4/525 H01M4/58D H01M4/60 T01L31/0376B T01L31/048B2 T01L31/0687 T01M300/00B8C Y02B10/12 Y02B10/20 Y02B10/70 Y02E10/50 Y02E60/12B Y02E60/12D

US: 136/261 136/261S 429/218.1 429/218.100S 429/218.2 429/218.200S 429/221 429/221S 429/223 429/223S 429/224 429/224S 429/231.5 429/231.500S 429/231.6 429/231.600S 429/304 429/304P 429/316 429/316S 429/9 429/9P



Family:

Publication number	Publication date	Application number	Application date
TW200731603 A	20070816	TW20070100748	20070109
US2006234129 AA	20061019	US20050220937	20050907
US2007054158 AA	20070308	US20060328531	20060110
WO06113044 A2	20061026	WO2006US10737	20060324
WO06113044 A3	20071025	WO2006US10737	20060324
WO07081462 A2	20070719	WO2006US46642	20061206
WO07081462 A3	20080417	WO2006US46642	20061206

Priority:

US20050671289P 20050414 US20050220937 20050907 US20060328531 20060110

Probable Assignee: CHEVRON TECHNOLOGY VENTURES LLC

Assignee(s): (std): ALADJOV BOYKO ; OVONIC BATTERY CO ; OVSHINSKY STANFORD R ; VIJAN MEERA

Assignee(s): OVONIC BATTERY CO INC ; OVONIC BATTERY COMPANY INC ; CHEVRON TECHNOLOGY VENTURES LLC

Inventor(s): (std): ALADJOV BOYKO ; OVSHINSKY STANFORD R ; VIJAN MEERA

Inventor(s): OVSHINSKY STANFORD

Agent(s): ENERGY CONVERSION DEVICES INC

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 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 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 YU ZA ZM ZW

Title: Apparatus for biological waste water treatment (Machine translation)

Abstract: Source: RU71334U

Machine translation: (Claim 1) Device for biological treatment of waste water containing tank, inlet and outlet and the electrodes, wherein the electrodes are in the form of vertically alternately installed on the tank bottom plate of the anode and cathode, and the cathode plate on each device installed in a dome with a tube for collection of hydrogen from the tank. [IMAGE]

Classifications:

International (IPC 8-9): C02F1/46 C02F3/02 (Advanced/Invention);

C02F1/46 C02F3/02 (Core/Invention)

CPC: Y02W10/15

Family:

Publication number	Publication date	Application number	Application date
 RU71334 U1	20080310	RU20060140026U	20061113

Priority:

RU20060140026U 20061113

Title: WASTEWATER TREATMENT ONBOARD SMALL MARINE VESSELS

Abstract: Methods, apparatus and systems for treating wastewater onboard small marine vessels. A pre-determined volume of wastewater generated onboard the vessel is mixed with a larger volume of seawater. This mixture is disinfected and subjected to further oxidation. The excess oxidants are neutralized and the treated effluent is discharged overboard the vessel.

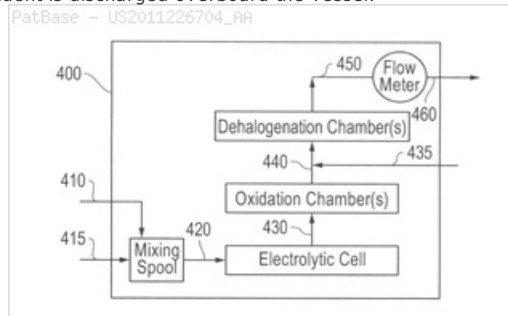
Classifications:

International (IPC 8-9): C02F9/12 (Advanced/Invention)

CPC: C02F1/4674 C02F1/70 C02F2001/46128 C02F2103/008
C02F2201/4613 C02F2201/46145 C02F2209/005 C02F2209/40
C02F2301/024 C02F2303/185

European: C02F1/467B2 M02F1/461B2H M02F1/70 M02F103/00S
M02F201/461B6B2 M02F201/461B6D M02F209/00T M02F209/40
M02F301/02D M02F303/18B

US: 204/268 204/269 210/142 210/192 210/243 210/748.01 210/748.17
210/748.170P 210/757 210/758 588/316 588/406



Family:

Publication number	Publication date	Application number	Application date
■ US2011226704 AA	20110922	US20100727957	20100319
■ US8668832 BB	20140311	US20100727957	20100319

Priority:

US20100727957 20100319

Probable Assignee: SEVERN TRENT DE NORA LLC

Assignee(s): (std): BARIYA RUBIN ; CASBEER DANA ; HILL DAVID ; MATOUSEK RUDOLF ; SEV TRENT DE NORA LLC

Assignee(s): SEVERN TRENT DE NORA LLC

Inventor(s): (std): BARIYA RUBIN ; CASBEER DANA ; HILL DAVID ; MATOUSEK RUDOLF

Agent(s): USHA; DAMBROSIO AND MENON PLLC

Title: MAINTENANCE SELF-DIAGNOSIS AND GUIDE FOR A SELF-CONTAINED WASTEWATER TREATMENT SYSTEM

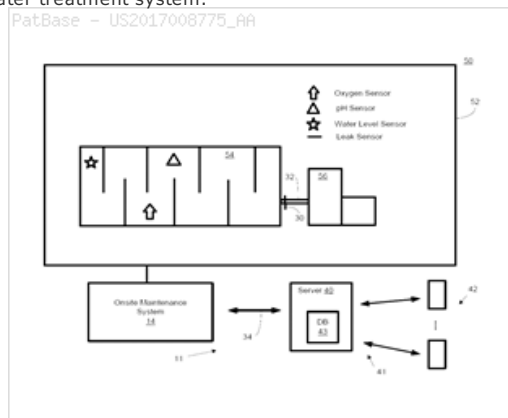
Abstract: A self-diagnostic maintenance system for wastewater treatment employs unique environmental sensor configurations to link operational states of a water treatment system with unique failure modes of the system. Upon detection of failure modes, the maintenance system alerts users and operators via a short messaging service (SMS) of the problem, and can display step-by-step pictorial repair instructions for the operator to replace broken or malfunctioning parts, without the operator needing to diagnosis the problem or understand the detailed workings of the wastewater treatment system.

Classifications:

International (IPC 8-9): C02F1/00 C02F1/46 C02F1/469 C02F3/00 C02F3/28 G05D7/06 G06F15/00 (Advanced/Invention)

CPC: C02F1/008 C02F2209/11 C02F2209/06 C02F2209/008 C02F2209/22 C02F2209/02 C02F1/46 C02F3/006 C02F3/28 C02F2103/005 C02F2209/006 C02F2209/04

US: 700/282



Family:

Publication number	Publication date	Application number	Application date
■ CN107848838 A	20180327	CN201680039510	20160707
■ EP3319910 A1	20180516	EP20160821996	20160707
■ EP3319910 A4	20181226	EP20160821996	20160707
■ IN201817002535 A	20180427	IN201817002535	20180122
■ US2017008775 AA	20170112	US20160204829	20160707
■ WO17007959 A1	20170112	WO2016US41378	20160707

Priority:

US20150190173P 20150708 US20160204829 20160707 WO2016US41378 20160707

Probable Assignee: CALIFORNIA INST OF TECHNOLOGY

Assignee(s): (std): CALIFORNIA INST OF TECHN

Assignee(s): CALIFORNIA INST OF TECHNOLOGY

Inventor(s): (std): CID CLEMENT A ; FINKE CODY E ; HANAN ANASTASIA K ; HOFFMANN MICHAEL R ; PINKSTON DONALD HARVEY ; PINKSTON III DONALD HARVEY ; VANIER MICHAEL CHRISTOPHER

Agent(s): MURGITROYD AND CO; BAKER JOSEPH R

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: APPARATUS AND PROCESS FOR TREATMENT OF WATER

Abstract: The invention relates to the treatment of water, including for example treatment in connection with hydrocarbon production operations. Silica in water produces undesirable scaling in processing equipment, which causes excess energy usage and maintenance problems. Electrocoagulation (EC) at relatively high water temperature, followed by any of membrane distillation or forward osmosis (FO), may be combined with a subsequent process of ceramic ultra-filtration (UF filtration) employed to treat water. Water to be treated may be produced water that has been pumped from a subterranean reservoir. The treated water may be employed to generate steam. The treatment units (e.g., EC, forward osmosis, UF filtration, etc) can be configured into one system as an on-site installation or a mobile unit for on-site or off-site water treatment.

Classifications:

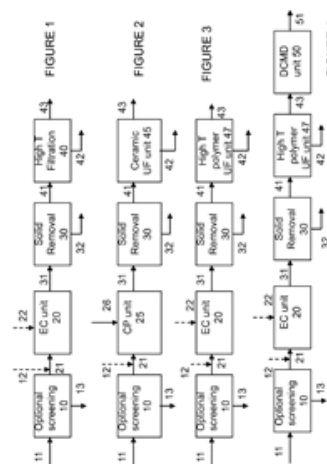
International (IPC 8-9): B01D21/02 B01D61/00 B01D61/14 B01D61/36 B01D61/58 B01D63/02 B01D71/02 B23P17/04 C02F1/04 C02F1/24 C02F1/34 C02F1/38 C02F1/44 C02F1/463 C02F1/52 C02F1/60 C02F1/66 C02F5/02 C02F9/00 C02F9/02 C02F9/06 C02F9/12 (Advanced/Invention); B01D61/14 C02F1/44 (Advanced/Non-invention)

CPC: B01D61/364 B01D61/002 B01D61/145 B01D61/58 B01D63/02 B01D71/024 C02F1/444 C02F1/445 C02F1/447 C02F1/463 C02F9/00 C02F2209/06 C02F2209/10 C02F2209/20 Y10T29/494

US: 1/1 205/751 210/241 210/242.1 210/295 210/639 210/640 210/644 210/650 210/702 210/703 210/738 29/890.09

PatBase - US2013075332_AA

Patent Application Publication Mar. 28, 2013 Sheet 1 of 2 US 2013/0075332 A1



Family:

Publication number	Publication date	Application number	Application date
CA2849290 AA	20140319	CA20122849290	20120921
US2013075332 AA	20130328	US20120624853	20120921
US2013075333 AA	20130328	US20120624830	20120921
US2013075334 AA	20130328	US20120624845	20120921
US2013075335 AA	20130328	US20120624846	20120921
US9138688 BB	20150922	US20120624846	20120921
US9180411 BB	20151110	US20120624853	20120921
WO13044168 A1	20130328	WO2012US56751	20120921

Priority:

US20110537661P	20110922	US20110537666P	20110922	US20110537682P	20110922
US20120624830	20120921	US20120624846	20120921	US20120624845	20120921
US20120624853	20120921	WO2012US56751	20120921		

Probable Assignee: CHEVRON USA INC

Assignee(s): (std): CHEVRON USA INC ; PAULEY JAMES CRAIG ; VU DE QUANG ; PRUET RANDALL B ; PRAKASH PRAKHAR ; VU DE

Assignee(s): CHEVRON U S A INC

Inventor(s): (std): PAULEY JAMES CRAIG ; PRAKASH PRAKHAR ; PRUET RANDALL B ; VU DE ; VU DE QUANG

Agent(s): SIM AND MCBURNEY; AIRD AND BERLIS IP PARTNERSHIP LTD; JOHN E; VICK JOHN E ET AL

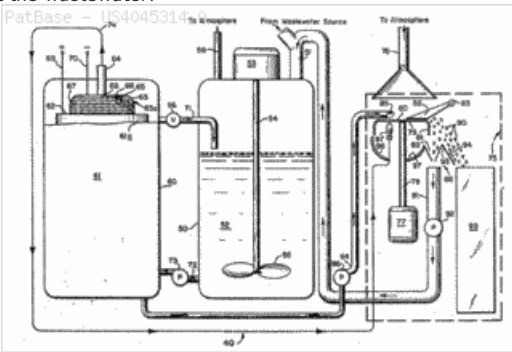
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA 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: Waste evaporation disposal system

Abstract: A non-polluting wastewater evaporation disposal method and system wherein hydrogen gas is electrolytically produced from the wastewater, collected and used as a source of fuel to evaporate the wastewater to thereby convert the wastewater to a disinfected non-polluting sterile solid residue and water vapor. A halogen having an atomic number of between 16 and 54 may also be electrolytically produced from the wastewater and used to disinfect the wastewater.

Classifications:

International (IPC 8-9): C02F1/04 C02F1/467 C02F1/76 C02F9/00 (Advanced/Invention)
International (IPC 1-7): C02C3/00 C02C5/12
CPC: C02F1/048 C02F1/4674 C02F1/763 C02F2103/005
European: C02F1/04Z C02F1/467B2 C02F1/76E M02F103/00E
US: 110/346 204/151 204/237 204/260 205/520 205/746 210/748 210/748.17 210/748.2 210/754



Family:

Publication number	Publication date	Application number	Application date
US4045314 A	19770830	US19750581851	19750529

Priority:

US19750581851 19750529

Probable Assignee: MONOGRAM IND INC

Assignee(s): (std): MONOGRAM IND INC

Assignee(s): MONOGRAM INDUSTRIES INC ; CHASE MANHATTAN BANK ; CHASE MANHATTAN BANK (NATIONAL ASSOCIATION) ; HELLER FINANCIAL INC ; MAG AEROSPACE IND ; MAG AEROSPACE IND INC ; MAG AEROSPACE IND INC C O VESTAR CAPITAL PARTNERS

Inventor(s): (std): ROD ROBERT L ; PENICK JR WALTER L ; HELLER HENRY B

Title: METHOD FOR OXIDATIVE TREATMENT OF AQUEOUS LIQUIDS

Abstract: The invention relates to a method for oxidative treatment of aqueous liquids by means of oxidants. In this method, the aqueous liquid is passed through an electrolysis reactor, in which highly aggressive oxidants (OH^- , O_3 , H_2O_2) are produced in the electrochemical decomposition of the water. Black and/or grey water is used as the aqueous liquid, which is liberated from coarse particles and mechanically broken up thereafter, before it is passed into the electrolysis reactor. Gaseous portions are released and inorganic residual components are filtered out. The remaining residual liquid, which consists substantially of water, can be introduced into a fresh, wash- and/or rinse water system.(only Figure)

Classifications:

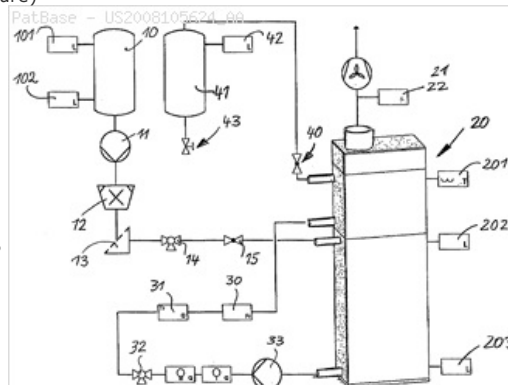
International (IPC 8-9): B01D35/06 C02F1/46 C02F1/461 C02F1/467 C02F1/72 C02F103/00 (Advanced/Invention); C02F1/461 C02F1/72 C02F103/00 C25B11/06 (Advanced/Non-invention); B01D35/06 C02F1/46 C02F1/461 C02F1/72 (Core/Invention); C25B11/00 (Core/Non-invention)

International (IPC 1-7): C02F1/461 C02F1/72

CPC: Y02A20/212 C02F1/4672 C02F1/722 C02F2001/46138 C02F2001/46142 C02F2001/46185 C02F2103/002 C02F2103/005 C02F2201/001 C02F2201/009 C02F2201/46115 C02F2209/02 C02F2209/42 C02F2301/043

European: C02F1/467B M02F1/461B2J2 M02F1/461B2J2B M02F1/461B6B M02F1/72C M02F103/00C M02F103/00E M02F201/00A M02F201/00P M02F201/461B4 M02F209/02 M02F209/42 M02F301/04B

US: 210/748 210/748.17 210/748.170P 210/748.19 210/748.190S

**Family:**

Publication number	Publication date	Application number	Application date
AT430719 E	20090515	AT20060776419T	20060725
CA2586490 AA	20070504	CA20062586490	20060725
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US2008105624 AA	20080508	US20060667764	20060725
WO07022844 A1	20070301	WO2006EP07362	20060725

Priority:

DE200510040367 20050826 WO2006EP07362 20060725

Probable Assignee: EVAC GMBH

Assignee(s): (std): EHFAC GMBKH ; EVAC GMBH ; WOERMCKE HANS ; WORMCKE HANS

Inventor(s): (std): VERMKE KHANS ; WOERMCKE HANS ; WORMCKE HANS ; HANS WORMCKE

Agent(s): FETHERSTONHAUGH AND CO; GLAESER JOACHIM; MEREK BLACKMON AND VOORHEES LLC

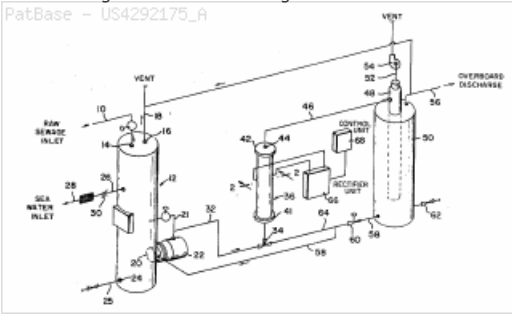
Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ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

Title: Compact electrocatalytic sewage treatment unit for maritime use

Abstract: A compact, relatively small unit for treatment of wastewater for discharge into maritime waters is disclosed. The wastewater is received in a surge or retention tank and is delivered by gravity flow or pumped to a macerator for comminution of the solids content of the wastewater. Prior to entering the macerator, salt water on a controlled flow basis is added to the wastewater in sufficient amounts to insure a high enough salt content for use as the electrolyte in an electrocatalytic cell. From the macerator the wastewater to be treated is directed into a vertically oriented, elongated, electrocatalytic cell having a plurality of parallel, closely spaced electrodes therein positioned parallel to the flow of wastewater therethrough. The wastewater is directed through the electrocatalytic unit. The end electrodes of the spaced electrode plates are connected to a source of direct current sufficient to generate chlorine, oxygen and other treating chemicals in situ. The gases generated in the cell, entrained with the liquid, flow out of the electrocatalytic cell with the liquid into the standpipe of an effluent tank where a negative pressure separates the entrained gases from the liquid and vents them to the atmosphere. The heavier solids remaining in the discharged treated liquid are allowed to settle in the bottom of the effluent tank and the remaining effluent is discharged.

Classifications:

International (IPC 8-9): C02F1/467 C02F9/00 (Advanced/Invention)
International (IPC 1-7): C02F1/46 C02F1/76
CPC: C02F1/4674 C02F2103/002 C02F2103/005 C02F2201/001
European: C02F1/467B2 M02F103/00C M02F103/00E M02F201/00A
US: 204/237 210/192 210/218 210/754



Family:

Publication number	Publication date	Application number	Application date
US4292175 A	19810929	US19790063581	19790803

Priority:

US19790063581 19790803

Probable Assignee: EXCEL TECHNOLOGIES INT CORP

Assignee(s): (std): OMNIPURE INC

Assignee(s): OMNIPURE INC HOUSTON TEXAS A CORP OF ; SIGMA CHAPMAN INC ; SIGMA CHAPMAN INC A CORP OF TEX ; EXCEL TECHNOLOGIES INT ; EXCEL TECHNOLOGIES INT CORP

Inventor(s): (std): KRAUSE WILLIAM A ; LANGELEND LEONARD E

Title: SELF-CONTAINED RECIRCULATING TOILET SYSTEM

Abstract: This disclosure relates to a self-contained recirculating toilet system which includes a toilet bowl having a built-in flush pump and a waste-discharge macerator pump with the discharge of the macerator pump being connected to a holding tank unit for delivering raw waste into a raw-waste compartment thereof. The raw waste is periodically pumped from the raw-waste compartment to a combined sterilization and flocculation cell unit after which the treated liquid is returned to the holding-tank unit and after solids float over weir by virtue of gaseous suspension from the treatment in the cells and aided by the outward flow through a discharge slit the remaining clarified and sterilized liquid is directed into a flush-water compartment of the holding-tank unit for use in the next flushing of the toilet. The system provides for repeated use of the same water for multiple toilet flushing.

Classifications:

International (IPC 8-9): B60R15/04 B63B17/00 B63B29/14 B63B29/16 C02F9/00 E03D11/11 E03D5/016 (Advanced/Invention);

B63B17/00 B63B29/00 C02F9/00 E03D11/02 E03D5/00 (Core/Invention)

International (IPC 1-7): B60R15/04 B63B29/14 B63B29/16 B63J4/00

B63J5/00 C02B1/82 C02C5/12 C02F1/00 E03D5/00 E03D5/016 E03F5/18

CPC: B63B29/16 B63J4/004 C02F2103/005 C02F2201/001 E03D5/016

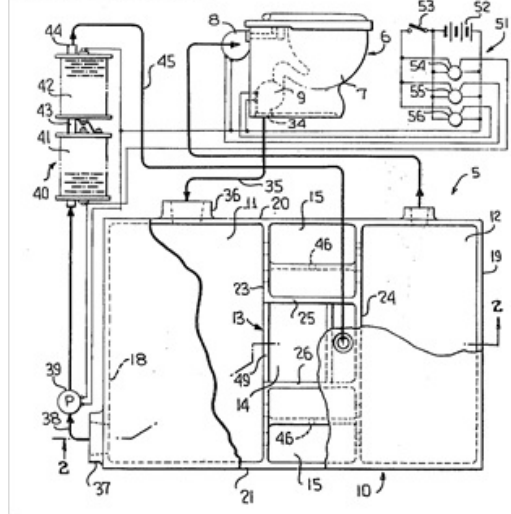
E03D9/10

European: M02F103/00E M02F201/00A

US: 210/167.3 210/167.31 210/748 210/748.2 210/766 210/804 4/317

4/319 4/320 4/321

PatBase - US4115876_A

**Family:**

Publication number	Publication date	Application number	Application date
AU197838206 A1	19800124	AU19780038206	19780720
CA1067251 A1	19791204	CA19780307570	19780717
DE2833933 A1	19800221	DE19782833933	19780802
FR2431577 A1	19800215	FR19780021270	19780718
FR2431577 B1	19831230	FR19780021270	19780718
GB2027090 A1	19800213	GB19780032005	19780802
GB2027090 B2	19820811	GB19780032005	19780802
IT1097929 A	19850831	IT19780026439	19780803
IT7826439 A0	19780803	IT19780026439	19780803
NL7807648 A	19800121	NL19780007648	19780717
US4115876 A	19780926	US19760744873	19761124

Priority:

US19760744873 19761124 CA19780307570 19780717 NL19780007648 19780717
FR19780021270 19780718 AU19780038206 19780720 DE19782833933 19780802
GB19780032005 19780802 IT19780026439 19780803

Probable Assignee: COLE RESDEVEL CORP

Assignee(s): (std): COLE RESDEVEL CORP

Assignee(s): COLE RESDEVEL CORP TE TRENTON NEW JERSEY VER ST V ; COLE RESDEVEL CORP TE TRENTON NEW JERSEY VER ST V AM ; PREIS WILLIAM R ; COLE WILLIAM ; COLE ENVIRONMENTAL IND ; COLE ENVIRONMENTAL IND INC A DE CORP

Inventor(s): (std): COLE JR WILLIAM ; PREIS WILLIAM R ; PREIS WILLIAM ; COLE W ; COLE JUN WILLIAM

Inventor(s): JUN ; COLE WILLIAM

Title: SELF-CONTAINED FLOW THROUGH SEWAGE WASTE DISPOSAL SYSTEM

Abstract: A self-contained sewage waste disposal system including a housing structure and a toilet bowl adapted to receive human waste and fluid for diluting the waste, transporting the waste and rinsing the bowl. A removable filter cassette is in the housing in communication with the toilet bowl. Structure is provided for flushing the bowl and dumping the contents into the filter cassette and for subsequent refilling of the bowl. A filter is in the cassette for separating the particles of solid material from the fluid received from the bowl. The solid material is stored in the cassette in a compact manner for subsequent disposal upon removal of the cassette. Pumps and interconnected conduits are in the housing to transport fluid directly from an external source to fill the bowl after a flush, to transport and recirculate filtered fluid through the system for further waste disposal treatment, and to direct the effluent fluid from the system thereafter. Controls are provided to pass the fluid through the system and facilitate the collection and disposal of sewage waste within the system in a predetermined sequence.

Classifications:

International (IPC 8-9): E03D5/016 (Advanced/Invention);
E03D5/00 (Core/Invention)

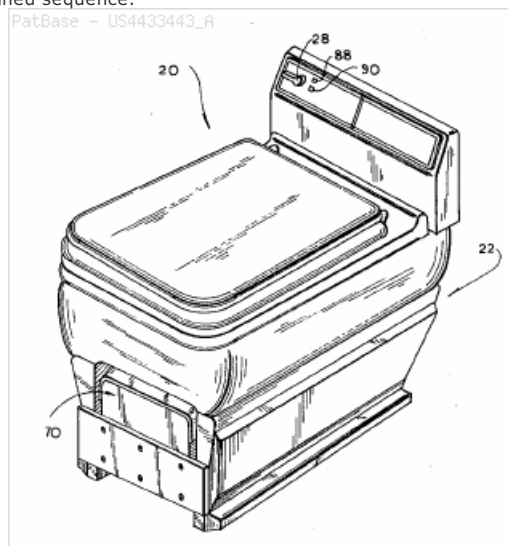
International (IPC 1-7): C02F9/00

CPC: Y10S4/11 E03D5/016

European: E03D5/016

US: 204/149 204/152 204/240 210/173 210/748 210/748.2 210/805
210/806 4/317 4/318 4/319 4/321 4/DIG.11

Locarno class: 43/17

**Family:**

Publication number	Publication date	Application number	Application date
US4433443 A	19840228	US19810320599	19811112
US4565636 A	19860121	US19830550476	19831109

Priority:

US19810320599 19811112 US19830550476 19831109

Probable Assignee: AMERICAN STANDARD INC

Assignee(s): (std): AMERICAN STANDARD INC

Assignee(s): AMERICAN STANDARD INC A CORP OF DE ; BANKERS TRUST CO ; CHEMICAL BANK AS COLLATERAL AGENT ; CHEMICAL BANK COLLATERAL AGENT AS

Inventor(s): (std): WILCOCKSON BRIAN ; PROIOS STEVE ; NICKERSON EARL W ; DEGRAW KENNETH J ; BOGOSSIAN ARMEN ; BOCCHINI WILLIAM R