

1) Family number: 15848694 (US2006186041A)

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Title: FLUID BED EXPANSION AND FLUIDISATION

Abstract: Source: US2006186041A Method and apparatus (8) in which a biomass is carried on a substrate which is fluidised. The fluidised substrate has below it a layer of distributor particles through which the fluidising medium passes prior to contact with the fluidised substrate and biomass associated therewith. The effect of the distributor layer is that the particles damp out excessive turbulence in the fluidising medium thus preventing undue turbulence of the medium within the fluidised layer. This has the advantage of controlling, to some extent, the thickness of the biofilm, which may be carried by the fluidised substrate particles. The particles may be recycled (1, 2, 5) through the distributor layer where the action of the distributor particles serve to strip excess biofilm from the substrate particles which latter are then returned to the fluidised bed.

Classifications:

International (IPC 8-9): B01J8/18 B01J8/20 B01J8/24 C02F1/00 C02F3/00 C02F3/06 C02F3/08 C02F3/10 C02F3/12 C02F3/30 C02F3/34 (Advanced/Invention);

B01J8/18 B01J8/20 B01J8/24 C02F3/00 C02F3/06 C02F3/08 C02F3/10 C02F3/12 C02F3/30 C02F3/34 (Core/Invention)

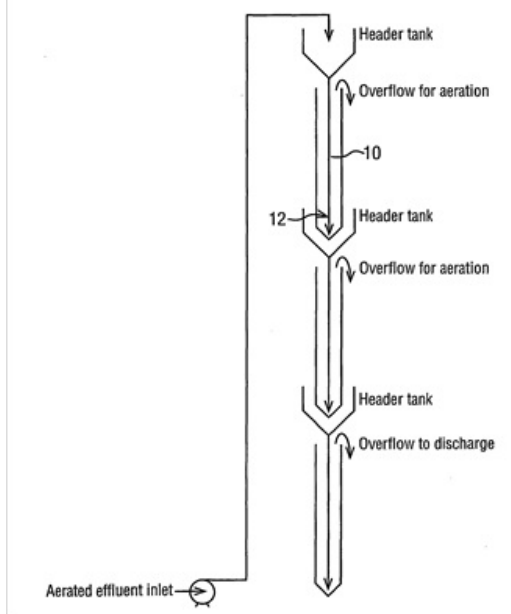
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CPC: Y10S210/903 C02F3/085 B01J8/1809 B01J8/1818 B01J8/1872 B01J8/20 B01J2208/0069 C02F3/301 C02F3/302 C02F3/34 Y02W10/15

European: B01J8/18D B01J8/18G B01J8/18L B01J8/20 B01J8/24L C02F3/08D C02F3/30B C02F3/30D C02F3/34 L01J208/00C20G

US: 210/150 210/151 210/194 210/605 210/612 210/612S 210/617 210/618 210/621 210/630 210/903 210/96.1 422/105 422/105S 422/112 422/112S 422/140 422/140S 422/68.1 422/68.100S

PatBase - US2006186041_AA



Family:

Publication number	Publication date	Application number	Application date
AU2002334149 AA	20030428	AU20020334149	20021009
AU2002334149 AB	20050602	AU20020334149	20021009
AU2002334149 BB	20071122	AU20020334149	20021009
AU2008200662 AA	20080306	AU20080200662	20080212
AU2008200662 BB	20101118	AU20080200662	20080212
CA2500843 AA	20050330	CA20022500843	20021009
CA2500843 C	20130702	CA20022500843	20021009
DE60245594 D1	20131121	DE20026045594	20021009
EP1444167 A1	20040811	EP20020801393	20021009
EP1444167 B1	20130925	EP20020801393	20021009
EP2322485 A1	20110518	EP20110000023	20021009
ES2439567 T3	20140123	ES20020801393T	20021009
GB200124433 A0	20011205	GB20010024433	20011011
JP2005505418 T2	20050224	JP20030536157T	20021009
NZ532855 A	20060224	NZ20020532855	20021009
US2006186041 AA	20060824	US20020492495	20021009
US2008093293 AA	20080424	US20070957931	20071217
US7309433 BB	20071218	US20020492495	20021009
US7708886 BB	20100504	US20070957931	20071217
WO03033411 A1	20030424	WO2002GB04640	20021009

Priority:

AU20020334149 20021009	AU20080200662 20080212	US20040492495 20040924
EP20020801393 20021009	US20040492495 20040929	GB20010024433 20011011
US20070957931 20071217	WO2002GB04640 20021009	

Probable Assignee: ADVANCED BIOPROCESS DEVELOPMENT LIMITED

Assignee(s): (std): ADVANCED BIOPROCESS DEVELOPMENT LTD ; DEMPSEY MICHAEL J ; UNIV MANCHESTER METROPOLITAN ; DEMPSEY MICHAEL JOHN ; ADVANCED BIOPROCESS DEV LTD

Assignee(s): ADVANCED BIOPROCESS DEVELOPMENT LIMITED ; THE MANCHESTER METROPOLITAN UNIVERSITY ; MANCHESTER METROPOLITAN THE UNIVERSITY ; MANCHESTER METROPOLITAN UNIV

Inventor(s): (std): DEMPSEY MICHAEL JOHN ; MICHAEL JOHN DEMPSEY ; DEMPSEY MICHAEL J

Inventor(s): DEMPSEY MICHAEL

Agent(s): FREEHILLS PATENT ATTORNEYS; HERBERT SMITH FREEHILLS; FPA PATENT ATTORNEYS PTY LTD;

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 US UZ VC VN YU ZA ZM ZW

2) Family number: 49239023 (US2011168616A)

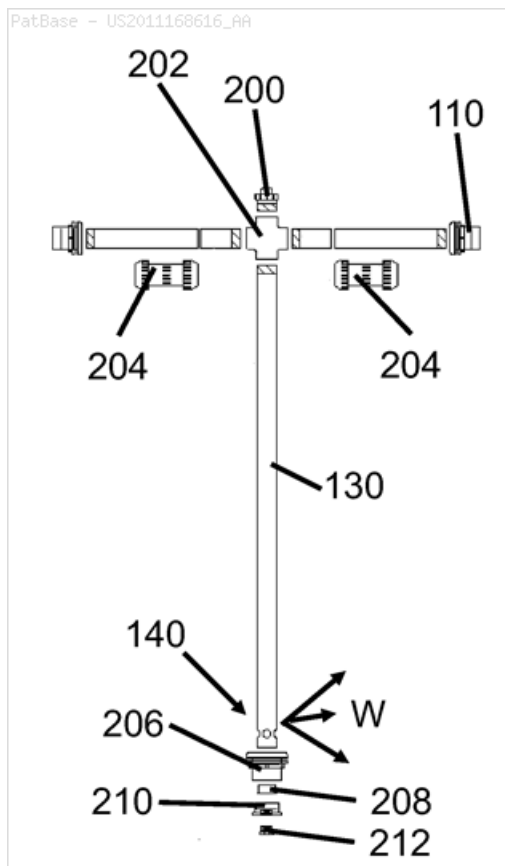
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Title: SYSTEM AND PROCESS FOR REMOVING NITROGEN COMPOUNDS AND ODORS FROM WASTEWATER AND WASTEWATER TREATMENT SYSTEM

Abstract: Source: US2011168616A A wastewater treatment system includes independent wastewater treatment facilities. Each of the facilities has a number of wastewater treatment subsystems. A wastewater collection subsystem holds wastewater to be treated. A pump subsystem moves wastewater from a wastewater collector to a filtration subsystem having a bioreacting filter. The filter has a sump and a fluidized-bed filter therein and supports the filter upright. The filter has an upwardly expanding, hollow, conical filter body with filter media. A monitoring subsystem measures wastewater process parameters. Control devices receive control commands and, dependent upon the command received, alter parameters of the wastewater treatment subsystems. A communication device connects the wastewater treatment subsystems and the control devices and sends information corresponding to the wastewater process parameters measured by the monitors, receives control messages corresponding to the control commands, and transmits control commands the control devices to, thereby, alter a wastewater process parameter.

Classifications:

International (IPC 8-9): B01D17/028 B01D17/12 B01D21/01
B01D24/36 B01D29/11 B01D35/26 C02F1/00 C02F1/52 C02F1/68
C02F1/76 C02F3/00 C02F3/02 C02F3/08 C02F3/12 C02F3/14
C02F3/20 C02F3/28 C02F3/30 C02F9/00 C02F9/02 C02F9/14
G05B15/00 (Advanced/Invention);
B01F5/00 C02F1/00 C02F101/16 C02F103/20 C02F3/08
C02F3/28 (Advanced/Non-invention)
CPC: C02F2103/005 C02F2103/32 C02F2209/08 C02F2209/22
C02F3/2826 C02F2103/327 C02F2209/005 C02F2209/02
C02F2209/06 C02F2209/10 C02F2209/40 C02F2209/42 B01F5/0057
C02F3/006 C02F3/20 Y02W10/12 C02F1/001 C02F3/08 C02F3/302
C02F2101/16 C02F2101/163 C02F2101/166 C02F2103/20
C02F2209/006 C02F2209/008 C02F2303/02 Y02W10/15 C02F3/1247
C02F3/301 C02F3/085 C02F3/30 C02F9/00 C02F3/305 C02F3/14
C02F1/5281 C02F1/68 B01D21/01 B01D29/117 C02F1/766
C02F3/2833 C02F3/303
European: C02F1/00T C02F3/00R M02F101/16 M02F101/16B
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M02F303/02
US: 1/1 210/141 210/143 210/151 210/199 210/202 210/257.1
210/258 210/259 210/522 210/614 210/617 210/85 210/85S 210/86
210/86P 210/87 210/87S 210/919 210/96.1 700/273 702/50



Family:

Publication number	Publication date	Application number	Application date
US2011168616 AA	20110714	US20100793144	20100603
US2012091045 AA	20120419	US20110240608	20110922
US2013193038 AA	20130801	US20130748131	20130123
US2013240420 AA	20130919	US20130830480	20130314
US2014034558 AA	20140206	US20130051876	20131011
US2016115059 AA	20160428	US20150986008	20151231
US2016362321 AA	20161215	US20160228845	20160804
US8388833 BB	20130305	US20110240608	20110922
US8585892 BB	20131119	US20100793144	20100603
US9272931 BB	20160301	US20130830480	20130314
US9440870 BB	20160913	US20130748131	20130123
WO11088105 A1	20110721	WO2011US20967	20110112

Priority:

US20100294521P 20100113	US20100385603P 20100923	US20100793144 20100603
US20110240608 20110922	US20100793444 20100603	US20130051876 20131011
WO2011US20967 20110112	US20130748131 20130123	US20130830480 20130314
US20130751041P 20130110	US20150986008 20151231	US20160228845 20160804

Probable Assignee: BIOFILTER SYSTEMS LLC

Assignee(s): (std): BIOFILTER SYSTEMS LLC ; ROBERTSON MARK B ; COX JOHN D ; O KEEFE DAVID ; COX JOHN ; WHITE DANIEL T

Inventor(s): (std): COX JOHN ; WHITE DANIEL T ; ROBERTSON MARK B ; O KEEFE DAVID ; COX JOHN D

Inventor(s): O'KEEFE DAVID
Agent(s): MAYBACK AND HOFFMAN P A; GREGORY L; MAYBACK AND HOFFMAN PA; MAYBACK GREGORY L ET AL
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT 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

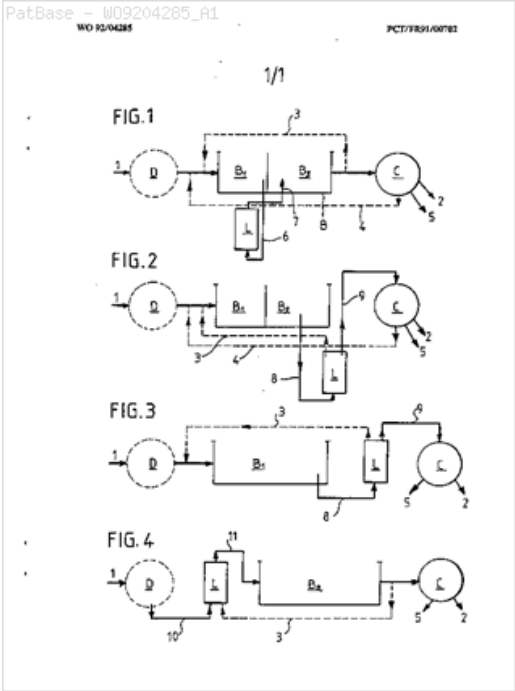
3) Family number: 9038551 (WO9204285A1) © PatBase

Title: BIOLOGICAL TREATMENT METHOD AND APPARATUS INCLUDING DENITRIFICATION FOR WASTE WATER

Abstract: In a known process in which water to be treated is held in an activated sludge tank before being clarified, a method is described whereby at least a portion (8) of the mixed liquor in said tank (B2) is passed to a separate fluidized bed (L) provided with solid expanding granulates before being returned to the clarification phase (C). Several embodiments are described.

Classifications:

International (IPC 8-9): C02F3/12 C02F3/28
C02F3/30 (Advanced/Invention);
C02F3/12 C02F3/28 C02F3/30 (Core/Invention)
International (IPC 1-7): C02F3/12 C02F3/12000 C02F3/30
C02F3/30000
CPC: Y02W10/15 C02F3/085 C02F3/2806 C02F3/302
European: C02F3/08D C02F3/28C C02F3/30D



Family:

Publication number	Publication date	Application number	Application date
CA2070245 AA	19931203	CA19922070245	19920602
DE69101911 D1	19940609	DE19916001911	19910903
DE69101911 T2	19941222	DE19916001911T	19910903
DK0498875 T3	19950327	DK19910916319T	19910903
EP0498875 A1	19920819	EP19910916319	19910903
EP0498875 B1	19940504	EP19910916319	19910903
ES2055996 T3	19940901	ES19910916319T	19910903
FR2667860 A1	19920417	FR19900010960	19900904
FR2667860 B1	19921127	FR19900010960	19900904
NO303171 B1	19980608	NO19920001714	19920430
NO921714 A	19920703	NO19920001714	19920430
NO921714 A0	19920430	NO19920001714	19920430
WO9204285 A1	19920319	WO1991FR00702	19910903

Priority:

CA19922070245 19920602 FR19900010960 19900904 WO1991FR00702 19910903

Probable Assignee: COULOM THIERRY

Assignee(s): (std): EAU DE NANCY NAN C I E CENTRE ; NANCIE CENTRE INT EA ; EAU NAN C I E CENTRE INT DE L ; OMNIUM TRAITEMENT VALORISA ; NANCY EAU ; COULOM THIERRY ; EAU DE NANCY NAN C I E VANDOEUVRE ; NANCIE CENTRE INTERNATIONAL EA ; LEAU DE NANCY NAN C I E CENTRE

Assignee(s): OTV OMNIUM DE TRAITEMENTS ET DE VALORISATION ; NANCIE CENTRE INT EAU ; OTV OMNIUM DE TRAITEMENTS ET DE VALORISATION COURBEVOIE ; OTV OMNIUM DE TRAITEMENTS ET DE VALORISATION COURBEVOIE ; SIBONY JACQUES ; COULOM THIERRY NANCY ; OTV OMNIUM DE TRAITEMENTS ET DE VALORISATION COU ; COULOM THIERRY NANCY FR ; OMNIUM TRAITEMENTS VALORISATION ; NANCIE CENTRE INTERNATIONAL EAU ; CENTRE INT DE L EAU DE NANCY NAN C I E ; CENTRE INT DE L EAU DE NANCY NANCIE ; CENTRE INT DE L EAU NANCIE ; CENTRE INT DE L EAU NAN CIE ; CENTRE INT DE L EAU DE NANCY NANCIE VANDOEUVRE LES NANCY ; CENTRE INT DE L EAU DE NANCY NANCIE VANDOEUVRE LES NANCY FR ; CENTRE INT DE LEAU DE NANCY NAN C I E ; CENTRE INTERNATIONAL DE L'EAU DE NANCY (NAN C... ; CENTRE INTERNATIONAL DE L'EAU NAN C I E ; CENTRE INTERNATIONAL DE L'EAU DE NANCY NAN C I E ; CENTRE INTERNATIONAL DE LEAU DE NANCY NAN C I E ; CENTRE INTERNATIONAL DE L'EAU DE NANCY NAN C I E VANDOEUVRE LES NANCY ; CENTRE INTERNATIONAL DE L'EAU DE NANCY NAN C I E VANDOEUVRE LES NANCY FR ; CENTRE INT DE LEAU DE NANCY NANCIE

Inventor(s): (std): COULOM THIERRY ; SIBONY JACQUES ; THIERRY COULOM ; JACQUES SIBONY

Inventor(s): SIBONY JACQUES F 75018 PARIS ; SIBONY JACQUES F 75018 PARIS FR ; COULOM THIERRY F 54000 NANCY ; COULOM THIERRY F 54000 NANCY FR

Agent(s): GOUDREAU GAGE DUBUC ; CABINET PATRICE VIDON
Designated states: AT BE CH DE DK ES FR GB GR IT LI LU NL NO SE US

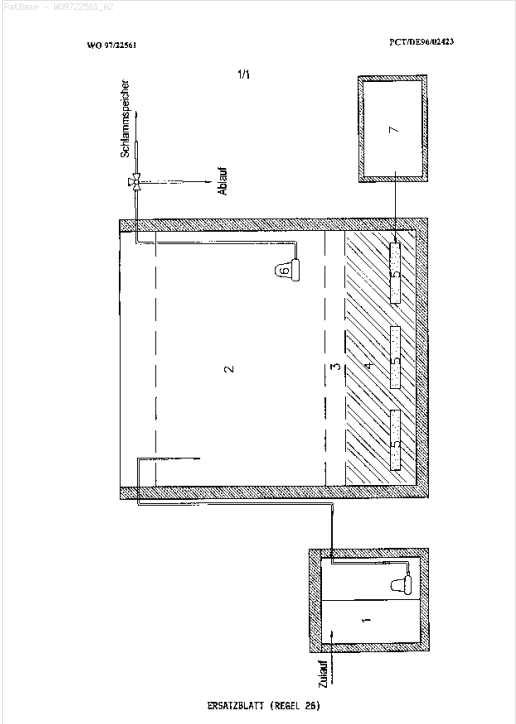
4) Family number: 30512044 (WO9722561A2) PatBase

Title: SINGLE-TANK SEWAGE TREATMENT PLANT

Abstract: The invention proposes a single-tank sewage treatment plant making it possible to combine activated sludge and bio-film biology. Here, some of the organisms needed for sewage purification are placed on breeding bodies. The bodies (4) have a specific weight of over 1.0 g/cm<3>, preferably 1.1 to 1.3 g/cm<3>. They are caused to eddy by the introduction of air (5). After sedimentation, the bodies form a precisely bounded biologically solid bed. Owing to the high sedimentation rate of the breeding bodies on which organisms are grown, it is possible, after the ventilation has been switched off, to convert the aerobic fluidised bed into an anoxic solid/fluid bed. The introduction of air (5) can also take place in the reactor so that regions with differing oxygen supplies can be formed. It is thus possible for aerobic processes with nitrification and anoxic processes with denitrification to take place alongside one another.

Classifications:

International (IPC 8-9): B01D21/00 C02F3/06 C02F3/08 C02F3/12 C02F3/30 (Advanced/Invention); B01D21/00 C02F3/06 C02F3/08 C02F3/12 C02F3/30 (Core/Invention)
International (IPC 1-7): B01D21/02 B01D21/24 C02F3/00 C02F3/02 C02F3/08 C02F3/10 C02F3/12 C02F3/20 C02F3/30
CPC: Y02W10/15 C02F3/085 B01D21/0018 B01D21/02 C02F3/06 C02F3/301 C02F3/302
European: B01D21/00J B01D21/02 C02F3/06 C02F3/08D C02F3/30B C02F3/30D



Family:

Publication number	Publication date	Application number	Application date
AT181043 E	19990615	AT19960946200T	19961211
CN1105085 C	20030409	CN19961099010	19961211
CN1204304 A	19990106	CN19961099010	19961211
CZ286981 B6	20000816	CZ19980001715	19961211
CZ9801715 A3	19981014	CZ19980001715	19961211
DE19621447 A1	19970619	DE19961021447	19960529
DE19621447 C2	19980122	DE19961021447	19960529
DE29519886 U1	19960201	DE19952019886U	19951215
DK0866774 T3	19991213	DK19960946200T	19961211
EP0866774 A2	19980930	EP19960946200	19961211
EP0866774 B1	19990609	EP19960946200	19961211
ES2135271 T3	19991016	ES19960946200T	19961211
GR3031157 T3	19991231	GR19990402246T	19990907
PL184833 B1	20021231	PL19960327308	19961211
PL327308 A1	19981207	PL19960327308	19961211
RU2156745 C2	20000927	RU19980113306	19961211
RU98113306 A	20000520	RU19980113306	19980715
SK282083 B6	20011008	SK19980000786	19961211
SK78698 A3	19990211	SK19980000786	19961211
TR9800842 T2	19981221	TR19980000842T	19961211
WO9722561 A2	19970626	WO1996DE02423	19961211
WO9722561 A3	19971023	WO1996DE02423	19961211

Priority:

DE19952019886U 19951215 DE19961021447 19960529 WO1996DE02423 19961211

Probable Assignee: EVU GMBH

Assignee(s): (std): EH F U EHNTVIKLUNG FON UMVEL T ; EVU GMBH ; EVU ENTWICKLUNG VON UMWELTTECHNIK GMBH

Assignee(s): EVU ENTWICKLUNG VON UMWELTTECHNIK GMBH 01277 DRESDEN DE ; EVUENTWICKLUNG VON UMWELTTECHNIK GMBH ; EH F U EHNTVIKLUNG FON UMVEL TTEKHNIK GMBKH ; EH.F.U. EHNTVIKLUNG FON UMVELTTEKHNIK GMBKH ; EHFU EHNTVIKLUNG FON UMVEL TTEKHNIK GMBKH ; E V U ENTWICKLUNG VON UMWELTTECHNIK GMBH ; E V U ENTWICKLUNG VON UMWELTTECHNIK GMBH 01277 DRE ; E V U ENTWICKLUNG VON UMWELTTECHNIK GMBH 01277 DRESDEN DE

Inventor(s): (std): FOL KMAR POJKERT ; KOCH R ; KOCH REINHARD ; PEUKERT V ; PEUKERT VOLKMAR ; PEUKERT VOLKMAR DR ; R KOCH ; RAJNKHARD KOKH ; V PENKERT ; V PEUKERT ; PENKERT V

Inventor(s): FOL'KMAR POJKERT ; VOLKMAR PEUKERT ; REINHARD KOCH ; PEUKERT VOLKMAR DR 01307 DRESDEN DE ; KOCH REINHARD 01609 GROEDITZ DE

Designated states: AT BE CH CN CZ DE DK ES FI FR GB GR IE IT LI LU MC NL PL PT RU SE SK TR

5) Family number: 9303755 (US5582733A)

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Title: METHOD AND INSTALLATION FOR PURIFYING WATER USING VARIABLY AGITATED DENITRIFYING PHYSICAL-CHEMICAL SLUDGE BED

Abstract: Source: US5582733A To purify untreated water, for example waste water, containing organic pollution, materials in suspension and nitrogen-containing pollution, reagents are added under conditions adapted to coagulate all of the materials in suspension, including colloidal materials, to form granular physical/chemical floc. Diluting water is added, preferably after the reagents, in a flowrate ratio of at least 2/1. The dilute flocculated water is caused to flow through a bed of sludge in the form of such dense and granular floc and denitrifying bacteria. The bed is subject to turbulent but intermittent agitation. A denitrified effluent is recovered. This denitrified effluent is caused to flow through a biological filter or preferably through a fluidized bed containing nitrifying bacteria and into which oxygen or air is injected. A clarified effluent is obtained, some of which is recycled as the diluting water.

Classifications:

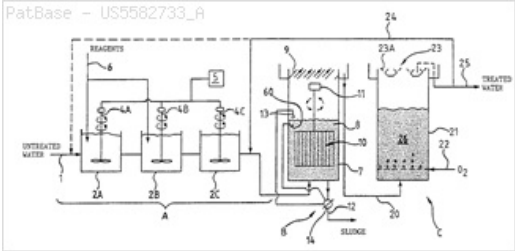
International (IPC 8-9): B01D21/01 C02F1/52 C02F1/56 C02F1/74 C02F3/02 C02F3/06 C02F3/10 C02F3/12 C02F3/30 C02F3/34 (Advanced/Invention); B01D21/01 C02F1/52 C02F1/54 C02F3/06 C02F3/10 C02F3/12 C02F3/30 C02F3/34 (Core/Invention)

International (IPC 1-7): B01D21/01 C02F1/52 C02F1/56 C02F1/74 C02F3/02 C02F3/06 C02F3/10 C02F3/28 C02F3/30 C02F3/34 C02F9/00

CPC: Y10S210/903 Y02W10/15 C02F3/085 C02F3/10 C02F3/1215 C02F3/1284 C02F3/302 C02F2303/24

European: C02F3/08D C02F3/10 C02F3/12A4 C02F3/12V2 C02F3/30D M02F303/24

US: 210/151 210/195.1 210/219 210/605 210/617 210/622 210/903



Family:

Publication number	Publication date	Application number	Application date
CA2127857 AA	19950113	CA19942127857	19940712
DE69409719 D1	19980528	DE19946009719	19940706
DE69409719 T2	19990114	DE19946009719T	19940706
EP0634369 A1	19950118	EP19940401558	19940706
EP0634369 B1	19980422	EP19940401558	19940706
FR2707621 A1	19950120	FR19930008565	19930712
FR2707621 B1	19951020	FR19930008565	19930712
JP7241568 A2	19950919	JP19940160285	19940712
NO942600 A	19950113	NO19940002600	19940711
NO942600 A0	19940711	NO19940002600	19940711
TR28069 A	19951219	TR19940000629	19940707
US5582733 A	19961210	US19940264792	19940623

Priority:

CA19942127857 19940712 FR19930008565 19930712

Probable Assignee: OMNIUM DE TRAITEMENTS ET DE VALORISATION OTV

Assignee(s): (std): OMNIUM TRAITEMENT VALORISA ; OMUNIUMU DE TORETOMON E DE BAR

Assignee(s): OTV ; OMUNIUMU DE TORETOMON E DE BARORIZASHION O T BE ; OMNIUM DE TRAITEMENTS ET DE VALORISATION OTV ; OMNIUM DE TRAITEMENTS ET DE VALORISATION OTV S A ; OMNIUM DE TRAITEMENTS ET DE VALORISATION OTV S A COURBEVOIE FR ; OMNIUM DE TRAITEMENTS ET DE VALORISATION OTV SA ; ROGALLA FRANK ; REY PHILIPPE ; DESBOS GILBERT ; OMNIUM DE TRAITEMENTS ET DE VALORISATION ; OMNIUM DE TRAITEMENTS ET DE VALORISATION (OTV) ; OMNIUM DE TRAITEMENTS ET DE VALORISATION LE DOUBLO

Inventor(s): (std): DESBOS GILBERT ; FRANK ROGALLA ; PHILIPPE REY ; REY PHILIPPE ; GILBERT DESBOS ; ROGALLA FRANK

Inventor(s): ROGALLA FRANK F 75018 PARIS FR ; GIRUBEERU DEBO ; REY PHILIPPE F 77500 CHELLES FR ; FUIRITSUPU REI ; FURANKU ROGAARA ; DESBOS GILBERT F 78600 MAISONS LAFFITTE FR

Agent(s): SMART AND BIGGAR

Designated states: CH DE DK ES FR GB IT LI NL

6) Family number: 12347124 (WO9741216A1)

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Title: MICROORGANISM CARRIER AND PROCESS FOR PRODUCTION THEREOF

Abstract: A porous microorganism carrier which is excellent in abrasion resistance, weather (light) resistance, microbial decomposition resistance, fluidity, and microbial affinity. It is a spongy granular polyvinyl formal whose size ranges from 1 to 20 mm in a wet state or a porous polyvinyl acetal having an apparent specific gravity of 1.0 to 1.2 as measured in a wet state, a porosity of 20 to 300 μm , a degree of acetalization of 30 to 85 mole percent, and a pore size of 20 to 300 μm . Because of the above excellent properties, this microorganism carrier can be suitably used in various bioreactors such as sewage disposal equipment of fluidized bed type.

Classifications:

International (IPC 8-9): C02F3/08 C02F3/10 C02F3/12 C12M1/40 C12N11/04 C12N11/08 (Advanced/Invention); C02F3/00 C12N11/08 (Advanced/Non-invention); C02F3/08 C02F3/10 C02F3/12 C12M1/40 C12N11/00 (Core/Invention)

International (IPC 1-7): C02F3/00 C02F3/08 C02F3/10 C12M1/40 C12N11/08

CPC: Y02W10/15 C02F3/085 C02F3/10 C02F3/108 C12N11/04 C12N11/08

European: C02F3/08D C02F3/10 C02F3/10D C12N11/04 C12N11/08

Family:

Publication number	Publication date	Application number	Application date
CN1216581 A	19990512	CN19971094018	19970424
EP0897000 A1	19990217	EP19970919668	19970424
EP0897000 A4	20020410	EP19970919668	19970424
JP10052268 A2	19980224	JP19970120198	19970422
KR20000065098 A	20001106	KR19980708689	19970424
WO9741216 A1	19971106	WO1997JP01420	19970424

Priority:

JP19960135828 19960501 JP19970120198 19970422 WO1997JP01420 19970424

Probable Assignee: AION CO

Assignee(s): (std): KANEBO LTD ; MURAYAMA OSAMU ; SASAKI YASUOKI ; SEKIGAWA TETSUO ; AION CO LTD ; INOUE JUN

Assignee(s): KANEBO LIMITED ; AION CO

Inventor(s): (std): INOUE JUN ; MURAYAMA OSAMU ; SASAKI YASUOKI ; SEKIGAWA TETSUO ; SEKIKAWA TETSUO ; YASUOKI SASAKI ; OSAMU MURAYAMA

Designated states: AT BE CH CN DE DK ES FI FR GB GR IE IT KR LU MC NL PT SE SG US

7) Family number: 55372218 (US2013337518A)

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Title: NOVEL BIOCATALYST COMPOSITIONS AND PROCESSES FOR USE

Abstract: Source: US2013337518A The microorganism-containing biocatalysts disclosed have a large population of the microorganisms irreversibly retained in the interior of the biocatalysts. The biocatalysts possess a surprisingly stable population of microorganisms and have an essential absence of debris generation from metabolic activity of the microorganisms. The biocatalysts are composed of highly hydrophilic polymer and have an internal, open, porous structure that promotes community phenotypic changes.

Classifications:

International (IPC 8-9): C02F1/00 C02F101/10 C02F101/12 C02F101/16 C02F3/00 C02F3/02 C02F3/10 C02F3/28 C02F3/30 C02F3/34 C12M1/00 C12M1/08 C12M1/12 C12M1/34 C12M1/40 C12N1/00 C12N1/20 C12N11/00 C12N11/02 C12N11/04 C12N11/08 C12N11/10 C12N11/14 C12P1/00 C12P1/04 C12P3/00 C12P39/00 C12P5/02 C12P7/02 C12P7/04 C12P7/06 C12P7/16 C12P7/18 C12P7/26 C12P7/28 C12P7/40 C12P7/46 C12P7/54 C12P7/56 C12P7/62 C12P7/64 H01M4/86 H01M4/88 H01M4/90 H01M8/16 (Advanced/Invention);

C02F101/10 C02F101/12 C02F101/16 C02F101/20 C02F101/34 C02F3/06 C02F3/08 C02F3/34 C12N1/00 C12P3/00 C12P39/00 C12P7/08 C12P7/64 (Advanced/Non-invention)

CPC: C02F2003/001 C02F2101/38 C02F2103/36 C02F2305/06 C02F2101/006 C02F2101/103 C02F2101/106 C02F2101/108 C02F2101/206 C02F2101/22 C12M25/14 C02F3/105 C02F2103/10 C02F2203/008 C02F3/342 C02F2101/003 C02F3/06 C02F3/085 C02F3/28 C02F3/307 C02F3/308 C02F2101/12 C02F2101/163 C02F2101/20 C02F2101/34 C02F2301/08 C02F2301/106 C02F2303/02 C02F2303/20 C12N11/10 C12P3/00 C12P5/023 C12P7/06 C12P7/08 C12P7/6463 C12P39/00 Y02E50/343 Y02W10/12 Y02W10/15 C12P7/065 C02F3/34 C12N11/04 C12N11/14 C12P7/04 C12P7/16 C12P7/18 C12P7/28 C12P7/46 C12P7/54 C12P7/56 C12P7/62 Y02E50/17 Y02W10/37 C02F3/348 C02F2101/105 C02F2101/16 Y02E50/10 C02F2101/166 C02F3/108 C12N11/08 C12M23/34 C12M25/20 C12M27/24 C12M29/18 C12N11/00 C12P7/649 C12P7/26

US: 1/1 210/615 210/616 210/620 435/132 435/139 435/140 435/141 435/145 435/148 435/150 435/157 435/160 435/161 435/163 435/167 435/168 435/170 435/171 435/182 435/266 435/289.1 435/42

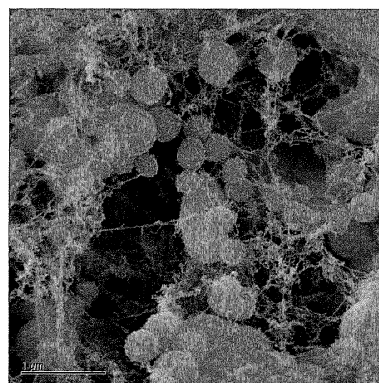


FIGURE 1

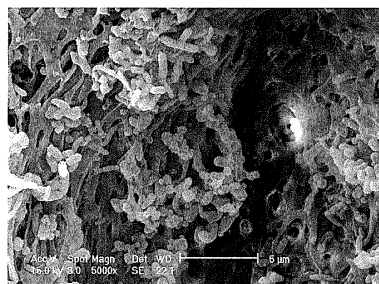


FIGURE 2

Family:

Publication number	Publication date	Application number	Application date
AU2013274000 AA	20131219	AU20130274000	20130614
AU2013274000 AH	20150219	AU20130274000	20130614
AU2013274014 AA	20131219	AU20130274014	20130614
CA2876477 AA	20141211	CA20132876477	20130614
CA2876478 AA	20141211	CA20132876478	20130614
CA2876484 AA	20141211	CA20132876484	20130614
CN104619652 A	20150513	CN201380043413	20130614
CN104619652 B	20170613	CN201380043413	20130614
EP2861538 A2	20150422	EP20130804663	20130614
EP2861538 A4	20151230	EP20130804663	20130614
EP2861539 A2	20150422	EP20130804982	20130614
EP2861539 A4	20160323	EP20130804982	20130614
EP2861710 A1	20150422	EP20130803990	20130614
EP2861710 A4	20160406	EP20130803990	20130614
JP2015521473 T2	20150730	JP20150517470T	20130614
JP2015525078 T2	20150903	JP20150517467T	20130614
JP2015527056 T2	20150917	JP20150517473T	20130614
SG11201408356V A1	20150330	SG20141108356	20130614
US2013337518 AA	20131219	US20130918868	20130614

US2014106420 AA	20140417	US20130106659	20131213
US2014106425 AA	20140417	US20130106669	20131213
US2015125901 AA	20150507	US20130407799	20130614
US2015151997 AA	20150604	US20130407882	20130614
US2015167024 AA	20150618	US20130407777	20130614
US2015191715 AA	20150709	US20130407893	20130614
US2016167993 AA	20160616	US20150935164	20151106
US2017088860 AA	20170330	US20160378997	20161214
US9212358 BB	20151215	US20130918868	20130614
US9255281 BB	20160209	US20130106659	20131213
US9334507 BB	20160510	US20130106669	20131213
US9551013 BB	20170124	US20130407777	20130614
WO13188803 A2	20131219	WO2013US45951	20130614
WO13188803 A3	20140213	WO2013US45951	20130614
WO13188844 A2	20131219	WO2013US46018	20130614
WO13188844 A3	20140220	WO2013US46018	20130614
WO13188852 A1	20131219	WO2013US46029	20130614
WO13188858 A2	20131219	WO2013US46037	20130614
WO13188858 A3	20140320	WO2013US46037	20130614

Priority:

US20120689921P 20120615	US20120689922P 20120615	US20120689929P 20120615
US20120689925P 20120615	US20120689924P 20120615	US20120689923P 20120615
US20120689943P 20120615	US20120689940P 20120615	US20120689939P 20120615
US20120689935P 20120615	US20120689933P 20120615	US20120689932P 20120615
US20120689930P 20120615	US20120689941P 20120615	US20130918868 20130614
US20130852451P 20130315	US20130851467P 20130308	US20130850631P 20130220
US20130849725P 20130201	US20120689953P 20120615	US20120689945P 20120615
US20130106659 20131213	US20130106669 20131213	US20130918838 20130614
US20120689944P 20120615	US20120689948P 20120615	US20130407799 20130614
US20130407882 20130614	US20130407777 20130614	US20130407893 20130614
WO2013US46029 20130614	WO2013US46018 20130614	WO2013US46037 20130614
WO2013US45951 20130614	US20150935164 20151106	US20160378997 20161214
US20140407777 20141212		

Probable Assignee: MICROVI BIOTECH INC

Assignee(s): (std): MICROVI BIOTECH INC ; MICROVI BIOTECH INC

Assignee(s): DORRI MOHAMMAD ALI ; DORRI NOWKOORANI FARHAD ; RAZAVI AMEEN NMN ; RAZAVI SHIRAZI FATEMEH ; MICROVI BIOTECH INC26229 EDEN LANDING ROADHAYWARDCA94587US ; RAZAVI AMEEN

Inventor(s): (std): DORRI MOHAMMAD ALI ; DORRI NOWKOORANI FARHAD ; RAZAVI AMEEN NMN ; RAZAVI AMEEN ; RAZAVI AMEEN NMN ; RAZAVI SHIRAZI FATEMEH

Inventor(s): RAZAVI SHIRAZI FATEMEHUS ; RAZAVI AMEEN NMNUS ; DORRI NOWKOORANI FARHADUS ; DORRI MOHAMMAD ALIUS

Agent(s): AJ PARK; ROBIC; JANSEN CORNELIS MARINUS; DENTONS US LLP; BRUEHS MARTIN A

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 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 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

8) Family number: 9535617 (WO9219548A1)

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Title: BIOLOGICAL NITRIFICATION/DENITRIFICATION WATER TREATMENT PLANT AND METHOD

Abstract: A biological nitrification/denitrification water treatment plant comprises at least one nitrification reactor and one denitrification reactor, at least one of which is a fluidized bed type, a recycling system for each reactor and a system providing communication between the two reactors, each of these systems incorporating a flow monitoring device and the normal means for supplying and discharging effluent and gases, and normal process control means. In each of the reactors mounted in double cascade configuration, the biomass is fixed on a fluidized bed consisting of porous particles with a density of 1700 to 3000 kg/m³, a total specific porosity of 300 to 700 mm³/g, and an average particle size of 200 to 600 µm for the nitrification reactor and of 400 to 1000 µm for the denitrification reactor. The invention also discloses a biological nitrification/denitrification water treatment method.

Classifications:

International (IPC 8-9): C02F3/06 C02F3/10 C02F3/12 C02F3/28

C02F3/30 (Advanced/Invention);

C02F3/06 C02F3/10 C02F3/12 C02F3/28 C02F3/30 (Core/Invention)

International (IPC 1-7): B01J8/20 B01J8/24 B01J8/24000 C02F3/10

C02F3/30 C02F3/30000 C02F3/33

CPC: Y02W10/15 C02F3/085 C02F3/06 C02F3/10 C02F3/2806

C02F3/302

European: C02F3/06 C02F3/08D C02F3/10 C02F3/28C C02F3/30D

1/1

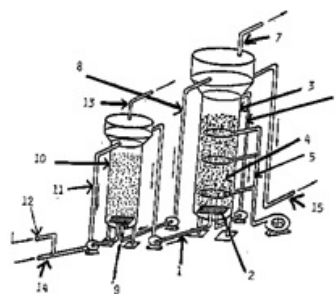


FIGURE 1

Family:

Publication number	Publication date	Application number	Application date
EP0583349 A1	19940223	EP19920910931	19920430
FR2676044 A1	19921106	FR19910005317	19910430
FR2676044 B1	19940225	FR19910005317	19910430
WO9219548 A1	19921112	WO1992FR00391	19920430

Priority:

FR19910005317 19910430 WO1992FR00391 19920430

Probable Assignee: BERTIN AND CIE**Assignee(s):** (std): BERTIN AND CIE**Assignee(s):** BERTIN ET CIE**Inventor(s):** (std): NICOLAS MILANDE ; MILANDE NICOLAS**Agent(s):** CABINET BLOCH AND BONNETAT**Designated states:** AT BE CH DE DK ES FR GB GR IT LI LU MC NL SE**9) Family number: 10645280 (EP0683138A2)**

© PatBase

Title: PROCESS FOR MAKING PHOTOPROCESSING WASTE SOLUTION HARMLESS.

Abstract: Source: EP0683138A2 A process for making a waste solution containing organic aminocarboxylic acids harmless is described, which comprises biologically treating the waste solution containing aminocarboxylic acids followed by another biological treatment in the presence of activated carbon. A process for making a photoprocessing waste solution harmless is also described, which comprises a step of a first biological treatment of a waste solution containing organic aminocarboxylic acids, the following step of a second biological treatment in the presence of activated carbon and a step of biological nitrification and denitrification.

Classifications:

International (IPC 8-9): C02F1/28 C02F3/02 C02F3/08 C02F3/10 C02F3/12 C02F3/30 C02F3/34 (Advanced/Invention); C02F1/28 C02F3/02 C02F3/08 C02F3/10 C02F3/12 C02F3/30 C02F3/34 (Core/Invention)

International (IPC 1-7): C02F1/28 C02F1/58 C02F3/00 C02F3/02 C02F3/08 C02F3/10 C02F3/12 C02F3/30 C02F3/34

CPC: Y02W10/15 C02F3/30 C02F1/283 C02F3/085 C02F3/121

European: C02F1/28D C02F3/12A2 C02F3/30 M02F3/08D

Family:

Publication number	Publication date	Application number	Application date
DE69520519 D1	20010510	DE19956020519	19950517
DE69520519 T2	20010809	DE19956020519T	19950517
EP0683138 A2	19951122	EP19950107548	19950517
EP0683138 A3	19980701	EP19950107548	19950517
EP0683138 B1	20010404	EP19950107548	19950517
JP8033894 A2	19960206	JP19950117234	19950516

Priority:

JP19940104063 19940518 JP19950117234 19950516

Probable Assignee: FUJII PHOTO FILM CO LTD**Assignee(s):** (std): FUJII PHOTO FILM CO LTD**Assignee(s):** FUJII PHOTO FILM CO**Inventor(s):** (std): HARA NAKO ; SUZUKI SEIJI**Designated states:** DE FR GB NL

Title: NITRIFICATION PROCESS

Abstract: Source: US6572773B The present invention concerns the field of nitrification of fluids, and particularly relates to the treatment of aqueous fluids to oxidize ammonia and nitrites to produce nitrates. One aspect of the present invention seeks to provide an alternative nitrification process which is readily capable of commercial implementation, and in which the nitrification rate more nearly approaches the rate of ammonia generation. According to one aspect of the present invention there is provided a microbiological process for the nitrification of a fluid comprising passing the fluid to be nitrified through an immobilized biomass comprising nitrifying bacteria, characterised in that the bacteria are immobilized as a biofilm grown on porous particles, in particular coke.

Classifications:

International (IPC 8-9): C02F3/00 C02F3/08 C02F3/10 C02F3/12 (Advanced/Invention); C02F3/00 C02F3/10 C02F3/12 (Core/Invention)

International (IPC 1-7): C02F3/06 C02F3/08 C02F3/10 C02F3/12

CPC: Y10S210/903 C02F3/085 C02F3/006 C02F3/10 C02F2209/02 C02F2209/06 C02F2209/22 Y02W10/15

European: C02F3/00R C02F3/08D C02F3/10 M02F209/02 M02F209/06 M02F209/22

US: 210/151 210/614 210/617 210/618 210/903

Family:

Publication number	Publication date	Application number	Application date
AU199963577 A1	20000515	AU19990063577	19991026
AU199963577 A5	20000515	AU19990063577	19991026
CA2348520 AA	20010426	CA19992348520	19991026
CA2348520 C	20110927	CA19992348520	19991026
DE69944766 D1	20130725	DE19996044766	19991026
EP1129037 A1	20010905	EP19990950994	19991026
EP1129037 B1	20130529	EP19990950994	19991026
ES2427664 T3	20131031	ES19990950994T	19991026
GB9823496 A0	19981223	GB19980023496	19981027
US6572773 BA	20030603	US20010830418	20010629
WO0024682 A1	20000504	WO1999GB03542	19991026

Priority:

EP19990950994 19991026 GB19980023496 19981027 WO1999GB03542 19991026

Probable Assignee: MANCHESTER METROPOLITAN UNIV

Assignee(s): (std): ADVANCED BIOPROCESS DEV LTD ; DEMPSEY MICHAEL JOHN ; UNIV MANCHESTER METROPOLITAN

Assignee(s): THE MANCHESTER METROPOLITAN UNIVERSITY ; MANCHESTER METROPOLITAN UNIV ; MANCHESTER METROPOLITAN UNIVERSITY ; ADVANCED BIOPROCESS DEVELOPMENT LIMITED ; ADVANCED BIOPROCESS DEVELOPMENT LTD

Inventor(s): (std): DEMPSEY MICHAEL JOHN

Inventor(s): MICHAEL JOHN DEMPSEY

Agent(s): PHILLIPS ORMONDE FITZPATRICK; RIDOUT AND MAYBEE LLP; WAECHTERSCHAEUSER AND HARTZ PATENTANWALTSPARTNERSCHAFT MBB; BRADLEY ADRIAN; DE ELZABURU ALBERTO

Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CR CU CY CZ DE DK DM EE ES FI FR GA GB GD GE GH GM GN 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 NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Title: SIMULTANEOUS OXIDATION OF REDUCED S AND N COMPOUNDS.

Abstract: Source: EP0231036A1 A process for biological aerobic purification of waste water in which reduced S and N compounds present in this waste water, are converted under addition of air in one reactor, whereby the liquid in the reactor in which the micro-organisms are present, which are necessary for the conversions of the reduced S and N compounds, is kept in a well mixed condition.

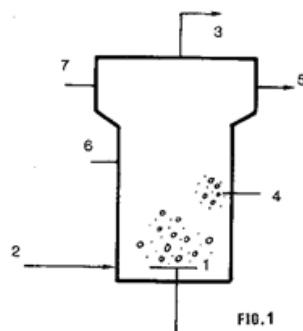
Classifications:

International (IPC 8-9): C02F3/02 C02F3/08 C02F3/10 C02F3/12 C02F3/30 (Advanced/Invention); C02F3/02 C02F3/08 C02F3/10 C02F3/12 C02F3/30 (Core/Invention)

International (IPC 1-7): B01J8/20 C02F3/02 C02F3/08 C02F3/10 C02F3/12

CPC: Y02W10/15 C02F3/085 C02F3/10 C02F3/30 C02F3/301 C02F3/302

European: C02F3/08D C02F3/10 C02F3/30 C02F3/30B C02F3/30D

**Family:**

Publication number	Publication date	Application number	Application date
AU198666995 A1	19870709	AU19860066995	19861224
EP0231036 A1	19870805	EP19870200010	19870106
JP62247892 A2	19871028	JP19870000983	19870106
NL8600026 A	19870803	NL19860000026	19860108
NL8601262 A	19871216	NL19860001262	19860520
PT84071 A	19870201	PT19870084071	19870107
PT84071 B	19890228	PT19870084071	19870107

Priority:

NL19860000026 19860108 NL19860001262 19860520 NL19868600026 19860108
 NL19868601262 19860520

Probable Assignee: GIST BROCADES NV

Assignee(s): (std): GIST BROCADES NV

Assignee(s): GIST BROCADES TE DELFT NV ; GIST BROCADES N V ; GIST BROCADES N V TE DELFT

Inventor(s): (std): AANORUTO MIYURUDERU ; HEIJNEN JOSEPH JOHANNES ; MULDER ARNOLD ; YOZEFU YOHANESU
 HEINEN ; JOSEPH JOHANNES HEIJNEN ; ARNOLD MULDER

Agent(s): PHILLIPS ORMONDE FITZPATRICK

Designated states: AT BE CH DE ES FR GB GR IT LI LU NL SE

12) Family number: 58868423 (WO15045094A1)

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Title: ORGANIC WASTEWATER BIOLOGICAL TREATMENT METHOD

Abstract: This organic wastewater biological treatment method allows performing stable biological treatment in which dispersed bacteria are suitably consumed. In this organic wastewater biological treatment method, dispersed bacteria are generated from bacteria by passing organic wastewater to an aerobic first biological tank, first biological treatment water which contains the dispersed bacteria from said first biological treatment tank is introduced into an aerobic second biological treatment tank to which a fluidized bed carrier has been added, and said dispersed bacteria are consumed by microorganisms. This organic wastewater biological treatment method is characterized in that the total volumetric BOD loading is 5kg/m³/d or less, and the loading of the dispersed bacteria-derived SS in the first biological treatment water to the carriers in the second biological treatment tank is 8kg[SS]/m³[carriers]/d or less.

Classifications:

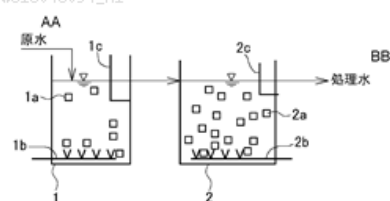
International (IPC 8-9): B01D35/02 C02F1/24 C02F1/44 C02F1/52
 C02F1/66 C02F3/00 C02F3/08 C02F3/10 C02F3/12

C02F3/32 (Advanced/Invention);

C02F103/26 C02F103/32 (Advanced/Non-invention)

CPC: C02F3/006 C02F3/085 C02F2103/26 C02F2103/32
 C02F2209/001 C02F2209/08 C02F2209/10 C02F3/10 Y02W10/15
 B01D35/02 C02F1/24 C02F1/44 C02F1/52 C02F1/66

PatBase - WO15045094_A1



AA Raw water
 BB Treated water

Family:

Publication number	Publication date	Application number	Application date
CN105307984 A	20160203	CN201380077529	20130927
KR20160060627 A	20160530	KR20167000066	20130927
SG11201601726V A1	20160428	SG20161101726	20130927

Priority:

WO2013JP76259 20130927

Probable Assignee: KURITA WATER IND LTD**Assignee(s):** (std): KURITA WATER IND LTD**Inventor(s):** (std): FUJISHIMA SHIGEKI**Agent(s):** SHIGENO TSUYOSHI

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 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

13) Family number: 24622688 (DE10127554B4)

© PatBase

Title: VERFAHREN ZUR BIOLOGISCHEN REINIGUNG VON ABWAESSERTEN

Abstract: Source: DE10127554B4 Verfahren zur biologischen Reinigung von Abwässern, bei dem aus einem Vorklaerbecken (1) vorgeklaertes Abwasser kontinuierlich durch einen Bioreaktor (1) mit einem intermittierend und feinblasig betriebenen Beluefter (7) und einem Schlitzrohr (9) als Fangvorrichtung fuer mit Mikroorganismen besiedel- und verwirbelbare Traegermaterialkoerper (4) fließt, die Traegermaterialkoerper (4) eine Dichte von < 1,0 grams per cubic centimetre aufweisen, und bei dem das Abwasser anschliessend in eine Nachklaerkammer (3) gefoerdert wird und dann in den Ablauf gelangt, dadurch gekennzeichnet, dass – der Bioreaktor (2) annaehrend zu 50 percent seines Wassernutzvolumens mit den Traegermaterialkoerpern (4) gefuellt ist; – die maximale Flaechenbelastung des Biofilms im Bioreaktor (2) less than or equal to 2 g BSB5/m² d betraegt; – die Traegermaterialkoerper (4) in der Belueftungsphase mit einer Geschwindigkeit von 20 cm/s bis 80 cm/s verwirbelt werden; – die Sauerstoffkonzentration im Abwasser in der Belueftungsphase auf 5 mg O₂/l bis 8 mg O₂/l eingestellt wird; – die Traegermaterialkoerper (4) in den Belueftungspausen unterhalb der Oberflaeche des Abwassers eine anoxisch wirkende Filterschicht bilden und die Belueftungsphase erst wieder einsetzt, wenn die Sauerstoffkonzentration im Abwasser in den Pausen der Belueftung einen Wert von nahezu 0 mg O₂/l erreicht; – das Schlitzrohr (9) eine Eintauchtiefe aufweist, die hoechstens der Schichtstaerke der schwebenden anoxisch wirkenden Filterschicht entspricht und – die sich im Bioreaktor (2) bildende geringe Schlammmenge in die Nachklaerkammer (3) gefoerdert wird, dort sedimentiert und aus dieser in das Vorklaerbecken (1) gefoerdert oder im Nachklaerbecken (3) gespeichert und aus diesem zur Entsorgung abgezogen wird.

Classifications:**International (IPC 8-9):** C02F3/02 C02F3/08 C02F3/12

C02F3/30 (Advanced/Invention);

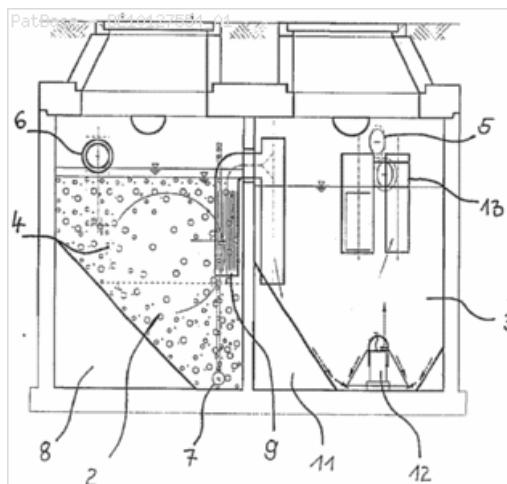
C02F3/12 C02F3/30 (Core/Invention)

International (IPC 1-7): C02F3/02 C02F3/08**CPC:** Y02W10/15 C02F3/085 C02F3/1247 C02F3/301 C02F2209/22

C02F2301/103

European: C02F3/08D C02F3/12H C02F3/12N2B C02F3/30B

M02F209/22 M02F301/10B

**Family:**

Publication number	Publication date	Application number	Application date
DE10127554 A1	20021212	DE20011027554	20010530
DE10127554 B4	20120223	DE20011027554	20010530

Priority:

DE20011027554 20010530

Probable Assignee: BERGMANN JUN**Assignee(s):** (std): BERGMANN SEN ; BERGMANN SEN MARTIN ; TRILLER WOLFGANG ; BERGMANN JUN**Assignee(s):** BERGMANN JUN MARTIN ; TRILLER**Inventor(s):** (std): TRILLER WOLFGANG DR ; TRILLER WOLFGANG ; BERGMANN SEN MARTIN**Inventor(s):** BERGMANN SEN**14) Family number: 31933765** (EP1533275A1)

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Title: ECOLOGICAL COMPOSITION FOR TREATING AND PURIFYING WASTE WATER

Abstract: Source: EP1533275A1 Said composition is essentially comprised of a natural mixture of dolomite and clays, in some proportions of 5-40 percent (w/w) and 45-95 percent (w/w), respectively, with respect to the total weight of the composition. Chemical or heat treatments may modify these compositions. <??>The compositions are used for treating and purifying waste water polluted by the presence of organic and/or inorganic pollutants. The composition is especially useful as a bacteria support in aerobic biological treatments.

Classifications:**International (IPC 8-9):** B01J20/12 C02F1/28 C02F1/52 C02F3/12 C02F3/30 (Advanced/Invention);

C02F3/06 C02F3/30 (Advanced/Non-invention);

B01J20/10 C02F1/28 C02F1/52 C02F3/12 C02F3/30 (Core/Invention);

C02F3/06 C02F3/30 (Core/Non-invention)

International (IPC 1-7): B01J20/12 C02F1/28 C02F1/52 C02F3/12

CPC: Y02W10/15 C02F1/5236 C02F1/281 C02F3/06 C02F3/085 C02F3/301 B01J20/12 C02F1/28 C02F1/52 C02F3/30

European: B01J20/12 C02F1/28 C02F1/28B C02F1/52 C02F1/52F C02F3/30 M02F3/06 M02F3/08D M02F3/30B

Family:

Publication number	Publication date	Application number	Application date
AT440805 E	20090915	AT20040380230T	20041119
DE602004022762 D1	20091008	DE200460022762T	20041119
EP1533275 A1	20050525	EP20040380230	20041119
EP1533275 B1	20090826	EP20040380230	20041119
ES2233199 AA	20050601	ES20030002716	20031120
ES2233199 BB	20060416	ES20030002716	20031120
ES2257947 AA	20060801	ES20040002775	20041118
ES2257947 BB	20070401	ES20040002775	20041118
ES2332651 T3	20100210	ES20040380230T	20041119
PT1533275 T	20091109	PT20040380230T	20041119

Priority:

ES20030002716 20031120 ES20040002775 20041118

Probable Assignee: MINERA CATALANO ARAGONESA SA

Assignee(s): (std): MINERA CATALANO ARAGONESA SA ; MINERA CATALANOARAGONESA SA

Assignee(s): SOCIEDAD ANONIMA MINERA CATALANOARAGONESA ; SOCIEDAD ANONIMA MINERA CATALANO ARAGONESA ; S A MINERA CATALANO ARAGONESA ; ANONIMA MINERA CATALANO ARAGONESA SOC ; ANONIMA MINERA CATALANOARAGONESA SOC

Inventor(s): (std): AGUAVIVA LADRERO NURIA ISABEL ; CABALLERO LOPEZ MIGUEL ANGEL ; CORTES JOSE IGNACIO TOLOSA ; JIMENEZ LORENZO MAXIMINO ; JIMENEZ LORENZO MAXIMO ; LADRERO NURIA ISABEL AGUAVIVA ; LOPEZ MIGUEL ANGEL CABALLERO ; LORENZO MAXIMO JIMENEZ ; TOLOSA CORTES JOSE IGNACIO

Inventor(s): MAXIMO JIMENEZ LORENZO ; MIGUEL ANGEL CABALLERO LOPEZ ; NURIA ISABEL AGUAVIVA LADRERO ; JOSE IGNACIO TOLOSA CORTES

Agent(s): SCHAEFER MATTHIAS W

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LU MC NL PL PT RO SE SI SK TR

15) Family number: 8558647 (WO9525696A1)

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Title: APPARATUS AND PROCESS FOR TREATING WASTE EFFLUENT

Abstract: A high rate multi-stages serial biological fluidised bed waste effluent treatment apparatus and process are provided. The apparatus comprises a series of chambers, interconnected, closed to the atmosphere and containing suspended biomass growth which treats waste effluent as it passes upwardly through each chamber. Successive chambers have increasing cross-sectional areas in order to reduce the upward flow velocity of the flow and so retain the growing particles within each stage for a sufficient period to effect purification of the pollutants. The respiring biomass requires a large supply of oxidant, e.g. oxygen, therefore the reactor, which is enclosed, will be kept under pressure, e.g. (3) to (5) bar, which will allow comparatively high concentration of oxygen to be dissolved without a problem due to effervescence. The apparatus can be adapted to treat any type of biodegradable waste effluent including industrial effluents.

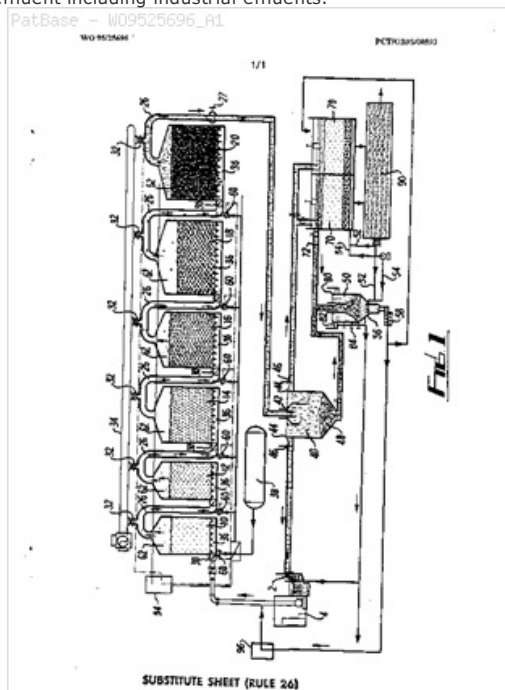
Classifications:

International (IPC 8-9): C02F3/12 C02F3/30 (Advanced/Invention); C02F3/12 C02F3/30 (Core/Invention)

International (IPC 1-7): C02F3/06 C02F3/12 C02F3/30

CPC: Y02W10/15 C02F3/085 C02F3/121 C02F3/302

European: C02F3/08D C02F3/12K C02F3/30D



Family:

Publication number	Publication date	Application number	Application date
AU199518998 A1	19951009	AU19950018998	19950317
EP0699173 A1	19960306	EP19950911425	19950317
GB9405572 A0	19940504	GB19940005572	19940319
WO9525696 A1	19950928	WO1995GB00593	19950317

Priority:

Probable Assignee: MONAGHAN JENNIFER**Assignee(s):** (std): MONAGHAN JENNIFER ; MONAGHAN WALLACE ; MONAGHAN JENNIFER ; MONAGHAN WALLACE ; WALLACE MONAGHAN**Inventor(s):** (std): MONAGHAN WALLACE**Inventor(s):** WALLACE MONAGHAN**Designated states:** AM AT AU BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK EE ES FI FR GA GB GE GN GR HU IE IT JP KE KG KP KR KZ LI LK LR LT LU LV MC MD MG ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SN SZ TD TG TJ TM TT UA UG US UZ VN**16) Family number: 10680375** (DE4201166A1)

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Title: SIMULTANEOUS TREATMENT OF ORGANIC WASTE PRODS., E.G. SEWAGE - BY SUBJECTING STREAMS OF COARSE PROD. FREE WASTE TO HYDROLYSING ROTTING, DENSIFYING AND COMPOSTING

Abstract: Source: DE4201166A1 A process for the simultaneous treatment of various organic waste prods. contg. solids, such as biorefuse from household, industries and agriculture, e.g. sewage, liquid manure, silage comprises a combination of steps in which the individual waste fractions are separated from coarse materials and then divided into streams (I), (II) and (III) contg. 3-10 percent, well above 10 percent and less than 3 percent solids respectively. The streams are treated as follows: (a) (II) is comminuted (16) and hydrolysed (17); (b) (I) is subjected to rotting (3), densified (4,5) by aerobic treatment, further densified (8) and the diluted water resulting from the densification process is used for hydrolysis in step (a) while the excess of sludge from the densification is used for the rotting of stream (I); (c) the heavily charged hydrolysate formed by the hydrolysis in (a) is combined with (III) and the mixt. of (II) and (III) is subjected to intensive methanisation (18), and (d) the partly stabilised solids resulting from the hydrolysis is separated, partly subjected to composting (22), and the collected trickled water is subjected to intensive methanisation. ADVANTAGE - The process uses less energy than prior art (e.g. DE3918259).

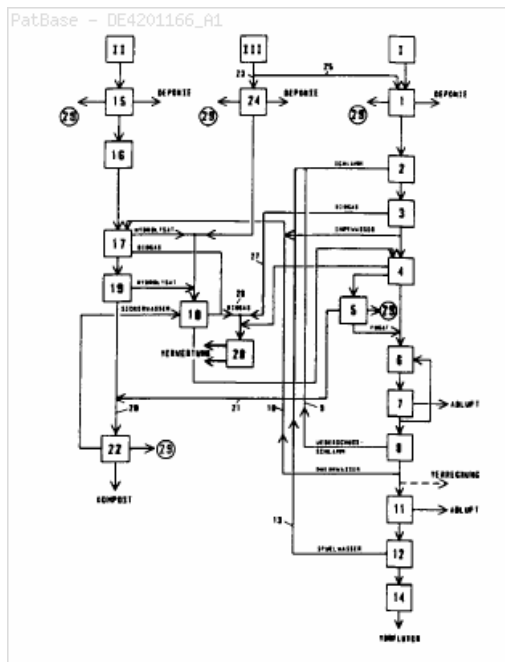
Classifications:

International (IPC 8-9): B01D53/84 B03B9/06 B09B3/00 C02F3/02 C02F3/06 C02F3/10 C02F3/12 C02F3/28 C02F3/30 C02F9/00 C05F15/00 C05F3/00 C05F9/00 C12S5/00 (Advanced/Invention); B01D53/84 B03B9/00 B09B3/00 C02F3/02 C02F3/06 C02F3/10 C02F3/12 C02F3/28 C02F3/30 C02F9/00 C05F15/00 C05F3/00 C05F9/00 C12S5/00 (Core/Invention)

International (IPC 1-7): A01C3/02 A62D3/00 B01D46/00 B01D53/00 B09B3/00 C02F11/02 C02F11/04 C05F15/00 C05F3/00 C05F5/00 C05F9/00 C12N11/00 C12R1/01 C12S5/00

CPC: Y02E50/343 C05F3/00 B01D53/84 B03B9/06 B09B3/00 B09B3/0083 C02F3/02 C02F3/06 C02F3/085 C02F3/10 C02F3/28 C02F3/286 C02F3/302 C02F9/00 C05F9/00 Y02W30/47 Y02W30/521 Y02W10/15 Y02P20/145

European: A62D3/00E11 A62D3/00E8 B01D53/84 B03B9/06 B09B3/00 B09B3/00T C02F3/02 C02F3/06 C02F3/08D C02F3/10 C02F3/28 C02F3/28S C02F3/30D C02F9/00 C05F3/00 C05F9/00

**Family:**

Publication number	Publication date	Application number	Application date
DE4201166 A1	19930722	DE19924201166	19920117

Priority:

DE19924201166 19920117

Probable Assignee: LINDE KCA DRESDEN GMBH**Assignee(s):** (std): LINDE KCA DRESDEN GMBH**Assignee(s):** LINDE KCA DRESDEN GMBH O 8010 DRESDEN DE**Inventor(s):** (std): LANGHANS GERHARD DR ING ; RAUER LOTHAR DR ING ; SCHLESIER HELMUT**Inventor(s):** SCHLESIER HELMUT DIPL AGR ING**17) Family number: 23410712** (US5580770A)

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Title: SUPPORT CONTAINING PARTICULATE ADSORBENT AND MICROORGANISMS FOR REMOVAL OF POLLUTANTS

Abstract: Source: US5580770A A biologically active support for removing pollutants from a fluid stream such as waste water is prepared. The support is formed of a polymeric foam substrate coated with a composition containing a particulate adsorbent which adsorbs, then releases pollutants, and a polymeric binder that binds the adsorbent to the surface of the substrate. The binder contains a suspension aid, and one or more pollutant-degrading microorganisms are adhered to the surface of the coated support. The binder preferably has a Tg of lower than or equal to about 250 DEG C. and may be a latex. Examples of suspension aids are surfactants and polyanionic polypeptides such as ammonium caseinate. The adsorbent is preferably a carbon material such as coal, charcoal, carbon black and activated carbon. Other adsorbents are silica gel, active clays, zeolites, hydrophobic and ion exchange resins, and molecular sieves. To remove pollutants, the biologically active support is placed in a reactor and a fluid stream containing a pollutant such as phenol is passed through the reactor where the pollutant is degraded by the microorganism and adsorbed to the adsorbent. The adsorbent acts as a buffer by adsorbing excess pollutant from solution when the pollutant concentration increases and when the pollutant

concentration decreases releases pollutant into solution where the microorganism degrades the pollutant.

Classifications:

International (IPC 8-9): C02F3/02 C02F3/06 C02F3/10 C02F3/12 C02F3/28 C12N11/02 C12S5/00 (Advanced/Invention); C02F1/28 C02F3/00 (Advanced/Non-invention); C02F3/02 C02F3/06 C02F3/10 C02F3/12 C02F3/28 C12N11/00 C12S5/00 (Core/Invention); C02F1/28 C02F3/00 (Core/Non-invention)

International (IPC 1-7): B09B3/00 C02F3/00 C02F3/02 C02F3/06 C02F3/10 C02F3/12 C02F3/28 C12M1/00 C12N11/02 C12N11/08 C12S13/00

CPC: Y02E50/343 Y02W10/15 C02F1/281 C02F1/283 C12N11/02 C02F3/085 C02F3/06 C02F3/10 C02F3/108 C02F2003/003

European: C02F3/06 C02F3/08D C02F3/10 C02F3/10K6 C12N11/02 M02F1/28B M02F1/28D M02F3/00B2

US: 210/601 210/615 210/616 210/617 210/620 435/176 435/177 435/180 435/181 435/262.5 435/289.1

PatBase - US5580770_A

U.S. Patent

Dec. 3, 1996

Sheet 1 of 4

5,580,770

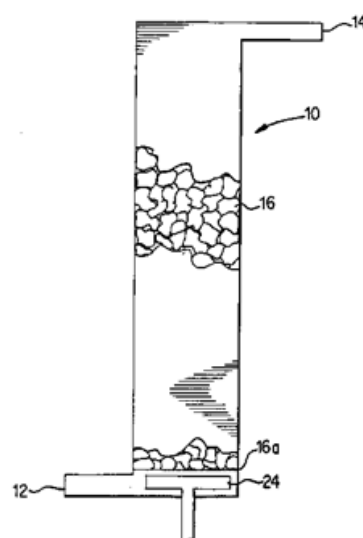


FIG. 1

Family:

Publication number	Publication date	Application number	Application date
AT144966 E	19961115	AT19930911010T	19930504
CA2133980 AA	19941020	CA19932133980	19930504
CA2133980 C	20030624	CA19932133980	19930504
DE69305847 D1	19961212	DE19936005847	19930504
DE69305847 T2	19970320	DE19936005847T	19930504
EP0639159 A1	19950222	EP19930911010	19930504
EP0639159 B1	19961106	EP19930911010	19930504
ES2093967 T3	19970101	ES19930911010T	19930504
JP07505336 T2	19950615	JP19930519582T	19930504
JP2638305 B2	19970806	JP19930519582T	19930504
JP7505336 T2	19950615	JP19930519582T	19930504
US5580770 A	19961203	US19930174587	19931227
US6395522 BA	20020528	US19940178343	19940106
WO9322245 A1	19931111	WO1993US04164	19930504

Priority:

US19890430709 19891102	US19910763735 19910923	US19930174587 19931227
US19940178343 19940106	US19920878105 19920504	WO1993US04164 19930504

Probable Assignee: ALLIED SIGNAL INC

Assignee(s): (std): ALLIED SIGNAL INC

Assignee(s): ALLIEDSIGNAL INC ; ALLIEDSIGNAL INC MORRISTOWN N J US ; ARAIDO SHIGUNARU INC ; DEFILIPPI LOUIS J ; LUPTON FRANCIS S ; MASHAYEKHI MANSOUR ; HRIBIK WALTER F ; UOP LLC

Inventor(s): (std): DEFILIPPI LOUIS ; DEFILIPPI LOUIS J ; HRIBIK WALTER ; HRIBIK WALTER F ; LUPTON FRANCIS ; LUPTON FRANCIS S ; MASHAYEKHI MANSOUR

Inventor(s): MASHAYEKHI MANSOUR HUNTINGTON WV 25705 US ; RAPUTON FURANSHISU ESU ; MASHAEKI MANSAA ; DEFUIRITSUPII RUISTO JEI ; HERIBIKU UORUTAA EFU

Agent(s): GOWLING LAFLEUR HENDERSON LLP

Designated states: AT BE CA CH DE DK ES FR GB GR IE IT JP LI LU MC NL PT SE

18) Family number: 31882967 (US2005098497A)

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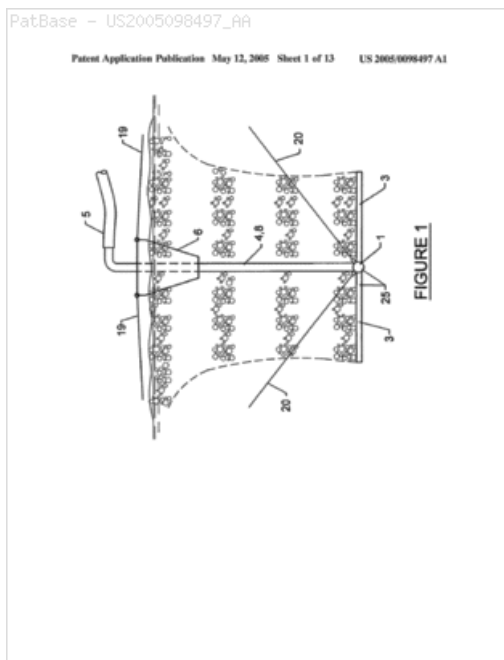
Title: PULSATING REACTORS

Abstract: Source: US2005098497A This is a method and apparatus for treatment of liquid media making use of at least one float positioned at the top of the liquid and at least one gas diffuser placed under the float and connected to this float by at least one brace, the diffuser is connected to a gas source by at least one flexible conduit. The gas emitted from the diffuser produces a mixture with liquid having density lower than the liquid and the float partially sinks in the liquid thus increasing the submergence of the diffuser and lowering the gas flow through the diffuser. At increased submergence, the gas flow is reduced, the mixture density increases, and the float rises. A repeatable motion up and down of the float-diffuser is established producing pulsations in the liquid. The method and apparatus can be used in a multitude of chemical, pharmaceutical, petrochemical, environmental and other industries for carrying out mass transfer, chemical and biological transformations, phase separations, thickening of suspensions, mixing, suspending of particles, washing, coagulation-flocculation, membrane filtration, filtration across particulate media, filtration across floating media, mass transfer across membrane, and other processes.

Classifications:

International (IPC 8-9): B01D19/00 B01D21/00 B01D65/08 B01F13/00 B01F15/02 B01F3/04 B01J10/00 B01J19/28 B03D1/24 C02F1/00 C02F3/12 (Advanced/Invention);

C02F3/28 C02F3/30 (Advanced/Non-invention);
B01D19/00 B01D21/00 B01D65/00 B01F13/00 B01F15/02 B01F3/04
B01J10/00 B01J19/28 B03D1/14 C02F1/00 C02F3/12 (Core/Invention);
C02F3/28 C02F3/30 (Core/Non-invention)
International (IPC 1-7): C02F1/00
CPC: B03D1/1406 B03D1/1412 B01J19/285 B01D19/0031
B01D21/0012 B01D21/0027 B01D21/08 B01D21/2444 B01D21/283
B01D65/08 B01D2315/06 B01D2321/2066 B01F3/04248
B01F13/0049 B01F15/0203 B01F15/024 B03D1/24 C02F3/085
C02F3/286 C02F3/301 B03D1/1462 B03D1/1475 B03D1/1487
Y02W10/15
European: B01D19/00F B01D21/00F B01D21/00L B01D21/08
B01D21/24G B01D21/28A B01D65/08 B01F13/00K10 B01F15/02B4
B01F15/02B40K B01F3/04C1B2F B01J19/28B B03D1/24 L01D315/06
L01D321/20F M02F3/08D M02F3/28S M02F3/30B
US: 210/620 210/749 210/749S



Family:

Publication number	Publication date	Application number	Application date
US2005098497 AA	20050512	US20030712603	20031112

Priority:

US20030712603 20031112

Probable Assignee: KHUDENKO BORIS M
Assignee(s): KHUDENKO BORIS M
Inventor(s): (std): KHUDENKO BORIS M
Inventor(s): KHUDENKO BORIS MIKHAILOVICH ; KHUDENKO BORIS
Agent(s): BORIS M KHUDENKO

19) Family number: 8851870 (EP0531955A2)

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Title: METHOD AND APPARATUS FOR THE DETERMINATION OF NITRIFICATION ACTIVITY IN A WASTE WATER STREAM OR BASIN AND ITS APPLICATION.

Abstract: The nitrification activity in a waste water stream or tank is expediently monitored by means of a waste water part-stream which is fed at a defined pH and specified residence time through a flow cell formed as a bioreactor which has a population of nitrifying microorganisms or receives them together with the waste water. The amount of pH correction medium is measured which is necessary to compensate the pH change associated with the nitrification. In addition, the turbidity in the flow cell can be measured. Depending on the objective, using an NH_4^{+} standard solution, the nitrification activity to be determined of a bacterial population to be evaluated can be determined or the ammonium load can be determined by means of a population of known activity, or else adaptation factors can be determined which are required for existing waste water loading and sewage sludge activities. The process can be used, in particular, for the regulation of feed to a nitrification reactor. The flow cells formed as miniaturised bioreactors can be offered in a standardised form having immobilised biomass, measuring probes and metering feed for test solution and pH-controlled pH correction medium feed having an electronic analysis and control unit.

Classifications:

International (IPC 8-9): C02F3/00 C02F3/06 C02F3/10 C02F3/12
C02F3/34 G01N33/18 (Advanced/Invention);
C02F3/00 C02F3/06 C02F3/10 C02F3/12 C02F3/34
G01N33/18 (Core/Invention)
International (IPC 1-7): C02F1/66 C02F3/00 C02F3/12 C02F3/30
C12Q1/02 C12R1/01 G01N21/49 G01N27/416 G01N33/18
CPC: Y02W10/15 C02F3/085 C02F3/006 C02F3/06 C02F3/10
C02F3/34 C02F2209/06 C02F2209/11 G01N33/188 G01N33/1893
European: C02F3/00R C02F3/06 C02F3/08D C02F3/10 C02F3/34
G01N33/18N G01N33/18Q M02F209/06 M02F209/11

Publication number	Publication date	Application number	Application date
DE4130465 A1	19930325	DE19914130465	19910913
DE4130465 C2	19970814	DE19914130465	19910913
EP0531955 A2	19930317	EP19920115377	19920909
EP0531955 A3	19930721	EP19920115377	19920909

DE19914130465 19910913

Assignee(s): (std): FORSCHUNGSZENTRUM JUELICH GMBH

Assignee(s): FORSCHUNGSZENTRUM JUELICH GMBH 5170 JUELICH DE ; FORSCHUNGSZENTRUM JUELICH GMBH 52428 JUELICH DE

Inventor(s): WANDREY CHRISTIAN PROF ; AIVASIDIS ALEXANDER DR

Designated states: AT CH DE DK IT LI NL