

Search history

Search 1: SFT=(fiber*) (Results 1000000)
Search 2: contaminant removal (Results 4402)
Search 3: layer* (Results 1000000)
Search 4: inner surface (Results 1000000)
Search 5: outer surface (Results 1000000)
Search 6: 1 and 2 (Results 1123)
Search 7: 6 and 3 (Results 702)
Search 8: 7 and 4 (Results 124)
Search 9: 8 and 5 (Results 87)
Search 10: polymer (Results 1000000)
Search 11: 10 and 9 (Results 57)
Search 12: region (Results 1000000)
Search 13: 12 and 11 (Results 34)
Search 14: 13 and pd<20150630 (Results 30)

Title: UPW TREATMENT AND SYSTEM WITH ORGANIC NITROGEN REMOVAL

Abstract: A UPW plant (100) treats feed fluid having an organic nitrogen contaminant by contact with a targeted removal unit (30) to reduce a trace concentration below a threshold. The removal unit may include an enzyme or other agent, free or bound, which is specifically effective to break down the contaminant. The enzyme is preferably stabilized, immobilized or protected, such that its integrity, or at least its activity, is maintained for hours, days or longer, operating without a cofactor and with high efficiency. The system is useful for removal of urea, which impairs a self-catalyzed lithography process or a pharmaceutical preparation process. Enzyme is, for example a lyophilized/crystallized urease, may be contacted with the stream by direct injection, or may pass through a reaction tank or delay and mixing line to assure adequate contact time for breakdown or capture of the contaminant. The enzyme may be immobilized on a support, e.g. a membrane or beads, forming a bead or column or surface across which the feed flows to cleave the urea in the feed stream, or may comprise microparticles that reside in the fluid and are themselves separated and re-used. When using free or microparticle-bound enzyme, microparticle substrate may be recovered as rententate from a downstream or side loop RO (215) or other filtration unit, or may be recovered in a settling tank, and returned to the reaction to maintain a high concentration of the enzyme or agent in operation.

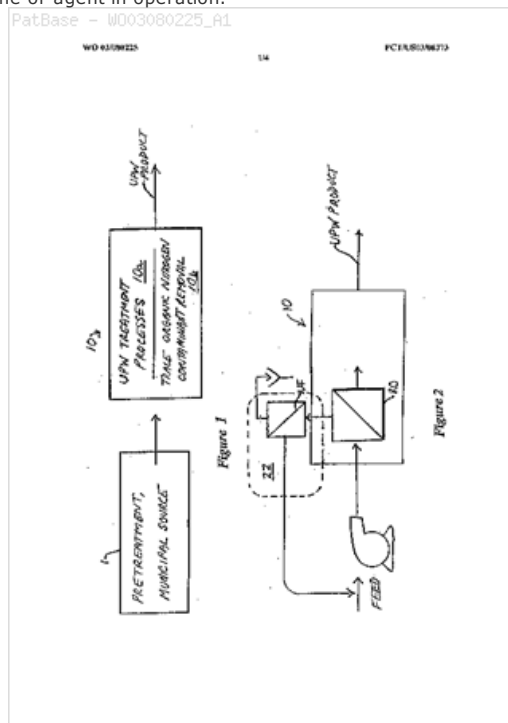
Classifications:

International (IPC 8-9): B01D61/00 B01D61/02 B01D61/04 B01D61/16 B01D69/14 C02F1/44 (Advanced/Invention); C02F1/04 C02F1/20 C02F1/32 C02F1/42 C02F1/469 C02F1/66 C02F5/00 C02F9/00 (Advanced/Non-invention); B01D61/00 B01D61/02 B01D61/16 B01D69/00 C02F1/44 (Core/Invention); C02F1/04 C02F1/20 C02F1/32 C02F1/42 C02F1/469 C02F1/66 C02F5/00 C02F9/00 (Core/Non-invention)

International (IPC 1-7): B01D61/00

CPC: B01D61/025 B01D61/027 B01D61/145 B01D61/147 C02F1/44 B01D61/00 B01D61/022 B01D61/04 B01D61/16 B01D69/141 B01D2311/04 B01D2317/025 C02F1/04 C02F1/20 C02F1/32 C02F1/42 C02F1/441 C02F1/444 C02F1/469 C02F1/66 C02F5/00 C02F9/00 C02F2101/16 C02F2101/38 C02F2103/04

European: B01D61/00 B01D61/02B B01D61/04 B01D61/16 B01D69/14B C02F1/44 L01D311/04 L01D317/02D M02F1/04 M02F1/20 M02F1/32 M02F1/42 M02F1/44B M02F1/44D M02F1/469 M02F1/66 M02F101/16 M02F101/38 M02F103/04 M02F5/00 M02F9/00

**Family:**

Publication number	Publication date	Application number	Application date
AU2003256147 AA	20031008	AU20030256147	20030318
WO03080225 A1	20031002	WO2003US08373	20030318

Priority:

US20020365366P 20020318 US20020386972P 20020606 US20020414049P 20020927
 WO2003US08373 20030318

Probable Assignee: IONICS

Assignee(s): (std): CARSON WILLIAM W ; COSTA LAWRENCE C ; GODEC RICHARD D ; IONICS ; LIN JUCHUI R ; MACDONALD RUSSELL J ; MELANSON PAUL ; SUSA THOMAS J

Assignee(s): IONICS INC

Inventor(s): (std): CARSON WILLIAM W ; COSTA LAWRENCE C ; GODEC RICHARD D ; LIN JUCHUI R ; MACDONALD RUSSELL J ; MELANSON PAUL ; SUSA THOMAS J

Inventor(s): THOMAS J SUSA ; WILLIAM W CARSON ; PAUL MELANSON ; RICHARD D GODEC ; RUSSELL J MACDONALD ; JUCHUI R LIN ; LAWRENCE C COSTA

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

Title: DISTILLATION REACTOR MODULE

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

Classifications:

International (IPC 8-9): B01D3/00 B01D3/06 B01D3/10 B01D3/26 B01D3/32 B01D39/20 B01D53/48 B01D53/62 B01D59/04 B01J B01J19/24 B01J19/26 B01J2/00 B01J6/00 B01J8/24 B02C23/00 B03C1/00 B22F3/10 B22F9/00 B29B17/00 C01B17/027 C01B17/74 C02F1/00 C10B49/12 C10G1/00 C10G11/18 C10G33/00 C10G45/00 C10G57/00 C10G7/00 C10G7/06 C10G9/04 C10J3/72 C10L9/10 C22B13/00 C22B15/00 C22B21/00 C22B7/00 C22B9/00 F03G7/00 F27B17/00 G21C1/02 G21D5/00 H01M10/54 H01M8/00 H02K55/02

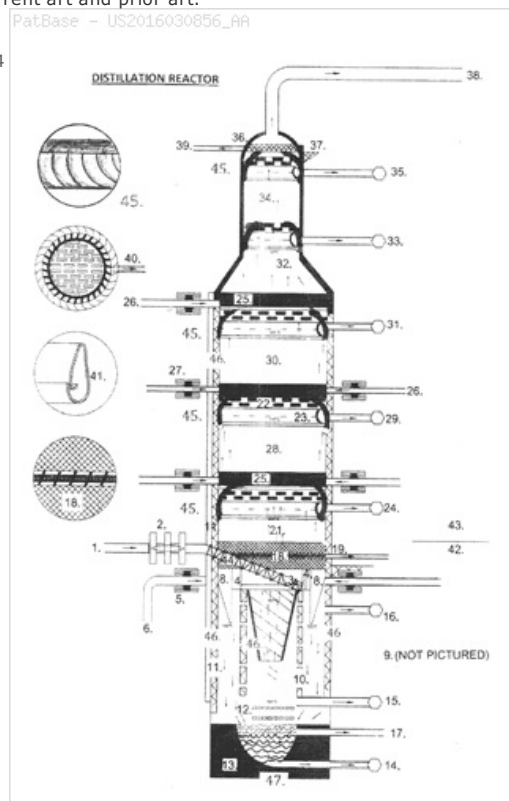
H02K7/09 (Advanced/Invention)

CPC: Y02E30/40 G21D1/00 B01J19/0093 B01J2219/00864 B01J2219/00867 B01J2219/00871 C01G21/02 C01B3/32 C01B13/02 C01B17/02 C01B2203/0205 C01B2203/0283 C01B2203/043 C01B2203/0445 C01B2203/0475 C10G1/02 C10G1/10 C10G31/08 C10G75/04 Y02P20/129 B09B5/00 Y02P30/446 Y02E30/30 B01D3/10 B01D3/006 B01D3/06 B01D39/2027 F03G7/00 B01D3/009 C10G7/06 G21C1/00 G21D5/00 C10G7/00 C10G57/00 C10G7/003 C10L9/10 C10J3/72 C10G1/00 C01B17/027 C01B17/74 B01J6/008 B01J2/00 B01J19/24 B01D53/48 B01D53/62 C22B9/00 F27B17/00 C02F1/00 C22B7/00 B29B17/00 B22F3/10 B22F9/00 C22B21/00 C22B15/00 C22B13/00 H01M8/00 H01M10/54 H02K55/02 H02K7/09 B02C23/00 B03C1/00 C10L2290/544 C10J2300/093 C10J2300/0946 B22F2009/001 C01B17/48 C10G11/18 C10G33/00 C10G45/00 Y02E20/16 Y02E20/18 Y02W10/33 Y02W10/37 Y02W30/84 C01B32/05 C01B32/20 C01B32/50 Y02P10/143

US: 196/46 202/232 209/213 210/251 241/301 241/65 266/160 310/90.5 422/129 422/170 422/187 422/198 422/255 423/522 423/567.1 429/49 505/163 505/166 60/698

JP F-Term: 4D036 4D076 4D076/AA22 4D076/AA23 4D076/AA24 4D076/BB03 4D076/BB18 4D076/CA11 4D076/CA19 4D076/CD21 4D076/DA02 4D076/DA10 4D076/DA35 4D076/EA04 4D076/EA12 4D076/EA15 4D076/FA03 4D076/FA12 4D076/FA18 4D076/FA20 4D076/FA33 4D076/HA13 4D076/HA20 4D076/JA06

JP F-Index: B01D3/26/Z B01D59/04

**Family:**

Publication number	Publication date	Application number	Application date
CA2907677 AA	20150921	CA20142907677	20140318
EP2969180 A2	20160120	EP20140762668	20140318
EP2969180 A4	20161005	EP20140762668	20140318
IL242590 A0	20160131	IL20140242590	20140318
JP2016512165 T2	20160425	JP20160502609T	20140318
US2016030856 AA	20160204	US20140776734	20140318
US2016032904 AA	20160204	US20140776736	20140318
US2016045841 AA	20160218	US20140776732	20140515
WO14146129 A2	20140918	WO2014US31118	20140318
WO14146129 A3	20150129	WO2014US31118	20140318
WO14153570 A2	20140925	WO2014US38290	20140515
WO14153570 A3	20150219	WO2014US38290	20140515
WO14153570 A9	20150806	WO2014US38290	20140515
WO14200605 A2	20141218	WO2014US31116	20140318
WO14200605 A3	20150326	WO2014US31116	20140318
WO14200605 A4	20150430	WO2014US31116	20140318
WO14200605 A9	20150205	WO2014US31116	20140318

Priority:

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

Probable Assignee: TRANSTAR GROUP LLC

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

Assignee(s): TRANSTAR GROUP LLC

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

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

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

Title: DRY FORMED FILTERS AND METHODS OF MAKING THE SAME

Abstract: The disclosure includes, in some embodiments, a filter element that includes a first porous outer **layer** formed from a nonwoven material, a second porous outer **layer** formed from a nonwoven material, and at least one inner porous **layer** formed from a high loft nonwoven material (or other suitable material) disposed between the first porous outer **layer** and the second porous outer **layer**. The high loft nonwoven material has a three dimensional matrix formed by entangled and bonded **fibers** that cooperate to form a plurality of three dimensional interstices between the **fibers** for maintaining an open and tortuous flow path for fluid to pass through. The filter element also includes filter aid particles dispersed in the interstices of the high loft nonwoven material.

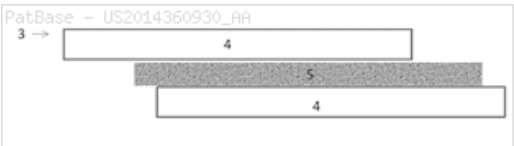
Classifications:

International (IPC 8-9): B01D B01D29/03 B01D29/07 B01D29/39 B01D29/56 B01D35/02 B01D39/00 B01D39/02 B01D39/08 B01D39/14 B01D39/16 B01D39/20 B32B B32B5/22 B32B5/32 (Advanced/Invention) **CPC:** B01D39/02 B32B5/26 B32B2262/0276 B01D39/1623 B01D2239/065 B01D29/56 B01D29/111 B01D29/41 B01D2239/04 B01D39/14 B01D39/163 B01D39/2079 B01D29/031 B32B5/22 B01D2239/0407 B01D2239/045 B01D2239/0677 B01D2239/1258

US: 210/489 210/490 210/493.5 210/504

JP F-Term: 4D016 4D019 4D019/AA03 4D019/BA03 4D019/BA06 4D019/BA07 4D019/BA12 4D019/BA13 4D019/BB03 4D019/BB12 4D019/BC05 4D019/BD01 4D019/CA02 4D019/CA03 4D019/CA05 4D019/CB06 4D019/DA02 4D064 4D064/BM25 4D116

JP F-Index: B01D29/06/510/Z B01D29/34/501/C B01D35/02/E B01D39/16/A



Family:

Publication number	Publication date	Application number	Application date
AU2014275018 AA	20151224	AU20140275018	20140604
CA2914633 AA	20151204	CA20142914633	20140604
CL2015003564 A1	20160923	CL20150003564	20151204
EP3003530 A1	20160413	EP20140808255	20140604
EP3003530 A4	20170104	EP20140808255	20140604
JP2016525943 T2	20160901	JP20160518428T	20140604
US2014360930 AA	20141211	US20140271271	20140506
US2014360931 AA	20141211	US20140271294	20140506
US2015298032 AA	20151022	US20140323421	20140703
US2016082375 AA	20160324	US20150956126	20151201
WO14197555 A1	20141211	WO2014US40842	20140604
ZA201509283 A	20161130	ZA20150009283	20151221

Priority:

US20130831769P 20130606 US20140981663P 20140418 US20140271271 20140506
US20140271294 20140506 US20140007478P 20140604 WO2014US40842 20140604
US20140323421 20140703 US20150956126 20151201

Probable Assignee: GUSMER ENTERPRISES INC

Assignee(s): (std): GUSMER ENTPR INC ; MENZIES ROBERT ; TINKHAM ROBERT L

Assignee(s): GUSMER ENTERPRISES INC

Inventor(s): (std): TINKHAM ROBERT L ; MENZIES ROBERT

Agent(s): EAGAR AND MARTIN PTY LTD; EAGAR AND ASSOCIATES PTY LTD; BERESKIN AND PARR LLP SENCRL SRL; ESTUDIO TRANSGLOBO LTDA Y O HUGO RUBIO G Y O ALEX SEVERIN S; ZACCO DENMARK A S; TOKYO ARPA IP AND CO; POLLACK BRIAN 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: FILTER ASSEMBLY FOR INTAKE AIR OF FUEL CELL

Abstract: A filter assembly for removing particulate contaminants and chemical contaminants from an incoming dirty air stream for a fuel cell. The filter assembly also includes a noise suppression element that reduces noise emanating from any equipment, such as a compressor. The filter assembly can include a particulate filter portion for removing physical or particulate contaminants, a chemical filter portion for removing chemical contaminants, or can have both portions.

Classifications:

International (IPC 8-9): B01D39/14 B01D39/16 B01D46/00 B01D46/24 B01D46/42 B01D46/52 B01D50/00 B01D53/04 F02M35/14 H01M8/04 H01M8/06 (Advanced/Invention); B01D39/14 B01D39/16 F02M35/14 H01M8/04 (Advanced/Non-invention); B01D46/00 B01D53/04 H01M8/06 (Core/Invention); B01D39/14 B01D39/16 F02M35/14 H01M8/04 (Core/Non-invention)

International (IPC 1-7): B01D39/14 B01D39/16 B01D46/00 B01D50/00 B01D53/04 F02M35/14 H01M2/00 H01M8/00 H01M8/02 H01M8/04 H01M8/06 H01M8/18

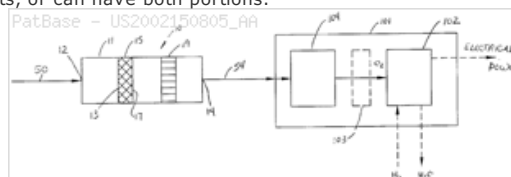
CPC: F02M35/1266 B01D53/0431 B01D46/0023 B01D46/0036 B01D46/10 B01D46/24 B01D46/42 B01D46/4227 B01D46/4236 B01D46/525 B01D46/527 B01D53/0407 B01D53/0415 B01D53/0446 B01D2253/10 B01D2253/102 B01D2253/104 B01D2253/106 B01D2253/108 B01D2253/206 B01D2253/25 B01D2253/304 B01D2253/3425 B01D2257/2045 B01D2257/30 B01D2257/302 B01D2257/304 B01D2257/40 B01D2257/404 B01D2257/406 B01D2257/708 B01D2257/80 B01D2258/01 B01D2258/0208 B01D2259/40009 B01D2259/40084 B01D2259/4566 B01D2267/40 B01D2279/60 F02M35/14 H01M8/04089 H01M8/04201 H01M8/0662 H01M8/0687

European: B01D46/00D4 B01D46/00F60 B01D46/10 B01D46/24 B01D46/42 B01D46/42M B01D46/42N B01D46/52 B01D46/52F6 B01D46/52F6W B01D53/04C B01D53/04C2 B01D53/04C6 F02M35/14 H01M8/04C2 H01M8/06C H01M8/06C8 L01D253/10 L01D253/102 L01D253/104 L01D253/106 L01D253/108 L01D253/206 L01D253/25 L01D253/304 L01D253/342H L01D257/204C L01D257/30 L01D257/302 L01D257/304 L01D257/40 L01D257/406 L01D257/708 L01D257/80 L01D258/01 L01D258/02A L01D259/40K4 L01D259/40T10 L01D259/45V L01D267/10 L01D267/40 L01D279/60 L01D53/04C10 R02M35/14 T01M8/04C2 T01M8/04C6 Y02E60/50

US: 429/12 429/13 429/19 429/30 429/33 429/34 429/410 429/410P 429/513 429/513S 55/350.1 55/350.100P 55/385.1 55/467 55/473 55/482 55/482S 55/486 55/487 55/495 55/524 55/527 55/528 55/529 55/529S 95/135 95/90 96/108 96/121 96/132 96/134 96/136 96/153 96/154 96/380 96/381 96/383 96/384

JP F-Term: 4D012 4D012/CA10 4D012/CA15 4D012/CA16 4D012/CA20 4D012/CB01 4D012/CG01 4D012/CH01 4D012/CK10 4D019 4D019/AA01 4D019/BA13 4D019/BC05 4D019/CB04 4D058 4D058/JA12 4D058/JB14 4D058/TA02 4D058/UA18 5H027 5H027/AA06 5H027/BC06 5H127 5H127/AA05 5H127/AC04 5H127/AC05 5H127/BA02 5H127/BB02 5H127/BB07 5H127/BB12 5H127/BB21 5H127/BB32 5H127/BB37 5H127/EE11

JP F-Index: B01D39/14/B B01D39/16/Z B01D46/00/F B01D53/04/A B01D53/04/110 H01M8/04/J H01M8/06/K H01M8/0606



Family:

Publication number	Publication date	Application number	Application date
AU2002258770 AA	20021028	AU20020258770	20020411
CA2441087 AA	20030912	CA20022441087	20020411
CA2441087 C	20081118	CA20022441087	20020411
CN100414086 C	20080827	CN20028008145	20020411
CN1646802 A	20050727	CN20028008145	20020411
EP1381769 A1	20040121	EP20020728737	20020411
JP2004532107 T2	20041021	JP20020581818T	20020411
JP3774195 B2	20060510	JP20020581818T	20020411
KR20030085106 A	20031101	KR20037013315	20020411
MXPA03009231 A1	20050307	MX2003PA09231	20020411
US2002150805 AA	20021017	US20010832715	20010411
US2002150806 AA	20021017	US20010879441	20010612
US2002157359 AA	20021031	US20020122647	20020410
US2005076623 AA	20050414	US20040942211	20040914
US2005235615 AA	20051027	US20050052521	20050207
US2006292426 AA	20061228	US20060463711	20060810
US6780534 BB	20040824	US20010832715	20010411
US6783881 BB	20040831	US20010879441	20010612
US6797027 BB	20040928	US20020122647	20020410
US7138008 BB	20061121	US20040942211	20040914
US7416580 BB	20080826	US20050052521	20050207
WO02084099 A1	20021024	WO2002US11443	20020411

Priority:

US20010832715 20010411 US20010879441 20010612 US20020122647 20020410
 WO2002US11443 20020411 US20040942211 20040914 US20050052521 20050207
 US20060463711 20060810

Probable Assignee: DONALDSON CO INC

Assignee(s): (std): BOURGET RANDY ; CANEPA RICHARD THOMAS ; STENERSEN EIVIND ; NYMAN WILLIAM MICHAEL ; DONALDSON CO INC ; NYMAN WILLIAM ; LINNERTSTEN STAFFAN ; WHITE DONALD H

Assignee(s): DONALDSON COMPANY INC ; DONALDSON CO ; DONALDSOM CO INC ; DONALDSOM COMPANY INC

Inventor(s): (std): STENERSEN EIVIND ; NYMAN WILLIAM MICHAEL ; CANEPA RICHARD THOMAS ; STENERSEN ELVIND ; NYMAN WILLIAM ; BOURGET RANDY ; LINNERTSTEN STAFFAN ; WHITE DONALD H ; EIVIND STENERSEN ; MICHAEL NYMAN WILLIAM ; THOMAS CANEPA RICHARD ; RICHARD THOMAS CANEPA ; NYMAN WILLIAM M ; CANEPA RICHARD T

Inventor(s): CANEPA RICHARD ; WHITE DONALD

Agent(s): OYEN WIGGS GREEN AND MUTALA LLP; ATTENTION MARA E LIEPA MERCHANT AND GOULD PC; MERCHANT AND GOULD PC; PAULY DEVRIES SMITH AND DEFFNER LLC

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 VN YU ZA ZM ZW

Title: METHODS OF USING OZONE TO DEGRADE ORGANIC MATERIAL

Abstract: Methods of using ozone have been developed which sterilize instruments and medical wastes, oxidize organics found in wastewater, clean laundry, break down contaminants in soil into a form more readily digested by microbes, kill microorganisms present in food products, and destroy toxins present in food products. The preferred methods for killing microorganisms and destroying toxins use pressurized, humidified, and concentrated ozone produced by an electrochemical cell.

Classifications:

International (ipc 8-9): B01D53/22 B01D53/32 B01F3/02 B01J19/00 B01J19/24 B01J8/00 C01B13/10 C01B15/01 C02F1/461 C02F1/467 C02F1/78 C11D11/00 C11D7/02 C25B1/13 C25B1/24 C25B1/26 C25B1/30 C25B13/02 C25B9/08 C25B9/20 G01R1/20 G01R31/36 H01M4/92 H01M8/02 H01M8/04 H01M8/10 (Advanced/Invention); C02F1/00 C02F1/32 C02F1/461 C02F1/78 H01M4/86 H01M4/90 H01M8/02 H01M8/04 H01M8/18 (Advanced/Non-invention); B01D53/22 B01D53/32 B01F3/00 B01J19/00 B01J19/24 B01J8/00 C02F1/461 C02F1/78 C25B1/00 C25B13/00 C25B9/06 C25B9/18 H01M4/90 H01M8/02 H01M8/04 H01M8/10 (Core/Invention); C02F1/00 C02F1/32 C02F1/78 H01M4/86 H01M8/02 H01M8/04 H01M8/18 (Core/Non-invention)

International (ipc 1-7): A61L9/00 B01D69/06 B01D71/40 B01F3/04 B01J19/08 B29C43/00 C25B1/00 C25B1/02 C25B1/24 C25B1/30 C25B9/00 C25C1/00 D06B1/00 G01N27/403 G01R19/00 H01M8/10

IPC: G01R1/203 G01R31/36 C01B13/10 C01B15/01 C02F1/46104 C11D7/02 C11D11/0017 H01M8/1067 Y02P70/56 C25B1/26 C02F2101/12 C25B1/24 C25B9/206 H01M4/8605 H01M4/9083 H01M4/92 C02F1/32 C02F1/4672 C02F1/78 C02F2001/46128 C02F2001/46166 C02F2201/46115 C02F2201/46195 C02F2201/782 C25B1/30 H01M8/0289 H01M8/1007 B01D53/229 C25B1/13 B01D53/22 B01D53/326 B01F3/022 B01J8/009 B01J19/2475 B01J2208/00061 B01J2208/00132 B01J2208/00256 B01J2208/00539 B01J2208/00584 B01J2219/00058 B01J2219/00063 B01J2219/00067 B01J2219/00069 B01J2219/00081 B01J2219/00099 B01J2219/00103 B01J2219/00135 B01J2219/00162 B01J2219/00171 B01J2219/00184 C02F1/4618 C02F2001/46142 C02F2101/30 C02F2303/04 C02F2305/023 C25B9/08 C25B13/02 H01M8/0202 H01M8/04119 H01M8/04291 H01M8/1023 H01M8/1039 H01M8/1065 H01M8/186 H01M2300/0082 Y02C20/30 Y02E60/528

European: B01D53/22 B01D53/22W B01D53/32E B01F3/02B B01J19/24P B01J8/00L4 C02F1/461B6 C02F1/467B C02F1/78 C25B1/13 C25B1/24 C25B1/26 C25B1/30 C25B13/02 C25B9/08 C25B9/20B2 G01R1/20B G01R31/36 H01M4/90S2 H01M4/92 H01M8/02E2 H01M8/04C2E H01M8/10B H01M8/10E2B2 H01M8/10E2D H01M8/10E2K H01M8/10E2M L01J208/00C10 L01J208/00C2B2B4 L01J208/00C2D2C L01J208/00C2D4L L01J208/00C4 L01J219/00B10 L01J219/00B17 L01J219/00B2B2B L01J219/00B2B2B4 L01J219/00B2B2F L01J219/00B2B2H L01J219/00B2D2C L01J219/00B2D4H L01J219/00B2D4L L01J219/00B2L2 L01J219/00B4 M02F1/32 M02F1/461B M02F1/461B2H M02F1/461B2J2B M02F1/461B2L2B2 M02F1/78 M02F101/12 M02F101/30 M02F201/461B16 M02F201/782 M02F303/04 M02F305/02B S01R31/36C T01M300/00B8C T01M4/86B T01M8/02C T01M8/04F T01M8/10E2B2 T01M8/10E2D T01M8/18C2 Y02C20/30 Y02E60/52B Y02E60/52B2B

US: 204/157.15 204/228 204/228.1 204/252 204/255 204/256 204/257 204/258 204/282 204/283 204/290.11 204/290.12 204/290.14 204/290F 204/290R 204/296 204/406 205/464 205/466 205/468 205/618 205/622 205/626 205/633 205/635 205/636 210/321.75 210/321.84 261/104 261/107 264/129 264/308 264/313 264/340 264/343 264/85 324/425 324/426 324/713 422/186.07 422/186.070S 422/186.08 422/28 422/28S 422/4 422/4S 423/481 423/483 426/320 426/320P 427/307 427/393.5 429/30 429/33 429/40 429/44 429/494 429/524 429/532 8/147 8/149.1 8/149.2 8/158

Family:

Publication number	Publication date	Application number	Application date
US2003039729 AA	20030227	US20020145572	20020514
US5460705 A	19951024	US19930091752	19930713
US5512831 A	19960430	US19940344285	19941123
US5635039 A	19970603	US19940344813	19941123
US5770033 A	19980623	US19970883262	19970626
US5916505 A	19990629	US19970806785	19970226
US5972196 A	19991026	US19970910598	19970731
US5996976 A	19991207	US19960641210	19960430
US6149810 A	20001121	US19980009061	19980120
US6183623 BA	20010206	US19980034527	19980303
US6387241 BA	20020514	US19990426387	19991025
US6620210 BB	20030916	US20020145572	20020514

Priority:

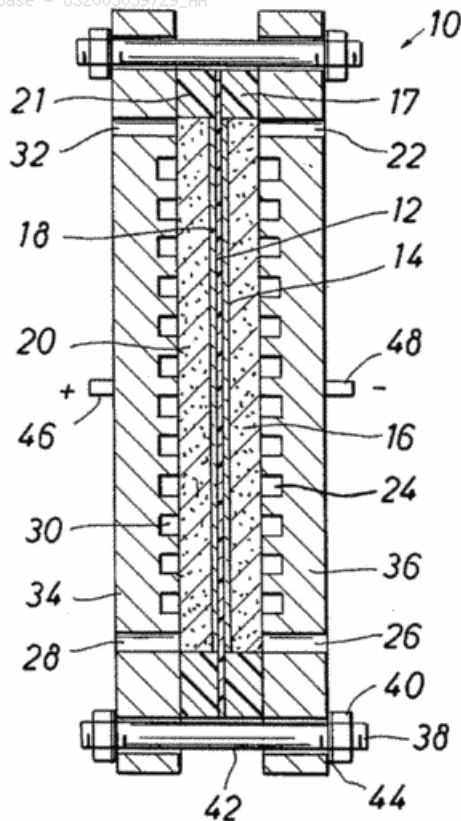
US19930091752 19930713	US19940344285 19941123	US19940344813 19941123
US19950472183 19950607	US19950483333 19950607	US19960641210 19960430
US19970806785 19970226	US19970883262 19970626	US19970910598 19970731
US19980009061 19980120	US19980034527 19980303	US19990426387 19991025
US20020145572 20020514		

Probable Assignee: LYNNTECH INT LTD

Assignee(s): (std) LYNNTECH INC

Assignee(s): LYNNTECH IND ; LYNNTECH IND INC ; LYNNTECH IND LTD ; LYNNTECH INT ; LYNNTECH INT INC ; LYNNTECH INT LTD ; NATIONAL AERO AND SPACE ADMINISTRATION ; NAVY SECRETARY OF UNITED STATES OF AMERICA ; LYNTech INT ; NATIONAL AERONAUTICS AND SPACE ADMINISTRATION ; LYNNTECH POWER SYSTEMS LTD ; NATIONAL SCIENCE FOUNDATION ; TESSOL INC ; LYNTech INT LTD ; CITY BANK ;

PatBase - US2003039729_AA



IND LLC

Inventor(s): (std): CISAR ALAN J ; MURPHY OLIVER J ; HITCHENS G DUNCAN ; GONZALEZ MARTIN ANUNCIA ; SALINAS
CARLOS E

Title: PLEATED FILTRATION MEDIA HAVING TAPERED FLUTES

Abstract: Pleated filtration media, media packs, filter elements, and methods for filtering fluid are provided which contain three dimensional tapered flutes in the media surface, the flutes configured to improve filter performance. In certain embodiments the flutes have defined peaks that reduce masking between adjacent pleats, the flutes have ridges along their length to modify flute cross sectional geometry, and/or the flutes provide for volume asymmetry across the media

Classifications:

International (IPC 8-9): B01D25/26 B01D27/06 B01D29/00 B01D29/07 B01D29/21 B01D46/00 B01D46/24 B01D46/52 B1D25/26 B1D46/00 (Advanced/Invention);

B01D39/16 B01D39/18 B01D39/20 (Advanced/Non-invention)

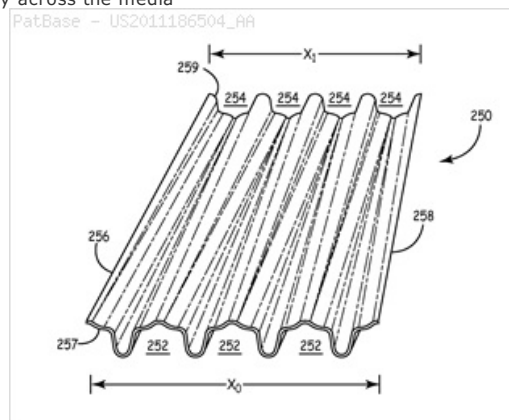
CPC: B01D46/525 B01D25/26 B01D46/0001 B01D46/522 B01D46/526 B01D29/0093 B01D29/213 B01D46/2411 B01D2201/12 B01D2201/127

European: B01D25/26 B01D46/00B B01D46/52F2 B01D46/52F6

US: 210/493.1 210/493.100P 55/521 55/521S

JP F-Term: 4D016 4D019 4D019/AA01 4D019/AA02 4D019/BA04 4D019/BA05 4D019/BA12 4D019/BA13 4D019/BA16 4D019/BB03 4D019/CA02 4D019/CB06 4D058 4D058/JA13 4D058/JA19 4D058/JB05 4D058/JB06 4D058/JB13 4D058/JB14 4D058/JB18 4D058/JB25 4D058/KA01 4D058/KA03 4D058/SA07 4D116

JP F-Index: B01D29/06/510/C B01D29/06/510/Z B01D39/16/A B01D39/18 B01D39/20/B B01D39/20/D B01D46/52/A B01D46/52/C



Family:

Publication number	Publication date	Application number	Application date
AU2011207507 AA	20110728	AU20110207507	20110125
AU2011207507 BB	20160825	AU20110207507	20110125
BR112012018520 A2	20180605	BR20121118520	20110125
CA2787822 AA	20120720	CA20112787822	20110125
CN102781546 A	20121114	CN201180011588	20110125
CN102781546 B	20160106	CN201180011588	20110125
CN105536383 A	20160504	CN201510896382	20110125
DE602011047550 D1	20180524	DE201160047550T	20110125
EP2528675 A1	20121205	EP20110703321	20110125
EP2528675 B1	20180418	EP20110703321	20110125
EP3415218 A1	20181219	EP20180164621	20110125
IN02038KN2012 A	20160826	IN2012KN02038	20120804
JP2013517930 T2	20130520	JP20120550211T	20110125
MX2012008542 A1	20121112	MX2012008542	20110125
TR201809519 T4	20180723	TR20180009519T	20110125
US2011186504 AA	20110804	US20110013631	20110125
US2019054412 AA	20190221	US20180113807	20180827
US10058812 BB	20180828	US20110013631	20110125
WO11091432 A1	20110728	WO2011US22446	20110125

Priority:

US20100298109P 20100125 CN201180011588 20110125 EP20110703321 20110125
US20110013631 20110125 WO2011US22446 20110125 US20180113807 20180827

Probable Assignee: DONALDSON CO INC

Assignee(s): (std): DONALDSON CO INC ; ROCKLITZ GARY L ; ROCKLITZ GARY J

Assignee(s): DONALDSON CO INC MINNEAPOLIS ; DONALDSON COMPANY INC

Inventor(s): (std): ROCKLITZ GARY J ; GARY L ROCKLITZ ; ROCKLITZ GARY L ; GARY J ROCKLITZ

Inventor(s): GARY J

Agent(s): FREEHILLS PATENT ATTORNEYS; HERBERT SMITH FREEHILLS; FPA PATENT ATTORNEYS PTY LTD; OYEN WIGGS GREEN AND MUTALA LLP; EISENFUEHR SPEISER PATENTANWALTE RECHTSANWALTE PARTGMBB; EISENFUEHR SPEISER AND PARTNER; EISENFUEHR SPEISER; MEHMET NAZIM AYDIN DERIS; PAULY DEVRIES SMITH AND DEFFNER LLC; PAULY DANIEL M

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

Title: METHOD OF MAKING A CORRUGATED NONWOVEN WEB OF POLYMERIC MICROFIBER

Abstract: A method of making a corrugated nonwoven web of polymeric microfiber, which method comprises: (a) introducing a nonwoven web of polymeric microfiber having a solidity of 0.1 or less into a corrugating apparatus that has a plurality of paddles secured at a first end to a means for moving the paddles about a path, the nonwoven web of polymeric microfiber making contact with spaced second ends of the paddles opposite to the paddles' first ends; and (b) reducing the spacing between the second ends of the paddles to cause the nonwoven web of polymeric microfiber to become corrugated, wherein the corrugated nonwoven web of polymeric microfiber has a solidity of 0.1 or less.

Classifications:

International (IPC 8-9): A41G7/00 A62B18/02 A62B23/02 B01D39/00 B01D39/02 B01D39/08 B01D39/16 B01D46/00 B01D46/10 B01D46/14 B01D46/30 B01D46/52 B01D46/54 B29C53/28 B29C65/08 B31F1/30 B32B3/28 B32B5/08 B32B5/26 D04H1/00 D04H1/54 D04H1/70 D04H11/04 D04H13/00 F16L59/02 (Advanced/Invention); A41G7/00 B01D39/00 (Advanced/Non-invention); B01D46/54 D04H1/70 (Core/Invention); D04H (Subclass/Invention)

International (IPC 1-7): A41G7/00 A62B18/02 A62B23/02 B01D39/00 B01D39/16 B01D46/00 B01D46/14 B01D69/12 B01D71/06 B29C53/22 B31F1/24 B32B3/28 B32B5/06 B32B5/08 B32B5/16 B32B5/22 D02G3/00 D03D3/00 D04H1/00 D04H1/54 D04H1/70 D04H11/04 E04B1/78 F16L59/02

CPC: F16L59/028 Y10S428/903 A62B23/02 A62B23/025 B01D39/02 B01D39/08 B01D39/1623 B01D39/163 B01D46/0001 B01D46/0036 B01D46/103 B01D46/30 B01D46/52 B01D46/546 B01D2239/0208 B01D2239/0216 B01D2239/04 B01D2239/0407 B01D2239/0414 B01D2239/0457 B01D2239/0471 B01D2239/0492 B01D2239/0613 B01D2239/0622 B01D2239/0627 B01D2239/065 B01D2239/0654 B01D2239/0659 B01D2239/0668 B01D2239/0672 B01D2239/0677 B01D2239/0681 B01D2239/069 B01D2239/10 B01D2239/1216 B01D2239/1233 B01D2239/1291 B01D2265/04 B01D2275/10 B29C53/28 B29C53/285 B29C65/08 B29C66/80 B29K2313/02 B29L2016/00 B31F1/30 B29C65/086 B29C66/438 Y10T156/1016 Y10T156/1025 Y10T428/1355 Y10T428/1362 Y10T428/24124 Y10T428/24355 Y10T428/24636 Y10T428/24694 Y10T428/25 Y10T428/252 Y10T428/2904 Y10T428/2905 Y10T428/2909 Y10T428/2913 Y10T428/2915 Y10T428/2922 Y10T428/31 B29C66/7294 Y10T442/60 Y10T442/614 Y10T442/627 B29C66/72521 B29C66/83521 B29C65/7894 B29C66/73921 Y10T428/249922 Y10T428/249943 B29C66/71 D04H1/558 B29C66/81433 D04H1/559 D04H1/56 D04H1/74 B29C66/1122 B29C66/131 B32B1/00 B32B5/022 B32B2262/0253 B32B2307/304 B32B2307/718 B32B3/28 B01D46/521 B32B5/26 B29C66/21 B29C66/8242 B29C66/9241 B29C66/934 B29L2031/4835

European: A62B23/02 A62B23/02A B01D39/02 B01D39/08 B01D39/16B4 B01D39/16B4B B01D46/00B B01D46/00F60 B01D46/10C B01D46/30 B01D46/52 B01D46/52F B01D46/54N B29C53/28 B29C53/28B B29C65/08 B29C66/80 B31F1/30 B32B3/28 B32B5/26 D04H1/00B D04H13/00B2 D04H13/00B5 F16L59/02F L01D239/02B L01D239/02D L01D239/04 L01D239/04B L01D239/04D L01D239/04L L01D239/04P L01D239/04P6 L01D239/06B20 L01D239/06B31 L01D239/06B32 L01D239/06F L01D239/06F10 L01D239/06F20 L01D239/06F40 L01D239/06F42 L01D239/06F44 L01D239/06F50 L01D239/06H L01D239/10 L01D239/12D L01D239/12H L01D239/12Y L01D265/04 L01D275/10 L29C65/08 L29C66/1122 L29C66/43 L29K313/02 L29L16/00

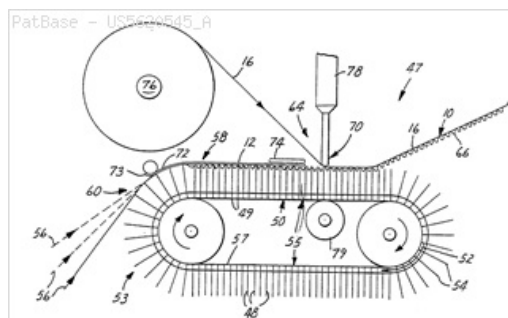
US: 128/206.11 128/206.12 128/206.16 128/206.19 128/206.21 128/206.24 128/206.28 128/206.29 156/205 156/210 156/471 156/474 156/62.2 156/73.1 210/493.1 210/493.5 210/494.1 210/653 210/654 428/113 428/141 428/175 428/182 428/222 428/284 428/298.4 428/303 428/323 428/325 428/35.8 428/359 428/36.1 428/360 428/362 428/364 428/365 428/369 428/409 428/903 442/327 442/340 442/352

JP F-Term: 4D019 4D019/AA01 4D019/AA03 4D019/BA13 4D019/BB03 4D019/BD01 4D019/CA01 4D019/CB06 4F100 4F100/AK07/A 4F100/AT00/B 4F100/BA02 4F100/BA32 4F100/DD12/A 4F100/DD13/A 4F100/DG01/A 4F100/DG15/A 4F100/DG19/A 4F100/EA02 4F100/EC03/2 4F100/EC08/2 4F100/EC18/2 4F100/EJ25/2 4F100/EJ39/1 4F100/EJ39/K 4F100/EJ42/2 4F100/EK03 4F100/EK06 4F100/EK08 4F100/EK11 4F100/GB56 4F100/GB71 4F100/GB72 4F100/GB74 4F100/GB90 4F100/JD02 4F100/JJ02 4F100/JJ03 4F100/JK01 4F100/JK07 4F100/JK17 4F100/YY00/A 4F100/YY00/B 4L047 4L047/AA14 4L047/AB07 4L047/AB08 4L047/AB09 4L047/CA12 4L047/CA18 4L047/CB06 4L047/CC12 4L047/CC16 4L047/EA12

JP F-Index: B01D39/16/A B32B5/08 D04H1/54/P D04H1/54/Q D04H1/558 D04H1/559

Family:

Publication number	Publication date	Application number	Application date
AU199344264 A1	19940210	AU19930044264	19930728
AU199710008 A1	19970619	AU19970010008	19970103
AU199886088 A1	19981203	AU19980086088	19980918
AU672413 B2	19961003	AU19930044264	19930728
AU693049 B2	19980618	AU19970010008	19970103
AU720044 B2	20000525	AU19980086088	19980918
BRPI9303282 A	19940308	BR1993PI03282	19930803
CA2101192 AA	19940205	CA19932101192	19930723
DE69321530 D1	19981119	DE19936021530	19930804
DE69321530 T2	19990401	DE19936021530T	19930804
EP0582286 A1	19940209	EP19930112489	19930804
EP0582286 B1	19981014	EP19930112489	19930804
ES2124273 T3	19990201	ES19930112489T	19930804
JP6192951 A2	19940712	JP19930193778	19930804
KR100269666 B1	20001016	KR19930015061	19930803
KR19940005308 A	19940321	KR19930015061	19930803
KR940005308 A	19940321	KR19930015061	19930803
MX9304612 A1	19940228	MX19930004612	19930730
NO300555 B1	19970616	NO19930002639	19930721
NO302832 B1	19980427	NO19960002659	19960621
NO302833 B1	19980427	NO19960002660	19960621
NO932639 A	19940207	NO19930002639	19930721
NO932639 A0	19930721	NO19930002639	19930721
NO932639 L	19940207	NO19930002639	19930721
NO962659 A	19940207	NO19960002659	19960621
NO962659 A0	19960621	NO19960002659	19960621



NO962659 L	19940207	NO19960002659	19960621
NO962660 A	19940207	NO19960002660	19960621
NO962660 A0	19960621	NO19960002660	19960621
NO962660 L	19940207	NO19960002660	19960621
US5620545 A	19970415	US19950448087	19950523
US5639700 A	19970617	US19950449517	19950523
US5656368 A	19970812	US19950449512	19950523
US5753343 A	19980519	US19930093398	19930719
US5763078 A	19980609	US19960767699	19961217
US5804295 A	19980908	US19970807261	19970228
US5830311 A	19981103	US19950450958	19950523
US5955193 A	19990921	US19970794080	19970204
US5961778 A	19991005	US19980166257	19981005
US6010766 A	20000104	US19990232540	19990118

Priority:

US19920925384 19920804	US19930093398 19930719	NO19930002639 19930721
NO19930002639 19930721	CA19932101192 19930723	AU19930044264 19930728
US19950448087 19950523	US19950450958 19950523	US19950449517 19950523
US19950449512 19950523	US19960767699 19961217	AU19970010008 19970103
US19970794080 19970204	US19970807261 19970228	AU19980086088 19980918
US19980166257 19981005	US19990232540 19990118	

Probable Assignee: 3M CO

Assignee(s): (std): MINNESOTA MINING AND MANUFACTURING COMPANY ; MINNESOTA MINING AND MANUFACTURING COMPANY ; MINNESOTA MINING AND MANUFACTURING CO ; MINNESOTA MINING AND MFG ; INNOVATIVE PROPERTIES CO ; 3M INNOVATIVE PROPERTIES CO ; 3M CO

Assignee(s): 3M INNOVATIVE PROPERTIES COMPANY ; BRAUN DAVID L ; INNOVATIVE PROPERTIES COMPANY ; MINNESOTA MINING AND MANUFACTURING CO ; MINNESOTA MINING AND MFG CO 3M ; MINNESOTA MINING AND MFG CO ; MINNESOTA MINING AND MFG CO SAINT PAUL MINN US ; MINNESOTA MINING AND MFG CO It 3M gt ; STEFFEN JAMES E

Inventor(s): (std): BRAUN DAVID LLOYD ; DAVID L BRAUN ; DAVID LLOYD BRAUN ; STEFFEN JAMES EMIL ; STEFFEN JAMES E ; DEIBITSUDO ROIDO BURAUN ; JIEIMUZU EMIRU SUTEFUAN ; JAMES E STEFFEN ; BRAUN DAVID L ; JAMES EMIL STEFFEN ; VENKATAPATHY RAJU

Inventor(s): STEFFEN JAMES E C O MINNESOTA MINING AND SAINT PAU ; BRAUN DAVID L C O MINNESOTA MI ; STEFFEN JAMES E C O MINNESOTA ; BRAUN DAVID L C O MINNESOTA MINING AND SAINT PAUL

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; SMART AND BIGGAR

Designated states: DE ES FR GB IT NL SE

EP1340615 A3	20090715	EP20030008793	19960607
IN196924 B	00000000	IN1996DE01243	19960606
JP2000513282 T2	20001010	JP19970502073T	19960607
JP2002531294 T2	20020924	JP20000586460T	19991208
KR100266942 B1	20000915	KR19970709185	19971208
KR19990022743 A	19990325	KR19970709185	19960607
MXPA01005833 A1	20030721	MX2001PA05833	19991208
TW467768 B	20011211	TW19990121394	20000518
US2001052385 AA	20011220	US20010898118	20010703
US2002007903 AA	20020124	US20010897683	20010702
US2002157772 AA	20021031	US20020041432	20020108
US2004209057 AA	20041021	US20040843599	20040511
US2008113148 AA	20080515	US20070850631	20070905
US6254712 BA	20010703	US19990256967	19990224
US6336988 BA	20020108	US19970793836	19970806
US6547912 BB	20030415	US20010897683	20010702
US6733870 BB	20040511	US20020041432	20020108
US6773804 BB	20040810	US20010898118	20010703
WO0033975 A2	20000615	WO1999US29151	19991208
WO0033975 A3	20000908	WO1999US29151	19991208
WO9640480 A1	19961219	WO1996US09893	19960607
ZA9604731 A	19970107	ZA19960004731	19960606

Priority:

US19950479665 19950607	EP19960923266 19960607	WO1996US09893 19960607
US19970793836 19970806	US19980111446P 19981208	US19990256967 19990224
AU20000031154 19991208	WO1999US29151 19991208	US20010897683 20010702
US20010898118 20010703	US20020041432 20020108	AU20030203726 20030416
US20040843599 20040511	US20070850631 20070905	

Probable Assignee: AVERY DENNISON CORP

Assignee(s): (std): AVERY DENNISON CORP ; AVERY DENNISON CORP A LEGAL BO ; ENLOW HOWARD H ; YOUNG FREDERICK ; MCCREADY RUSSELL J ; TRUOG KEITH L ; ROYS JOHN E

Assignee(s): MARKEY JOHN J ; AVERY DENNISON CORP PASADENA ; AVERY DENNISON A LEGAL BODY ORGANISED AND EXISTING UNDER LAWS OF STATE OF DELAW CORP

Inventor(s): (std): MARKEY J ; TRUOG L ; ROYS E ; MCCREADY J ; MARKEY J J ; ENLOW H H ; MCCREADY R J ; ROYS J E ; ROYS JOHN E ; TRUOG KEITH L ; MCCREADY RUSSELL J ; ENLOW HOWARD H ; YOUNG FREDERICK ; MARKEY JOHN J ; ENLOW H ; ROYS J ; MCCREADY R ; YOUNG F

Inventor(s): J E ROYS ; R J MCCREADY ; H H ENLOW ; JOHN J MARKEY ; JOHN E ROYS ; RUSSELL J MCCREADY ; FREDERICK YOUNG ; KEITH L TRUOG ; HOWARD H ENLOW ; J J MARKEY ; HOWARD HJORT ENLOW ; KEITH LAWSON TRUOG ; JOHAN EVERETT ROYS ; RJ MCCREADY ; JE ROYS ; HH ENLOW ; JJ MARKEY

Agent(s): FB RICE; FB RICE PTY LTD; FETHERSTONHAUGH AND CO; HESELBERGER JOHANNES; CHRISTIE PARKER AND HALE LLP

Designated states: AL AM AT AU AZ BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CY CZ DE DK EE ES FI FR GA GB GE GR HU IE IL IS IT JP KE KG KP KR KZ LI LK LR LS LT LU LV MC MD MG MK MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SN SZ TG TJ TM TR TT UA UG US UZ VN

Title: REDUCED PRESSURE DROP COALESCER

Abstract: A coalescer includes fibrous media capturing droplets of the dispersed phase, coalescingly growing the droplets into larger drops which further coalesce and grow to form pools that drain, and adapted to reduce pressure drop thereacross by increasing dispersed phase drainage therefrom.

Classifications:

International (IPC 8-9): A24D3/06 B01D17/02 B01D17/022 B01D39/08 B01D39/14 B01D39/16 B01D46/00 B01D46/12 B01D46/52 B01D50/00 B29C47/00 B29C53/56 B29C53/80 D01F6/00 D04H1/04 D04H1/54 D04H1/56 D04H1/724 D04H1/76 D04H3/07 D04H3/16 (Advanced/Invention);

B01D24/30 (Advanced/Non-invention);

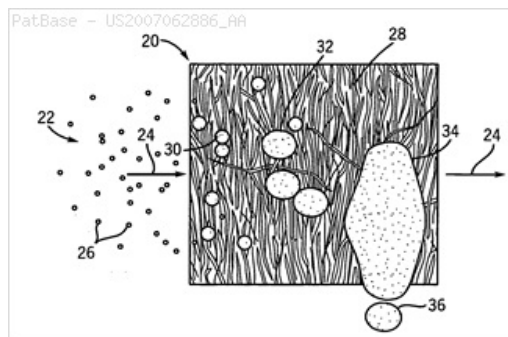
A24D3/00 B01D17/02 B01D39/08 B01D39/16 B01D46/00 B01D46/10 B01D50/00 B29C47/00 D01F6/00 D04H1/00 D04H1/54 D04H3/02 D04H3/16 (Core/Invention)

International (IPC 1-7): B01D17/02

CPC: B01D39/2017 D01D5/082 D01D7/00 Y10S55/19 Y10S55/05 B01D17/045 B01D46/0001 B01D46/003 B01D46/106 B01D46/521 B01D2239/0216 B01D2239/0622 B01D2239/065 B01D2239/0695 B01D2239/1291 B01D2275/10 B01D2275/105 B01D2275/205 B01D2275/206 B01D2275/207 B01D2275/208 B01D2275/30 D04H3/018 D04H3/03 B01D39/1623 B01D2239/10 D01D5/20 B01D17/10

European: B01D17/04H B01D39/16B4 B01D39/20B4 B01D46/00B B01D46/00F20 B01D46/10R B01D46/52F D01D5/08B D01D7/00 L01D239/02D L01D239/06B31 L01D239/06F L01D239/06H2 L01D239/10 L01D239/12Y L01D275/10 L01D275/10W L01D275/20R L01D275/20S L01D275/20T L01D275/20V L01D275/30

US: 131/332 131/341 131/341S 156/167 156/175 210/634 210/738 210/780 210/799 210/800 210/DIG.5 264/167 264/211.12 264/211.14 264/555 55/487 55/498 55/527 55/528 55/528P 55/529 55/DIG.19 55/DIG.5 95/273 95/273S 95/277 95/277P 95/286 95/286S



Family:

Publication number	Publication date	Application number	Application date
BRPI0616182 A2	20130219	BR2006PI16182	20060425
BRPI0616182 B1	20171121	BR2006PI16182	20060425
CN101282773 A	20081008	CN200680034766	20060425
CN101282773 B	20120125	CN200680034766	20060425
CN101310064 A	20081119	CN200680042433	20060823
CN101310064 B	20120523	CN200680042433	20060823
CN101522973 A	20090902	CN200780019127	20070309
CN101522973 B	20110907	CN200780019127	20070309
CN101541391 A	20090923	CN200680052207	20060823
CN101541391 B	20130612	CN200680052207	20060823
DE112006002480 T5	20080807	DE200611002480T	20060425
DE112006002921 T5	20081218	DE200611002921T	20060823
DE112006003707 B4	20170209	DE200611003707T	20060823
DE112006003707 T5	20081211	DE200611003707T	20060823
DE112007000938 T5	20090514	DE200711000938T	20070309
PL220207 B1	20150930	PL20060385875	20060823
PL385875 A1	20090119	PL20060385875	20060823
US2007062886 AA	20070322	US20050230694	20050920
US2007062887 AA	20070322	US20060346679	20060203
US2007107399 AA	20070517	US20050273101	20051114
US2007131235 AA	20070614	US20060442943	20060530
US2011094382 AA	20110428	US20100982259	20101230
US7674425 BB	20100309	US20050273101	20051114
US8114183 BB	20120214	US20060346679	20060203
US8231752 BB	20120731	US20060442943	20060530
US8545707 BB	20131001	US20100982259	20101230
WO07035192 A2	20070329	WO2006US15934	20060425
WO07035192 A3	20071101	WO2006US15934	20060425
WO07061475 A2	20070531	WO2006US32970	20060823
WO07061475 A3	20071122	WO2006US32970	20060823
WO07092049 A2	20070816	WO2006US32947	20060823
WO07092049 A3	20090507	WO2006US32947	20060823
WO07143243 A2	20071213	WO2007US63646	20070309
WO07143243 A3	20090226	WO2007US63646	20070309

Priority:

US20050230694	20050920	US20050273101	20051114	US20060346679	20060203
WO2006US15934	20060425	US20060442943	20060530	WO2006US32947	20060823
WO2006US32970	20060823	WO2007US63646	20070309	US20100982259	20101230

Probable Assignee: CUMMINS FILTRATION INC

Assignee(s): (std): CUMMINS FILTRATION IP INC ; FEDOROWICZ JEFFREY A ; FLEETGUARD ; JANIKOWSKI ERIC A ; FLEETGUARD INC ; HERMAN PETER K ; HOLM CHRISTOPHER E ; JAROSZCZYK TADEUSZ ; GRADON LEON ; HABERKAMP WILLIAM C ; MOY JERALD J ; MICROSPUN PRODUCTS LTD ; FLEETGUARD INC FLEETGUARD INC MICROSPUN PRODUCTS LTD ; FLEETGUARD INC ; SCHWANDT BRIAN W ; REGO ERIC J ; NG KWOK LAM ; VERDEGAN BARRY M ; ZOCH ROGER L ; MUSE ROBERT E ; RUMINSKI WITALIS ; RUMINSKI WITALIS ; ZOCH ROGER I ; BADEAU KURT M ; BADEAU KURT M A ; BODASINSKI JACEK ; FLEETGUARD INC MICROSPUN PRODU

Assignee(s): CUMMINS FILTRATION INC ; FLEETGUARD INC MICROSPUN PRODUCTS LTD

Inventor(s): (std): SCHWANDT BRIAN W ; REGO ERIC J ; JANIKOWSKI ERIC A ; NG KWOK LAM ; VERDEGAN BARRY M ; FEDOROWICZ JEFFREY A ; ZOCH ROGER L ; BADEAU KURT M ; MUSE ROBERT E ; HERMAN PETER K ; HOLM CHRISTOPHER E ; JAROSZCZYK TADEUSZ ; GRADON LEON ; BODASINSKI JACEK ; RUMINSKI WITALIS ; HABERKAMP WILLIAM C ; MOY JERALD J ; RICE MELVIN ; BADEAU KURT M A ; ZOCH ROGER I ; TADEUSZ JAROSZCZYK ; JACEK BODASINSKI ; WITALIS RUMINSKI ; LEON GRADON ; MELVIN RICE ; RUMI NACUTE SKI WITALIS ; GRADO NACUTE LEON ; BODASI NACUTE SKI JACEK ; KWOK LAM NG ; BRIAN W SCHWANDT ; ERIC A JANIKOWSKI ; BARRY M VERDEGAN ; ERIC J REGO

Inventor(s): VERDEGAN BARRY ; REGO ERIC ; SCHWANDT BRIAN ; JANIKOWSKI ERIC ; FEDOROWICZ JEFFREY ; ZOCH ROGER ; BADEAU KURT ; HERMAN PETER ; MUSE ROBERT ; MOY JERALD ; HOLM CHRISTOPHER ; BADEAU KURT MA

Agent(s): ANDRUS SCEALES STARKE AND SAWALL LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR 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 MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: PLEATED FILTRATION MEDIA, MEDIA PACKS, FILTER ELEMENTS, AND METHODS FOR FILTERING FLUIDS

Abstract: Pleated filtration media, media packs, filter elements, and methods for filtering fluid are provided which contain three dimensional flutes in the media surface, the flutes configured to improve filter performance. In certain embodiments the flutes have defined peaks that reduce masking between adjacent pleats, the flutes have ridges along their length to modify flute cross sectional geometry, and/or the flutes provide for volume asymmetry across the media

Classifications:

International (ipc 8-9): B01D24/00 B01D25/26 B01D29/00 B01D29/03 B01D29/07 B01D29/13 B01D35/00 B01D39/14 B01D46/00 B01D46/10 B01D46/24 B01D46/52 F02M35/024 (Advanced/Invention); B01D29/00 (Advanced/Non-invention);

B01D25/00 B01D29/01 B01D39/14 B01D46/52 (Core/Invention)

International (ipc 1-7): B01D25/26 B01D46/52

CPC: B01D25/26 B01D46/522 B01D46/523 B01D46/525 B01D29/031

B01D35/005 B01D46/526 B01D39/14 B01D29/13 B01D46/10

B01D46/2403 B01D2239/069

European: B01D25/26 B01D46/52F2 B01D46/52F4 B01D46/52F6

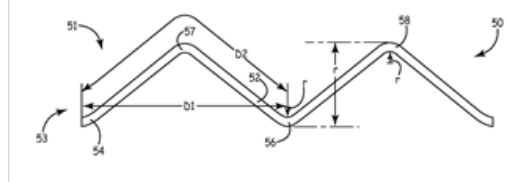
B01D46/52F6S

US: 1/1 210/493.1 210/493.100P 210/493.5

JP F-Term: 4D058 4D058/JA13 4D058/JB39 4D058/KC62 3G056 4D016 4D058/JA32 4D058/SA07 4D116

JP F-Index: B01D46/52/Z B01D29/00/Z B01D29/06/510/Z B01D46/00/302 F02M35/024/501/F

PatBase - US2010078379_AA



Family:

Publication number	Publication date	Application number	Application date
AU2009273893 AA	20100128	AU20090273893	20090724
BRPI0915931 A2	20190409	BR2009PI15931	20090724
CA2731554 AA	20100128	CA20092731554	20090724
CN102159296 A	20110817	CN200980131774	20090724
CN107510990 A	20171226	CN201710616416	20090724
EP2323748 A2	20110525	EP20090790799	20090724
EP2323748 B1	20161123	EP20090790799	20090724
IN00811KN2011 A	20110513	IN2011KN00811	20110222
JP2011528990 T2	20111201	JP20110520223T	20090724
JP2015091584 A2	20150514	JP20140263546	20141225
JP5757868 B2	20150805	JP20110520223T	20090724
JP5932962 B2	20160608	JP20140263546	20141225
MX2011000965 A1	20110404	MX20110000965	20090724
MX355883 B	20180503	MX20140010314	20090724
US2010078379 AA	20100401	US20090508944	20090724
US2015375142 AA	20151231	US20150708993	20150511
US2018214797 AA	20180802	US20170859021	20171229
US9084957 BB	20150721	US20090508944	20090724
US9855519 BB	20180102	US20150708993	20150511
WO10011910 A2	20100128	WO2009US51670	20090724
WO10011910 A3	20100401	WO2009US51670	20090724

Priority:

US20080083785P 20080725	US20080083785 20080725	CN200980131774 20090724
JP20110520223 20090724	US20090508944 20090724	JP20110520223T 20090724
WO2009US51670 20090724	US20150708993 20150511	US20170859021 20171229

Probable Assignee: DONALDSON CO INC

Assignee(s): (std): DONALDSON CO INC ; ROCKLITZ GARY J

Assignee(s): DONALDSON COMPANY INC

Inventor(s): (std): GARY J ROCKLITZ ; ROCKLITZ GARY J

Inventor(s): ROCKLITZ GARY

Agent(s): FREEHILLS PATENT AND TRADE MARK ATTORNEYS; FREEHILLS PATENT ATTORNEYS; HERBERT SMITH FREEHILLS; FPA PATENT ATTORNEYS PTY LTD; OYEN WIGGS GREEN AND MUTALA LLP; EISENFUEHR SPEISER AND PARTNER; EISENFUEHR SPEISER; OKABE HIROSHI; YAMADA TAKUJI; TANAKA MITSUO; INABA KAZUHISA; PAULY DEVRIES SMITH AND DEFFNER LLC; PAULY DANIEL M

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: APPLICATION OF CARBON NANOTUBES OR CARBON PARTICLES ONTO HOLLOW FIBER POLYMERIC MATERIALS

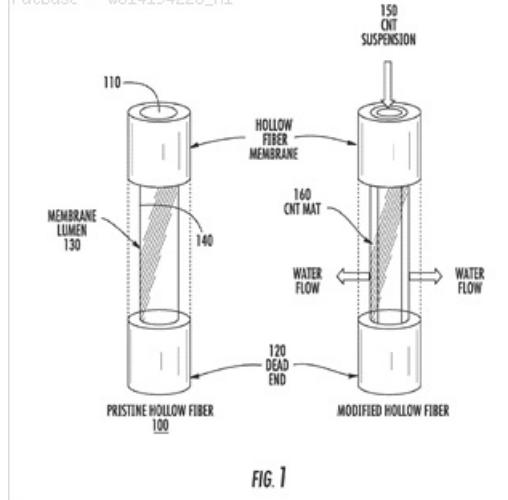
Abstract: Methods for generating carbon mats on the inner surface of hollow fiber membranes are disclosed, along with such modified fiber membranes, and methods of use thereof. A method comprises: providing a plurality of carbon nanotubes and/or carbon particles suspended in a solution to form a suspension; providing one or more polymeric hollow fiber membranes, wherein the one or more polymeric hollow fiber membranes have at least one open end in fluid communication with a lumen, and wherein the lumen defines an inner surface of the one or more polymeric hollow fiber membranes; dispensing the suspension in the at least one open end of the one or more polymeric hollow fiber membranes; and filtering the suspension of carbon nanotubes and/or carbon particles through the one or more polymeric hollow fiber membranes.

Classifications:

International (IPC 8-9): B01D63/02 (Advanced/Invention)

CPC: B01D65/08 B01D67/0088 B01D71/68 C02F1/44 C02F2303/16 C02F2305/08 B01D71/021

PatBase - WO14194228_A1



Family:

Publication number	Publication date	Application number	Application date
WO14194228 A1	20141204	WO2014US40289	20140530

Priority:

US20130829838P 20130531

Probable Assignee: UNIV JOHNS HOPKINS

Assignee(s): (std): UNIV JOHNS HOPKINS

Assignee(s): JOHNS HOPKINS UNIV

Inventor(s): (std): AJMANI GAURAV ; FAIRBROTHER DAVID HOWARD ; HUANG HAIYOU ; JACANGELO JOSEPH G ; LAHR MIRANDA ; SCHWAB KELLOGG J ; TYCHENE BENOIT

Agent(s): CHILDERS JEFFREY W

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: POLISHING A THIN METALLIC SUBSTRATE FOR A SOLAR CELL

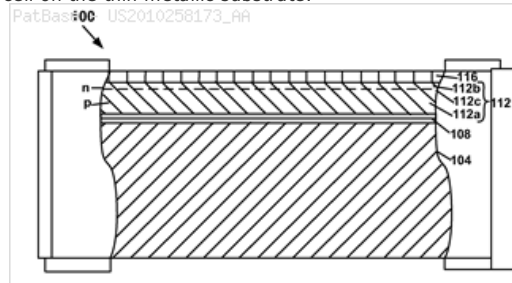
Abstract: A method for fabricating a solar cell. The method includes providing a thin metallic substrate in roll form. The method also includes applying an abrasive grit to a surface of the thin metallic substrate. The method includes mechanical-polishing the surface with the abrasive grit such that the surface is polished to remove at least one defect from the surface. Mechanical-polishing the surface of the thin metallic substrate is by a roll-to-roll polishing process of the surface of the thin metallic substrate. Moreover, the method includes depositing an absorber **layer** of the solar cell on the thin metallic substrate.

Classifications:

International (IPC 8-9): B08B7/00 B24B1/00 B24B55/12 B24B7/06 H01L21/304 H01L31/00 H01L31/042 H01L31/18 (Advanced/Invention) **CPC:** B24B7/06 B24B29/005 B24B29/02 B24B49/14 B24D13/10 H01L31/18 Y02P70/521 H01L31/0392 B24B7/13 B24B37/042 B24B37/105 H01L31/0296 H01L31/0322 H01L31/206 H01L31/03925 H01L31/03928 H01L31/03923 Y02E10/541

European: B24B29/00B B24B29/02 B24B37/04B B24B37/10D B24B49/14 B24B7/06 B24B7/13 B24D13/10 H01L31/0392 H01L31/18 T01L31/0296 T01L31/032C T01L31/20C Y02E10/50

US: 134/6 134/6P 136/256 257/E21.237 257/E21.237S 257/E31.015 257/E31.015S 257/E31.047 257/E31.047S 438/57 438/57S 438/95 438/95S 438/96 438/96S 451/184 451/184S 451/36 451/36S 451/53 451/53S 451/57 451/57S 451/59 451/59S



Family:

Publication number	Publication date	Application number	Application date
US2010258173 AA	20101014	US20090422620	20090413
US2010282276 AA	20101111	US20100842865	20100723
WO10120669 A2	20101021	WO2010US30694	20100412
WO10120669 A3	20110120	WO2010US30694	20100412

Priority:

US20090422620 20090413 US20100842865 20100723

Probable Assignee: MIASOLE

Assignee(s): (std): JULIANO DANIEL R ; KUEPER TIMOTHY ; LAIA JOSEPH ; MARTINSON ROBERT ; SHUFFLEBOTHAM PAUL ; MIASOLE

Assignee(s): PINNACLE VENTURES LLC

Inventor(s): (std): SHUFFLEBOTHAM PAUL ; MARTINSON ROBERT ; KUEPER TIMOTHY ; LAIA JOSEPH ; JULIANO DANIEL R ; CORNEILLE JASON ; SCOTT PHILIP

Agent(s): WEAVER AUSTIN VILLENEUVE AND SAMPSON LLP; AUSTIN JAMES E 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

Title: SURFACE COALESCERS

Abstract: Disclosed are coalescers, systems, and methods for coalescing a mixture of two phases, namely a continuous phase and a dispersed phase. The disclosed coalescers, systems, and methods include or utilize one or more **layers** of media material having a distinct mean pore size and wettability. The disclosed coalescers, systems, and methods are effective for removing the dispersed phase from the mixture.

Classifications:

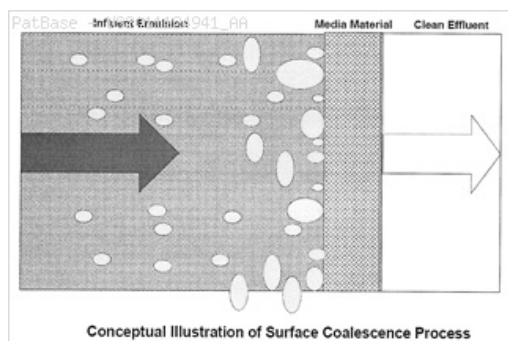
International (IPC 8-9): B01D17/00 B01D17/02 B01D17/022 B01D17/04 B01D27/00 B01D27/06 B01D28/07 B01D29/00 B01D29/07 B01D29/13 B01D29/21 B01D29/56 B01D29/58 B01D35/00 B01D35/02 B01D35/28 B01D36/00 B01D37/00 B01D39/00 B01D46/00 B01D69/02 B01D69/06 B01D69/12 B01D71/48 C07C7/00 C07C7/144 (Advanced/Invention); B01D17/02 B01D29/00 (Advanced/Non-invention)

International (IPC 1-7): B01D46/00

CPC: B01D39/1623 B01D2239/065 B01D17/10 B01D29/21 B01D29/58 B01D29/96 B01D36/003 B01D2201/295 B01D17/045 B01D17/0211 B01D17/0214 B01D29/07 B01D2201/12

European: B01D17/04H B01D17/10 B01D29/21 B01D29/58 B01D29/96 B01D36/00L B01D39/16B4 L01D201/29E4 L01D239/06F

US: 1/1 210/259 210/259S 210/295 210/295S 210/307 210/307S 210/314 210/315 210/315S 210/323.1 210/323.2 210/335 210/337 210/338 210/342 210/348 210/348S 210/435 210/435S 210/437 210/446 210/446S 210/455 210/457 210/483 210/483S 210/487 210/488 210/489 210/489S 210/490 210/490S 210/491 210/492 210/493.1 210/493.2 210/500.1 210/500.100S 210/505 210/505S 210/799 210/799P 210/DIG.5 585/818 585/818P



Conceptual Illustration of Surface Coalescence Process

Family:

Publication number	Publication date	Application number	Application date
BR112012019395 A2	20180320	BR20121119395	20110405
BR112012019483 A2	20180327	BR20121119483	20110405
BRPI0917307 A2	20151117	BR2009PI17307	20091008
CN102170950 A	20110831	CN200980139561	20091008
CN102170950 B	20150408	CN200980139561	20091008
CN102596862 A	20120718	CN201080021992	20100514
CN102596862 B	20150930	CN201080021992	20100514
CN102946966 A	20130227	CN201180031592	20110405
CN102946966 B	20160127	CN201180031592	20110405
CN103025404 A	20130403	CN201180030353	20110405
CN103025404 B	20151125	CN201180030353	20110405
CN105477903 A	20160413	CN201510530266	20100514
CN105477903 B	20171212	CN201510530266	20100514
CN105561650 A	20160511	CN201510982406	20110405
CN105561650 B	20181127	CN201510982406	20110405
DE112009002121 T5	20110929	DE200911002121T	20091008
DE112010002027 T5	20120802	DE201011002027T	20100514
DE112011102094 T5	20130718	DE201111102094T	20110405
DE112011102095 T5	20130718	DE201111102095T	20110405
IN01513KN2011 A	20110805	IN2011KN01513	20110408
IN01646KN2012 A	20160826	IN2012KN01646	20120705
IN02066KN2012 A	20130322	IN2012KN02066	20120806
IN04066KN2011 A	20120608	IN2011KN04066	20110929
IN293487 B	20180309	IN2011KN04066	20110929
IN295644 B	20180413	IN2011KN01513	20110408
RU2013102593 A	20140727	RU20130102593	20110405
RU2013102594 A	20140727	RU20130102594	20110405
RU2557613 C2	20150727	RU20130102593	20110405
RU2561993 C2	20150910	RU20130102594	20110405
RU2654979 C1	20180523	RU20150124044	20110405
US2011124941 AA	20110526	US20100780392	20100514
US2011168621 AA	20110714	US20100820784	20100622
US2011168647 AA	20110714	US20100820791	20100622
US2011233152 AA	20110929	US20080247502	20081008
US2013240460 AA	20130919	US20130875859	20130502
US8360251 BB	20130129	US20080247502	20081008
US8517185 BB	20130827	US20100820784	20100622
US8590712 BB	20131126	US20100820791	20100622
US8678202 BB	20140325	US20130875859	20130502
US9199185 BB	20151201	US20100780392	20100514
WO10042706 A1	20100415	WO2009US59983	20091008
WO10132785 A2	20101118	WO2010US34922	20100514
WO10132785 A3	20120315	WO2010US34922	20100514
WO11162854 A1	20111229	WO2011US31257	20110405
WO11162855 A1	20111229	WO2011US31259	20110405

Priority:

US20080247502 20081008

US20090178738P 20090515

US20090179170P 20090518

US20090179939P 20090520	WO2009US59983 20091008	CN201080021992 20100514
US20100780392 20100514	WO2010US34922 20100514	US20100820791 20100622
US20100820784 20100622	CN201180031592 20110405	WO2011US31259 20110405
WO2011US31257 20110405	US20130875859 20130502	

Probable Assignee: CUMMINS FILTRATION IP INC

Assignee(s): (std): CUMMINS FILTRATION IP ; CUMMINS FILTRATION IP INC ; DAWAR SARU ; HOLM CHRISTOPHER E ; HABERKAMP WILLIAM C ; HABERKAMP WILLIAM ; KAMMINS FIL TREJSHN AJPI INK ; JEUNG SOONDEUK ; KAMMINS FILTREJSHN AJPI INK ; WIECZOREK MARK T ; VERDEGAN BARRY M ; SHULTS TERRY ; SHEUMAKER JONATHAN ; SCHWANDT BRIAN W ; WIECZOREK MARK ; SCHWANDT BRIAN

Inventor(s): (std): SHULTS TERRI ; KHAHERKAMP UILLYAM K ; SHYUMEJKER DZHONATAN ; KHOLM KRISTOFER E ; VERDEGAN BARRY MARK ; HOLM CHRISTOPHER ; HABERKAMP WILLIAM C ; SHEUMAKER JONATHAN ; SCHWANDT BRIAN W ; SHULTS TERRY ; KHOLM KRISTOFER EH ; VECHOREK MARK T ; KHAHERKAMP UILL JAM K ; SH JUMEJKER DZHONATAN ; VERDEGAN BARRI M ; SHVANDT BRAJAN U ; SHUL TS TERRI ; JEUNG SOON DEUK ; BRIAN W SCHWANDT ; VERDEGAN BARRY M ; WIECZOREK MARK T ; DAWAR SARU ; MARK T WIECZOREK ; BARRY M VERDEGAN ; SARU DAWAR ; SCHWANDT BRAIN W ; JEUNG SOONDEUK ; SOONDEUK JEUNG ; SCHWANDT BRIAN ; TERRY SHULTS ; WILLIAM C HABERKAMP ; CHRISTOPHER E HOLM ; JONATHAN SHEUMAKER ; HOLM CHRISTOPHER E ; WIECZOREK MARK ; HABERKAMP WILLIAM

Inventor(s): TERRY T WIECZOREK ; WILLIAM CHABERKAMP ; WIECZOREK TERRY ; BARRY MARK VERDEGAN

Agent(s): OOO YURIDICHESKAYA GORODISSKI I PARTNERY FA; ANDRUS SCEALES STARKE AND SAWALL LLP; FOLEY AND LARDNER LLP; WOZNY THOMAS M ET AL; MCBRIDE M SCOTT 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

Title: REMEDIATION OF SOIL PILES USING CENTRAL EQUIPMENT

Abstract: Methods are provided for remediating contaminated soil. The methods may include collecting contaminated soil at a plurality of treatment sites. The contaminated soil at one or more of the plurality of treatment sites may be at least partially contained. Contaminated soil at the plurality of treatment sites may be treated with equipment in a central treatment facility. Treatment of the plurality of sites may be coordinated such that equipment in the central treatment facility operates substantially continuously as soil is delivered to, treated at, and removed from various treatment sites. The plurality of sites may be treated in a sequential manner, in which soil is delivered to one site, treated at a second site, and removed from a third site substantially simultaneously.

Classifications:

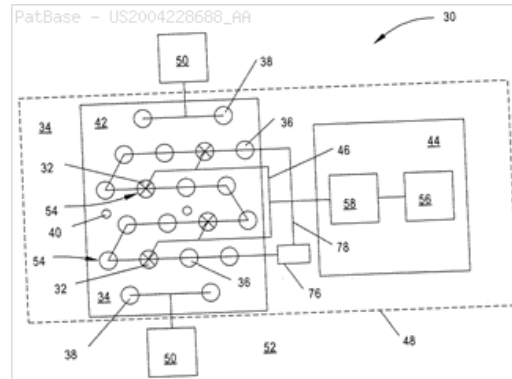
International (IPC 8-9): B09C1/00 B09C1/02 B09C1/06 B09C1/08 B09C1/10 E02D3/11 (Advanced/Invention); B09C1/00 B09C1/10 E02D3/00 (Core/Invention)

International (IPC 1-7): B09B1/00 B09C1/00 B09C1/06 C07D403/06 G21F9/00

CPC: B09C1/00 B09C1/005 B09C1/02 B09C1/06 B09C1/08 B09C1/10 E02D3/11

European: B09C1/00 B09C1/00C B09C1/02 B09C1/06 B09C1/08 B09C1/10 E02D3/11

US: 405/128.1 405/128.15 405/128.35 405/128.4 405/128.55 405/128.6 405/128.8



Family:

Publication number	Publication date	Application number	Application date
BE1015847 AD	20051004	BE20040000007	20040108
CA2565594 AA	20061102	CA20042565594	20040517
CA2565594 C	20100817	CA20042565594	20040517
CA2704832 AA	20041202	CA20042704832	20040517
CA2704832 C	20111025	CA20042704832	20040517
US2004228688 AA	20041118	US20030438768	20030515
US2004228689 AA	20041118	US20030438780	20030515
US6881009 BB	20050419	US20030438768	20030515
US7004678 BB	20060228	US20030438780	20030515
WO04103587 A2	20041202	WO2004US15260	20040517
WO04103587 A3	20050324	WO2004US15260	20040517

Priority:

US20030438768 20030515 US20030438780 20030515 CA20042565594 20040517
CA20042704832 20040517 WO2004US15260 20040517

Probable Assignee: TERRATHERM INC

Assignee(s): (std): BAKER RALPH S ; BIRSCHENK JOHN M ; SHELL OIL CO ; SYNTHON BV ; SHELL INT RESEARCH ; VINEGAR HAROLD J ; UNIV TEXAS ; SYSTHON BV ; TERRATHERM INC ; STEGEMEIER GEORGE L

Assignee(s): BOARD OF REGENTS UNIV TEXAS SYSTEM ; BOARD OF REGENTS UNIVERSITY ; ANTARES CAPITAL LP ; SHELL INT RESEARCH MIJ BV ; BOARD OF REGENTS UNIV OF TEXAS SYSTEMS ; GENERAL ELECTRIC CAPITAL ADMINISTRATIVE AGENT AS CORP ; SHELL OIL COMPANY ; SYNTHON B V ; SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B V ; BOARD OF REGENTS THE UNIVERSITY OF TEXAS SYSTEM ; BOARD OF REGENTS UNIV ; BOARD OF REGENTS UNIV OF TEXAS SYSTEM

Inventor(s): (std): DALEN FRANS VAN ; WESTHEIM RAYMOND JOZEF ; BIRSCHENK JOHN M ; BAKER RALPH S ; VINEGAR HAROLD J ; STEGEMEIER GEORGE L

Inventor(s): VAN DALEN FRANS ; WESTHEIM RAYMOND JOZEF HUBERTUS

Agent(s): OGILVY RENAULT LLP SENCRL SRL; NORTON ROSE OR SENCRL SRL LLP; MEYERTONS HOOD KIVLIN KOWERT AND GOETZEL PC; ERIC B

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 HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: SOIL REMEDIATION USING HEATED VAPORS

Abstract: Methods are provided for remediating contaminated soil. The methods may include collecting contaminated soil at a plurality of treatment sites. The contaminated soil at one or more of the plurality of treatment sites may be at least partially contained. Vapors produced from heating soil at one site may be used to heat contaminated soil at another site. A fluid directed to a portion of heated contaminated soil may accelerate heat transfer through the site of contaminated soil or through another site of contaminated soil. A method may include heating contaminated soil from more than one site at substantially the same time. Heating contaminated soil from more than one site at substantially the same time may include in situ and ex situ treatment at a common location.

Classifications:

International (IPC 8-9): A62D3/00 B09C1/00 B09C1/02 B09C1/06

B09C1/08 B09C1/10 (Advanced/Invention);

A62D3/00 B09C1/00 B09C1/10 (Core/Invention)

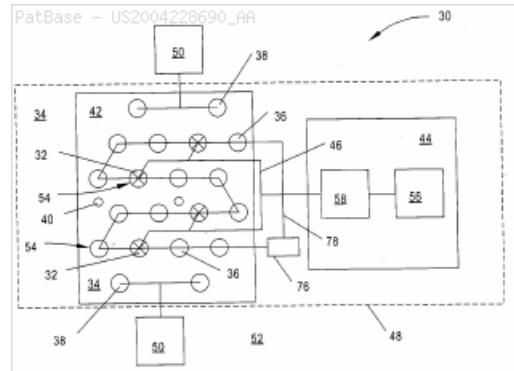
International (IPC 1-7): A62D3/00 B09C1/02 B09C1/06

CPC: B09C1/00 B09C1/005 B09C1/02 B09C1/06 B09C1/08 B09C1/10

European: B09C1/00 B09C1/00C B09C1/02 B09C1/06 B09C1/08

B09C1/10

US: 405/128.45 588/253 588/321 588/405



Family:

Publication number	Publication date	Application number	Application date
US2004228690 AA	20041118	US20030438779	20030515
US7534926 BB	20090519	US20030438779	20030515
WO04103588 A2	20041202	WO2004US15489	20040517
WO04103588 A3	20051006	WO2004US15489	20040517

Priority:

US20030438779 20030515

Probable Assignee: BOARD OF REGENTS UNIV OF TEXAS SYSTEMS

Assignee(s): (std): SHELL CANADA LTD ; STEGEMEIER GEORGE L ; VINEGAR HAROLD J ; SHELL OIL CO ; STEGEMEIER GEORGE LEO ; UNIV TEXAS

Assignee(s): SHELL OIL COMPANY ; BOARD OF REGENTS THE UNIVERSITY OF TEXAS SYSTEM ; BOARD OF REGENTS UNIV ; BOARD OF REGENTS UNIV OF TEXAS SYSTEM ; BOARD OF REGENTS UNIV OF TEXAS SYSTEMS ; SHELL CANADA LIMITED

Inventor(s): (std): STEGEMEIER GEORGE L ; VINEGAR HAROLD J ; STEGEMEIER GEORGE LEO

Agent(s): MEYERTONS HOOD KIVLIN KOWERT AND GOETZEL PC; MEYERTONS ERIC B; ERIC B

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 HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: DEACTIVATION RESISTANT PHOTOCATALYSTS

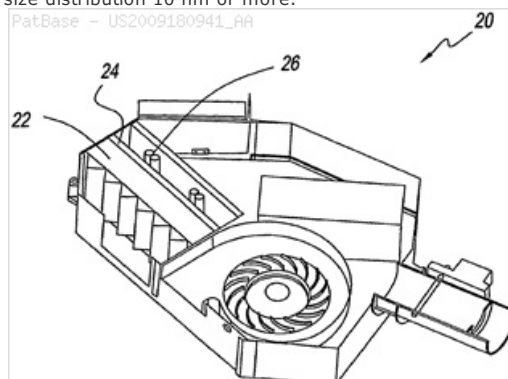
Abstract: The present disclosure relates to a fluid purification device that has a deactivation resistant photocatalyst having nanocrystallites of less than 14 nanometers (nm) in diameter with at least 200 m² surface area/cm³ of skeletal volume in cylindrical pores of 5 nm in diameter or larger, with the mode of the pore size distribution 10 nm or more.

Classifications:

International (IPC 8-9): A61L9/00 B01D B01D36/02 B01D53/00 B01D53/22 B01D53/34 B01D53/38 B01D53/44 B01D53/72 B01D53/86 B01D59/12 B01J B01J19/08 B01J21/00 B01J21/06 B01J23/00 B01J23/10 B01J23/745 B01J25/00 B01J27/24 B01J29/00 B01J35/00 B01J35/10 B01J8/00 B32B3/00 B32B3/26 C01G23/047 C08J C08J3/28 (Advanced/Invention); B01D36/00 B01D53/00 B01D53/38 B01J21/00 B01J23/00 B01J23/10 B01J23/745 B01J35/00 B32B3/26 C08J3/28 (Core/Invention); C08J (Subclass/Invention)

CPC: B01J35/002 B01J35/023 C02F1/32 C02F1/725 C02F2305/10 A61L9/205 B01J23/14 B01J35/006 B01J35/1014 B01J35/108 B82Y30/00 C01G23/047 C01P2002/52 C01P2002/72 C01P2004/62 C01P2004/64 C01P2006/12 C01P2006/14 B01D53/0423 B01D2255/2073 B01D2255/20761 B01D2259/4146 B01D2259/4508 F24F2003/1628 Y10T428/249978 Y10T428/249981 B01D53/885 B01D2255/802 B01D2257/08 B01J21/063 B01J33/00 B01J35/004 B01J37/0225 B01J37/0244

European: A61L9/20P B01D53/04C4 B01D53/88B B01J21/06T B01J23/14 B01J35/00D6 B01J37/02C8 B01J37/02M4 B82Y30/00 C01G23/047 C02F1/32 C02F1/72K L01D255/207D L01D255/207H L01D255/80B L01D257/708 L01D259/414B4B L01D259/45B L01J21/06T L01J33/00 L01J35/00D L01J35/00D8D L01J35/02B L01J35/10A4 L01J35/10D L01J37/02C8 M01P2/52 M01P2/72 M01P4/62 M01P4/64 M01P6/12 M01P6/14 M02F305/10 R24F3/16B11B
US: 210/749 210/749S 422/120 422/120S 422/122 422/129 422/129S 422/186 422/186S 422/187 422/187S 422/4 423/210 423/210P 423/210S 423/245.1 423/245.100P 423/610 428/315.5 428/315.500S 428/316.6 502/100 502/100S 502/200 502/200S 502/232 502/242 502/302 502/302S 502/304 502/304S 502/309 502/309S 502/336 502/336S 502/338 502/338S 502/343 502/343S 502/350 502/350S 502/4 502/4S 502/502 502/515 502/516 502/517 502/518 502/527.24 96/11 977/775 977/776 977/811 977/903

**Family:**

Publication number	Publication date	Application number	Application date
AT539813 E	20120115	AT20070795551T	20070531
CN101495212 A	20090729	CN200780028668	20070531
CN101495228 A	20090729	CN200780028645	20070531
CN101495544 A	20090729	CN200780028506	20070531
CN101495544 B	20131218	CN200780028506	20070531
CN101495545 A	20090729	CN200780028616	20070531
CN101495545 B	20130612	CN200780028616	20070531
DE602007019838 D1	20120308	DE200760019838T	20070531
EP2032252 A2	20090311	EP20070795551	20070531
EP2032252 A4	20091111	EP20070795551	20070531
EP2032252 B1	20120104	EP20070795551	20070531
EP2035492 A1	20090318	EP20070809253	20070531
EP2035492 A4	20120104	EP20070809253	20070531
EP2035493 A1	20090318	EP20070809257	20070531
EP2035493 A4	20120530	EP20070809257	20070531
EP2043761 A2	20090408	EP20070795552	20070531
EP2043761 A4	20111130	EP20070795552	20070531
ES2376661 T3	20120315	ES20070795551T	20070531
HK1134463 A1	20100430	HK20100100195	20100108
HK1134515 A1	20140822	HK20100100075	20100106
HK1134515 A1	20100430	HK20100100075	20100106
HK1134515 B	20140822	HK20100100075	20100106
HK1135997 A1	20100618	HK20100100302	20100112
HK1135997 A1	20140314	HK20100100302	20100112
HK1135997 B	20140314	HK20100100302	20100112
HK1136798 A1	20100709	HK20100100583	20100120
US2009180941 AA	20090716	US20070302626	20070531
US2009185966 AA	20090723	US20070302603	20070531
US2009239742 AA	20090924	US20070302639	20070531
US2011117002 AA	20110519	US20070302651	20070531
US2012003134 AA	20120105	US20110173533	20110630
US7795173 BB	20100914	US20070302639	20070531
US8309484 BB	20121113	US20070302603	20070531
US8513157 BB	20130820	US20110173533	20110630
US8795588 BB	20140805	US20070302651	20070531
WO07143013 A1	20071213	WO2007US12813	20070531
WO07143017 A1	20071213	WO2007US12820	20070531
WO07143017 A8	20090409	WO2007US12820	20070531
WO07143041 A2	20071213	WO2007US12854	20070531
WO07143041 A3	20080410	WO2007US12854	20070531
WO07143042 A2	20071213	WO2007US12855	20070531
WO07143042 A3	20080313	WO2007US12855	20070531

Priority:

US20060809899P	20060601	US20060809995P	20060601	US20060810023P	20060601
US20060810022P	20060601	US20060810024P	20060601	EP20070795551	20070531
WO2007US12813	20070531	WO2007US12820	20070531	US20070302626	20070531
US20070302603	20070531	US20070302639	20070531	US20070302651	20070531
WO2007US12854	20070531	WO2007US12855	20070531	US20080302626	20081126
US20110173533	20110630				

Probable Assignee: CARRIER CORP

Assignee(s): (std): LAMM FOSTER P ; HUGENER CAMPBELL TREESE ; HAY STEPHEN O ; OBEE TIMOTHY N ; PUCINO ALBERT T ; LEMCOFF NORBERTO O ; OLLIS DAVID F ; KRYZMAN MICHAEL A ; SANGIOVANNI JOSEPH J ; VANDERSPURT THOMAS HENRY ; SCHMIDT WAYDE R ; WEI DI ; BRANDES LELAND G ; BRANDES SUSAN D ; CARRIER CORP ; DARDAS ZISSIS A

Assignee(s): CARRIER FARMINGTON CORP

Inventor(s): (std): LAMM FOSTER P ; OBEE TIMOTHY N ; SANGIOVANNI JOSEPH J ; PUCINO ALBERT T ; LEMCOFF NORBERTO O ; OLLIS DAVID F ; KRYZMAN MICHAEL A ; OBEE TIMOTHY ; PUCINO ALBERT ; LEMCOFF NORBERTO ; LAMM FOSTER ; SANGIOVANNI JOSEPH ; HUGENER CAMPBELL TREESE ; HAY STEPHEN O ; HENRY VANDERSPURT THOMAS ; DI WEI ; HAY STEPHEN ; VANDERSPURT THOMAS HENRY ; SCHMIDT WAYDE R ; WEI DI ; SCHMIDT WAYDE ; VANDERSPURT THOMAS ; BRANDES LELAND G ; BRANDES SUSAN ; DARDAS ZISSIS A ; BRANDES SUSAN D ; DARDAS ZISSIS

Inventor(s): BRANDES SUSAN D SOUTH WINDSOR ; SANGIOVANNI JOSEPH J WEST SUFFIELD ; VANDERSPURT THOMAS HENRY GLASTONBURY ; SCHMIDT WAYDE R POMFRET CENTER ; HAY STEPHEN O TOLLAND ; DARDAS ZISSIS A WORCESTER ; HUGENER CAMPBELL TREESE COVENTRY ; LAMM FOSTER P SOUTH WINDSOR ; LEMCOFF NORBERTO O SIMSBURY ; OBEE TIMOTHY N SOUTH WINDSOR ; PUCINO ALBERT T GLASTONBURY

Agent(s): KLUNKER SCHMITT NILSON HIRSCH; TAYLOR ADAM DAVID; TAYLOR ADAM DAVID ET AL; DE ELZABURU ALBERTO; CHINA PATENT AGENT HK LTD; KINNEY AND LANGE PA; CANTOR COLBURN LLP

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

Title: ELEMENT REMOVAL PROCESS AND APPARATUS

Abstract: A process and apparatus for removing elements is described herein.

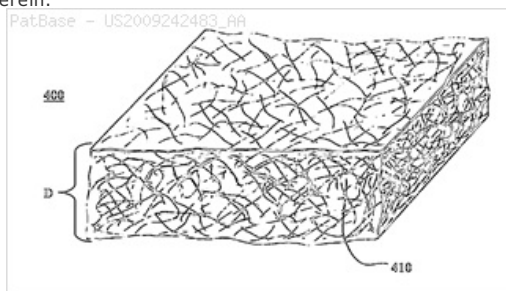
Classifications:

International (IPC 8-9): B01D29/07 B01D39/00 B01D39/02 B01D39/10 B21F27/06 B21F27/12 B32B5/02 C02F1/28 C02F1/42 C02F1/52 C02F1/58 C02F1/66 C02F1/70 C02F103/10 D04H1/00 D04H1/4234 D04H1/4391 D04H1/46 D04H1/498 D04H1/70 E02D17/20 (Advanced/Invention); C02F103/10 (Advanced/Non-invention); B01D39/02 C02F1/42 C02F1/58 (Core/Invention)

CPC: C02F2301/08 B01D2239/02 B01D2239/1233 C02F2101/22 B01D2239/0695 Y10S210/911 Y10S210/912 B01D39/06 C02F1/66 C02F1/705 C02F9/00 C02F2209/06 D04H1/46 D04H1/4234 E02D17/20 B21F27/12 B21F27/18 D04H5/02 C02F1/281 B01J20/02 B01J20/28004 B01J20/28011 B01J20/28023 B01J2220/66 C02F2101/106 C02F2101/20 C02F2103/10

European: B01D39/06 B01J20/02 B01J20/02B12B B01J20/28B12 B01J20/28B4 B01J20/28D8 B21F27/18 C02F1/28B C02F1/70C D04H5/02 L01D239/02 L01D239/12H L01J220/66 M02F1/66 M02F101/10D M02F101/20 M02F101/22 M02F103/10 M02F209/06 M02F301/08 M02F9/00

US: 140/3R 140/5 140/5S 210/151 210/151S 210/198.1 210/198.100S 210/203 210/205 210/209 210/237 210/237S 210/238 210/283 210/283S 210/289 210/289S 210/484 210/494.2 210/494.200S 210/502.1 210/505 210/510.1 210/638 210/662 210/669 210/669S 210/681 210/719 210/722 210/722S 210/726 210/757 210/911 210/912 28/108 405/302.7 405/302.700P



Family:

Publication number	Publication date	Application number	Application date
US2009242483 AA	20091001	US20080257630	20081024
US2009242489 AA	20091001	US20080058609	20080328
US2010147769 AA	20100617	US20090614204	20091106
US2011114563 AA	20110519	US20100903918	20101013
US2011299942 AA	20111208	US20110051318	20110318
US2011309023 AA	20111222	US20110110515	20110518
US2012061324 AA	20120315	US20110222875	20110831
US2015337467 AA	20151126	US20150818909	20150805
US8025800 BB	20110927	US20080058609	20080328
US8101087 BB	20120124	US20080257630	20081024
WO11057186 A2	20110512	WO2010US55823	20101108
WO11057186 A3	20110915	WO2010US55823	20101108
WO12129158 A2	20120927	WO2012US29638	20120319
WO12129158 A3	20130103	WO2012US29638	20120319

Priority:

US20080058609	20080328	US20080257630	20081024	US20090614204	20091106
US20100351226P	20100603	US20100903918	20101013	US20110051318	20110318
US20110110515	20110518	US20110222875	20110831	US20150818909	20150805

Probable Assignee: GLOBAL MATERIAL TECHNOLOGIES INC

Assignee(s): (std): BORN PAUL ; BOUSE STEVEN A ; BOUSE STEVEN ALAN ; GLOBAL MATERIAL TECHNOLOGIES I ; GLOBAL MATERIAL TECHNOLOGIES INC ; GLOBAL MATERIALS TECHNOLOGIES ; KANE TERRENCE P ; LOVETT RAY JOSEPH ; RAK MARK ; KRUPNIK ALEX ; SCHILD KURT H ; GLOBAL MATERIALS TECHNOLOGIES INC ; LOVETT RAYMOND JOSEPH ; SCHILD III KURT H ; SCHILD KURT H III

Assignee(s): PRIVATEBANK AND TRUST CO

Inventor(s): (std): KANE TERRENCE P ; LOVETT RAYMOND JOSEPH ; BOUSE STEVEN ALAN ; LOVETT RAY JOSEPH ; RAK MARK ; BOUSE STEVEN A ; SCHILD KURT H ; KRUPNIK ALEX ; LOVETT RAYMOND J ; SCHILD III KURT H ; BORN PAUL ; SCHILD KURT H III

Agent(s): ROSENBAUM AND ASSOCIATES PC; ROSENBAUM AND SILVERT PC; J PETER; ROSENBAUM DAVID G ET AL

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

Title: ABRASION RESISTANT COATING COMPOSITIONS, METHODS FOR MAKING THEM, AND ARTICLES COATED WITH THEM

Abstract: A coating composition includes a cured base coat of synthetic resin covered by a cured top coat of a silica-containing resin. The top coat resin is applied in an uncured state to the cured base coat. The two resins are thereafter heated to at least 140 degrees Fahrenheit, and thereafter the top coat resin is cured to produce the coating composition. A clean metal surface is coated with the coating composition by applying uncured base coat resin to the metal surface, curing the base coat resin, and thereafter applying the top coat as described above.

Classifications:

International (ipc 8-9): B05D1/36 B05D5/00 B05D7/00 B05D7/24 C08G18/10 C08G18/86 C08L33/14 C09D143/04 C09D175/04 C09D183/00 C09D183/05 C09D183/07 C09D5/00 (Advanced/Invention); B05D1/36 B05D5/00 B05D7/24 C08L33/14 C09D175/04 C09D183/00 C09D183/05 C09D183/07 C09D5/00 (Advanced/Non-invention); B05D1/36 B05D5/00 B05D7/00 B05D7/24 C08G18/00 C09D143/00 C09D175/04 C09D183/00 C09D183/05 C09D183/07 C09D5/00 (Core/Invention); C08L33/00 (Core/Non-invention)

International (ipc 1-7): B05D1/36 B05D3/02 B05D7/14 B05D7/24 B32B15/08 B32B27/40 B32B7/02 C09D175/04 C09D183/00 C09D183/05 C09D183/07 C09D5/00

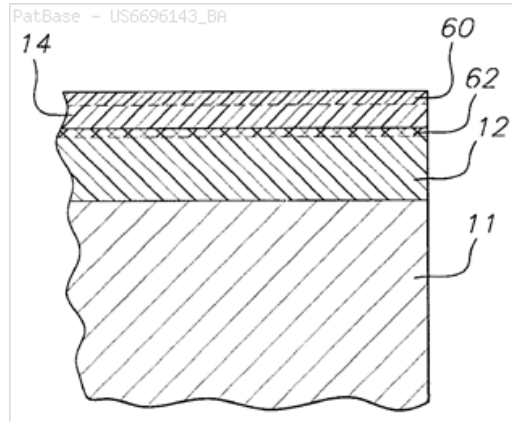
CPC: Y10T428/2495 Y10T428/24967 Y10T428/24975 Y10T428/31598 Y10T428/31605 Y10T428/31667 C08G18/10 C08G18/86 C08L33/14 C09D143/04 B05D7/546

European: B05D7/546 C08G18/10 C08G18/86 C09D143/04 M08L33/14

US: 428/213 428/215 428/216 428/425.5 428/425.8 428/450 428/451

JP F-Term: 4D075 4D075/AE17 4D075/BB26/Z 4D075/BB92/Z 4D075/BB93/Z 4D075/BB95/Z 4D075/CA02 4D075/CA33 4D075/CA48 4D075/DA06 4D075/DB01 4D075/EA07 4D075/EA10 4D075/EA19 4D075/EA21 4D075/EB22 4D075/EB38 4D075/EB52 4D075/EB56 4D075/EC03 4D075/EC37 4D075/EC53 4J038 4J038/CG14/1 4J038/CQ00/1 4J038/DA11/2 4J038/DG00/1 4J038/DG16/1 4J038/DG19/1 4J038/DG26/1 4J038/DL10/1 4J038/HA44/6 4J038/JC31 4J038/KA04 4J038/KA08 4J038/NA11 4J038/PA17 4J038/PC02

JP F-Index: B05D1/36/Z B05D5/00/B B05D7/24/302/T B05D7/24/302/Y C09D175/04 C09D183/00 C09D183/07 C09D5/00/D



Family:

Publication number	Publication date	Application number	Application date
AU200038661 A1	20001016	AU20000038661	20000303
AU200038661 A5	20001016	AU20000038661	20000303
AU778560 B2	20041209	AU20000038661	20000303
BRPI0009360 A	20020219	BR2000PI09360	20000303
CN1198691 C	20050427	CN20008007812	20000303
CN1359315 A	20020717	CN20008007812	20000303
EP1200201 A1	20020502	EP20000917732	20000303
JP2004515558 T2	20040527	JP20000607767T	20000303
KR100848656 B1	20080728	KR20017012202	20000303
KR20020007343 A	20020126	KR20017012202	20000303
US6696143 BA	20040224	US20000534101	20000323
WO0058024 A1	20001005	WO2000US05685	20000303

Priority:

US19990126587P 19990326 US19990147328P 19990805 WO2000US05685 20000303
US20000534101 20000323 WO2000US05685 20010925

Probable Assignee: LAPOINT

Assignee(s): (std): DAVID A LAPOINT ; DOVID A LAPOINT ; LAPOINT ; LAPOINT DAVID A

Assignee(s): LA POINT DAVID ; LA POINT DAVID A

Inventor(s): (std): LAPOINT DAVID A ; LA POINT DAVID A

Inventor(s): DAVID A LAPOINT

Agent(s): FB RICE; FB RICE PTY LTD; TSURUTA JUNICHI; HIGUCHI SOTOJI; ISHIDA TAKASHI; NISHIYAMA MASAYA

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: POWDER DISPENSING AND CLEANING APPARATUS

Abstract: Method and apparatus for controlling dispensing of "dry" powdered compositions particularly carpet cleaning compositions wherein the confined finely divided particles descend in a stream under gravity and have oscillatory movement imparted thereto next before discharge through an orifice leading therefrom so as to agitate, separate and propel the particles therethrough; and in the case of carpet cleaning operations depositing the finely divided discharged particles onto the surface of the fibres in a substantially uniform pattern thereover followed by working same into the fibres through the application thereto of a rotary brush or beater and thereafter recovering the residues by a suitable suction or vacuum unit utilizing a rotary brush or beater and an associated two stage cyclone separator.

Classifications:

International (IPC 8-9): A47L11/03 A47L9/00

A47L9/16 (Advanced/Invention);

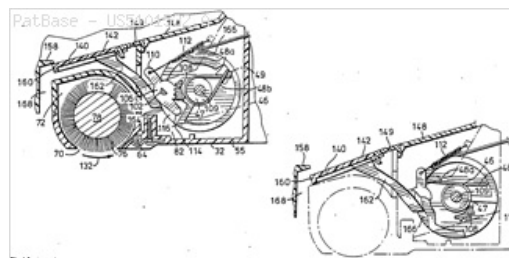
A47L11/00 A47L9/10 (Core/Invention)

International (IPC 1-7): A47L11/03 A47L9/00 A47L9/16

CPC: A47L9/1633 A47L11/03 A47L11/34 A47L11/4041

European: A47L11/03 A47L11/34 A47L11/40F4 A47L9/16C2B

US: 15/320 15/328 15/377 15/50.3 222/199 222/200



Family:

Publication number	Publication date	Application number	Application date
CA1304544 A1	19920707	CA19870536097	19870430
CA1315922 A1	19930413	CA19890614831	19890929
US5101532 A	19920407	US19880291344	19881229
WO8808269 A1	19881103	WO1988GB00344	19880503

Priority:

CA19870536097 19870430 US19880188545 19880429 US19880291344 19881229
CA19890614831 19890929

Probable Assignee: FANTOM TECHNOLOGIES INC

Assignee(s): (std): DYSON JAMES ; IONA APPLIANCES INC ; IONA APPLINACES INC APP IONA I ; NOTETRY LTD

Assignee(s): IONA APPLINACES INC APPAREILS IONA INC ; NOTETRY LIMITED ; IONA APPLIANCES INC APPAREILS IONA INC ; IONA APPLIANCES INC APPAREILS IONA INC A CO OF CAN ; FANTOM TECHNOLOGIES INC ; BANK OF NOVA SCOTIA

Inventor(s): (std): DYSON JAMES ; LABUTE DONALD J

Agent(s): BERESKIN AND PARR

Designated states: AT BE CH DE FR GB IT JP LU NL SE

Title: DECONTAMINATION SYSTEM AND METHOD OF DECONTAMINATION

Abstract: A decontamination system including an absorptive/absorptive activated carbon felt pad saturated with a non-hazardous CWA decontamination solvent as nonspecific means of decontaminating equipment and open-wounds is provided. The entire system preferably includes an absorbent pad and decontamination fluid in a sealed, disposable plastic packet. The system is thus a simple and immediate means of personal decontamination. The decontamination fluid and the absorbent pads of the present invention are non-hazardous, nontoxic, and nonflammable. The system is thus safe, and able to readily meet with FDA approval. The system is small and easily corrected in a field pack or other means and can be safely disposed of after use. The same system is also useable at casualty receiving stations to decontaminate patients and/or equipment. The open-wound decontamination system has the ability to absorb CWA into a non-hazardous fluid, and the ability to adsorb CWA from the fluid onto a solid adsorbent.

Classifications:

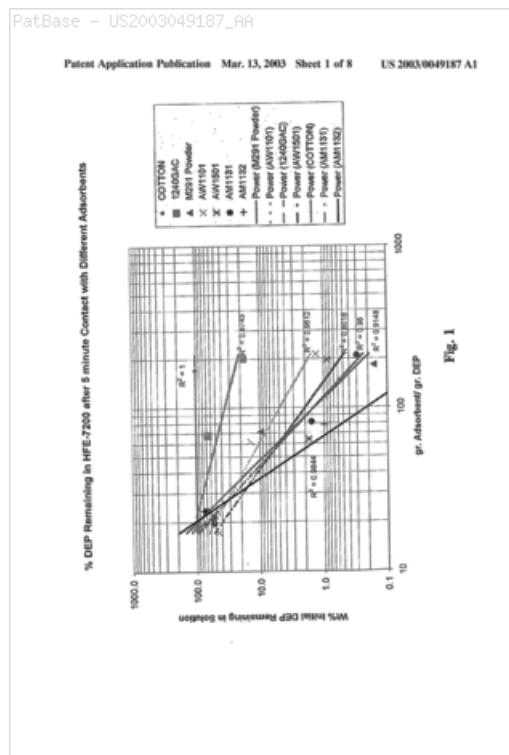
International (IPC 8-9): A01N25/34 A01P1/00 A61L2/00 A61L2/16 A61L2/18 B32B33/00 (Advanced/Invention); A01N25/34 A01P1/00 A61L2/00 A61L2/18 B32B33/00 (Core/Invention)

International (IPC 1-7): A01N1/00 A61L9/00

CPC: Y10T428/24033 A61L2/232 Y10T442/2516 Y10T442/2525 Y10T442/2984 B08B3/04 B08B1/00 Y10T442/2508

European: B08B1/00 B08B3/04

US: 134/42 422/28 422/292 424/411 428/102 442/121 442/122 442/123 442/179

**Family:**

Publication number	Publication date	Application number	Application date
US2003049187 AA	20030313	US20020154428	20020523
US2009010824 AA	20090108	US20060451294	20060612
US2009117165 AA	20090507	US20090349998	20090107
US7494629 BB	20090224	US20060451294	20060612
US7910054 BA	20110322	US20070738489	20070421

Priority:

US20010293016P 20010523 US20020154428 20020523 US20060451294 20060612
 US20070738489 20070421 US20090349998 20090107

Probable Assignee: ARGOS ASSOCIATES INC

Assignee(s): (std): ARGOS ASSOCIATES INC ; ENTROPIC SYSTEMS INC ; KAISER ROBERT

Assignee(s): CALGON CARBON CORP

Inventor(s): (std): KAISER ROBERT

Agent(s): CESARI AND MCKENNA LLP

Title: METHODS, SYSTEMS, AND DEVICES FOR SEPARATING MATERIALS USING MAGNETIC AND FRICTIONAL PROPERTIES

Abstract: A method for separating mixtures of solid materials includes incorporating a ferromagnetic particulate material into a mixture of solid materials and, after the incorporating step, separating the mixture of solid materials into at least two groups based on the magnetic and frictional properties of the different components of the mixture of solid materials. The ferromagnetic particulate material can differentially incorporate into or adhere to different components of the mixture of solid materials. The different components of the mixture have different frictional properties and, after the incorporating step, the different components have different magnetic properties.

Classifications:

International (IPC 8-9): B03C1/00 B03C1/01 B03C1/02 B03C1/08

B03C1/14 B03C1/22 B07C5/00 B07C5/34 (Advanced/Invention);

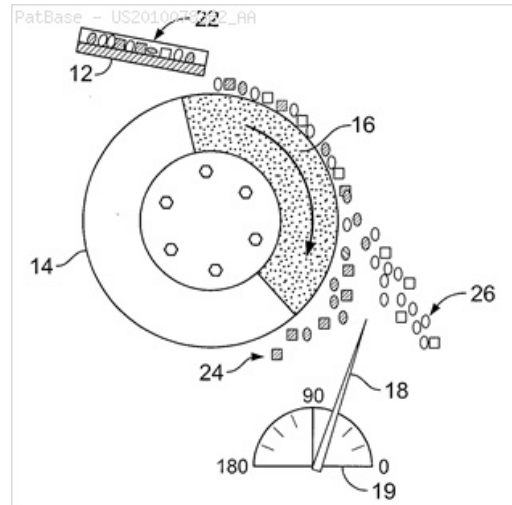
B03C1/005 B03C1/02 B07C5/00 B07C5/34 (Core/Invention)

CPC: B03C1/01 B03C1/08 B03C1/14 B03C1/22

European: B03C1/01 B03C1/08 B03C1/14 B03C1/22

US: 209/214 209/219 209/3.3 209/3.300P 209/631 209/636 209/636S

209/638 209/638S 209/689 209/8 209/8P



Family:

Publication number	Publication date	Application number	Application date
CA2719331 AA	20091008	CA20092719331	20090331
EP2274104 A2	20110119	EP20090728051	20090331
US2010078362 AA	20100401	US20090414838	20090331
US2012067787 AA	20120322	US20110248310	20110929
US8056728 BB	20111115	US20090414838	20090331
WO09124015 A2	20091008	WO2009US38900	20090331
WO09124015 A3	20100114	WO2009US38900	20090331

Priority:

US20080041089P 20080331 US20080044156P 20080411 US20090414838 20090331
WO2009US38900 20090331 US20110248310 20110929

Probable Assignee: MBA POLYMERS INC

Assignee(s): (std): MBA POLYMERS INC ; PEREZ RODRIGUEZ PEDRO ALEJANDR ; PEREZ RODRIGUEZ PEDRO ALEJANDRO ; RAU RON C ; RIISE BRIAN L ; BAEK HYUNG

Inventor(s): (std): BAEK HYUNG ; RAU RON C ; RIISE BRIAN L ; PEREZ RODRIGUEZ PEDRO ALEJANDRO

Agent(s): SCHLEY JAN MALTE; FISH AND RICHARDSON PC; SHIPSIDES GEOFFREY P ET AL

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

Title: Substrate transport apparatus, POD and method

Abstract: A method of using a substrate transport pod is provided, which is suitable for manufacturing semiconductor devices with copper wiring and low dielectric insulating film having dielectric constants of less than 3. The method is based on loading the substrates into a pod from an atmosphere of a first process, and circulating a gaseous atmosphere through interior of the pod in such a way to selectively remove at least one contaminant including moisture, particulate substances or chemical substances, and to expose the substrates to a controlled atmosphere intermittently or continually while the substrates are held in the pod before unloaded from the pod and introduced into a second process. For a pod that is used to house the substrates for the purpose of retaining or transporting, the pod has a pod main body and a door that provides a hermetic sealing, and the pod is made primarily of a material that has moisture absorption factor of less than 0.1 percent, and the pod can contact the substrates directly or indirectly and has a conductive area so as to enable static charges to be guided out of the pod.

Classifications:

International (IPC 8-9): F24F3/16 H01L21/00 H01L21/02 H01L21/673

H01L21/677 (Advanced/Invention);

H01L21/68 (Advanced/Non-invention)

International (IPC 1-7): B01D46/00 B01D50/00 B65B1/04 B65D85/86

B65G1/00 B65G49/00 B65G49/06 B65G49/07 F24F3/16 H01L21/02

H01L21/68

CPC: H01L21/67017 H01L21/67366 H01L21/67379 H01L21/67393

H01L21/67396 H01L21/67772 H01L21/67775

European: H01L21/673K12A H01L21/673K13 H01L21/673K5

H01L21/673K9 H01L21/677D6 H01L21/677D8 H01L21/67S2D

US: 141/98 141/98P 206/710 206/711 454/187 454/192 55/385.1

55/385.100P 55/385.2 55/385.6 55/385.600S 55/418 55/471

JP F-Term: 3L053 3L053/BD02 3L053/BD04 3L080 5F031 5F031/CA02

5F031/DA09 5F031/DA17 5F031/EA14 5F031/EA19 5F031/EA20 5F031/FA01 5F031/FA11 5F031/FA15 5F031/GA36 5F031/JA21

5F031/JA22 5F031/NA02 5F031/NA16 5F031/PA26 5F117 5F131 5F131/AA02 5F131/BA04 5F131/BA05 5F131/BA15 5F131/BA17

5F131/BA33 5F131/BA37 5F131/BA39 5F131/CA12 5F131/CA13 5F131/CA44 5F131/DA05 5F131/DA32 5F131/DA33 5F131/DA37

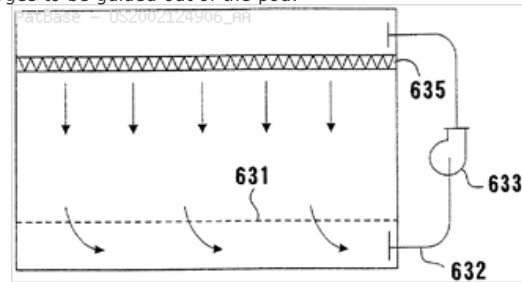
5F131/DC04 5F131/DC06 5F131/DD49 5F131/DD59 5F131/DD67 5F131/DD92 5F131/GA03 5F131/GA14 5F131/GA19 5F131/GA53

5F131/GA54 5F131/GA68 5F131/GA69 5F131/GA73 5F131/GA76 5F131/GA83 5F131/GA84 5F131/GA85 5F131/GA88 5F131/GA92

5F131/GA99 5F131/HA29 5F131/HA37 5F131/JA04 5F131/JA15 5F131/JA27 5F131/JA32 5F131/JA33 5F131/KA05 5F131/KA15

5F131/KA16 5F131/KA52 5F131/KB24 5F131/KB32 5F131/KB33

JP F-Index: F24F3/02 F24F3/16 H01L21/02/D H01L21/68/T



Family:

Publication number	Publication date	Application number	Application date
EP1343202 A1	20030910	EP20010999971	20011203
EP1343202 A4	20090121	EP20010999971	20011203
JP2002261159 A2	20020913	JP20010047404	20010117
JP3939101 B2	20070704	JP20010047404	20010117
KR20020076278 A	20021009	KR20027009932	20011203
TW533174 B	20030521	TW20010129780	20011203
US2002124906 AA	20020912	US20010000304	20011204
US2004187451 AA	20040930	US20040766565	20040129
US6758876 BB	20040706	US20010000304	20011204
WO0247152 A1	20020613	WO2001JP10546	20011203

Priority:

JP20000369333 20001204 JP20000404696 20001225 JP20010047404 20010117
 WO2001JP10546 20011203 US20010000304 20011204 US20040766565 20040129

Probable Assignee: EBARA CORP

Assignee(s): (std): EBARA CORP ; SUZUKI YOKO ; TANAKA AKIRA

Assignee(s): KISHI TAKASHI

Inventor(s): (std): KISHI TAKASHI ; TANAKA AKIRA ; SUZUKI YOKO

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT KR LI LU MC NL PT SE TR

Title: METHOD AND SYSTEMS FOR DISINFECTING ANIMAL BEDDING AND STALLS

Abstract: Animal bedding disinfecting methods and systems are disclosed that facilitate removal of contaminants and pathogens from reusable animal bedding. A disinfecting method includes: preparing soiled animal bedding for disinfecting; disinfecting the soiled animal bedding; and reusing the disinfected animal bedding. A disinfecting system for supplying at least one disinfecting medium to animal bedding includes: a cover configured to create a controlled environment around the animal bedding; and at least one disinfecting medium reservoir associated with the cover configured to supply at least one disinfecting medium to the animal bedding within the controlled environment. A disinfecting system for supplying heat to animal bedding includes a heating cover configured both to create a controlled environment around the animal bedding and to supply heat at a temperature of at least approximately 200 degrees Fahrenheit for a time period of at least approximately 5 minutes to the animal bedding.

Classifications:

International (IPC 8-9): A01K1/00 A01K1/01 A01K1/015 A01K31/00 A01K31/04 (Advanced/Invention);

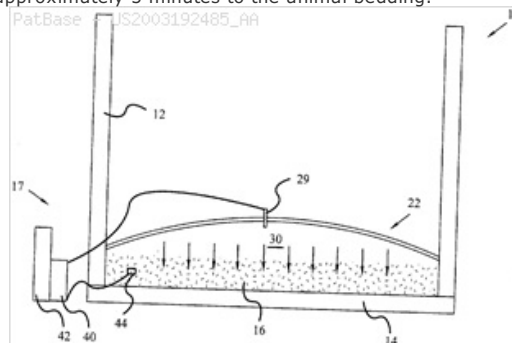
A01K1/00 A01K1/01 A01K1/015 A01K31/00 (Core/Invention)

International (IPC 1-7): A01C A01K0/0 A01K0/00 A01K1/01 A01K1/015 A01K29/00 A01K31/00 A01M13/00 A01N A47C21/04 A47L B01J20/10 B01J20/12 B01J21/16 B01J27/16 B07B4/00 B07B9/02 C04B14/04

CPC: A01K1/0047 A01K31/007 A01K31/04 Y10T428/2443 A01K1/0107 A01K1/015 A01K1/0152

European: A01K1/00D A01K1/015 A01K1/015B A01K1/01B A01K31/00D2 A01K31/04

US: 106/486 119/171 119/173 119/486 119/526 209/133 209/138 209/139.1 209/143 428/150 502/411 502/72 502/8 502/80

**Family:**

Publication number	Publication date	Application number	Application date
AU2003230853 AA	20031027	AU20030230853	20030409
AU2003230853 AH	20031027	AU20030230853	20030409
AU2003234646 AA	20031219	AU20030234646	20030529
AU2003234646 AH	20031219	AU20030234646	20030529
AU2003234708 AA	20031027	AU20030234708	20030409
AU2003234708 AH	20031027	AU20030234708	20030409
AU2003239133 AA	20031027	AU20030239133	20030409
AU2003239133 AH	20090730	AU20030239133	20030409
AU2003241290 AA	20031027	AU20030241290	20030409
AU2003241290 AH	20031027	AU20030241290	20030409
CA2481931 AA	20041008	CA20032481931	20030409
CA2481931 C	20100622	CA20032481931	20030409
MXPA04009905 A1	20050816	MX2004PA09905	20030409
US2003192485 AA	20031016	US20030411017	20030409
US2003192816 AA	20031016	US20030411407	20030409
US2003205205 AA	20031106	US20030411435	20030409
US2003209203 AA	20031113	US20020120858	20020410
US2003222000 AA	20031204	US20020188611	20020702
US6810831 BA	20041102	US20020158676	20020529
US6854421 BB	20050215	US20020120858	20020410
WO03086055 A2	20031023	WO2003US10980	20030409
WO03086055 A3	20050217	WO2003US10980	20030409
WO03086056 A2	20031023	WO2003US10981	20030409
WO03086056 A3	20090618	WO2003US10981	20030409
WO03086070 A2	20031023	WO2003US10982	20030409
WO03086070 A3	20040916	WO2003US10982	20030409
WO03086163 A2	20031023	WO2003US11356	20030409
WO03086163 A3	20040422	WO2003US11356	20030409
WO03101179 A2	20031211	WO2003US16609	20030529
WO03101179 A3	20040318	WO2003US16609	20030529

Priority:

US20020120858	20020410	US20020371783P	20020410	US20020158676	20020529
US20020188611	20020702	US20020431106P	20021204	US20020431140P	20021204
US20020431067P	20021204	US20030411407	20030409	US20030411017	20030409
US20030411435	20030409	WO2003US10981	20030409	WO2003US10982	20030409
WO2003US10980	20030409	WO2003US11356	20030409	WO2003US16609	20030529

Probable Assignee: EQUIDRY BEDDING PRODUCTS LLC

Assignee(s): (std): EQUIDRY BEDDING PRODUCTS LLC ; EQUIDRY BEDDING PRODUCTS LLC S ; EQUIDRY BEDDING PRODUCTS LLC SSSSSSSS ; OPFEL WILLIAM

Assignee(s): DELPHI TECHNOLOGIES INC ; EQUIDRY BEDDING PRODUCTS ; EQUIDRY BEDDING PRODUCTS INC ; EQUIDRY BEDDING PRODUCTS PO BOX

Inventor(s): (std): WILLIAM OPFEL ; OPFEL WILLIAM

Agent(s): MARKS AND CLERK; SCHMEISER OLSEN AND WATTS LLP

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 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 SC 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

Title: METHODS OF REMOVING CONTAMINANTS FROM A HYDROCARBON STREAM BY SWING ADSORPTION AND RELATED APPARATUS AND SYSTEMS

Abstract: A swing adsorption process for removing contaminants from a gaseous feed stream through a combination of a selective adsorbent material containing an effective amount of a non-adsorbent filler, adsorbent contactor design, and adsorption cycle design.

Classifications:

International (IPC 8-9): B01D/26 B01D53/02 B01D53/04 B01D53/047 B01D53/053 B01D53/26 B01D53/62 B01D59/26 B01J20/10 B01J20/18 B01J20/20 B01J20/22 B01J20/28 B01J20/32 C10L3/10 F04B39/10 F16K1/34 F16K1/44 F16K11/00 F16K11/074 F16K11/076 F16K31/04 (Advanced/Invention); B01D53/02 C08F210/02 (Advanced/Non-invention)

International (IPC 1-7): B01J20/10 B01J20/18 B01J20/28

CPC: B01D53/0407 B01D53/047 F04B39/1013 F16K1/44 B01D2253/3425 B01D2253/342 B01J20/10 B01J20/18 B01J20/28 B01D53/02 B01D2257/502 B01D2259/40049 C10L3/104 B01D53/0446 B01D53/0476 B01D2259/4063 F16K11/074 F16K11/076 F16K31/041 B01D53/053 B01D2259/40018 B01D2259/40033 B01D2259/40041 B01D2259/40043 B01D2259/40075 B01D2259/4068 B01D2259/40 F16K1/34 F16K11/00 B01D53/0473 B01D2252/20484 B01D2252/20489 B01D2253/102 B01D2253/104 B01D2253/106 B01D2253/1085 B01D2253/204 B01D2253/25 B01D2253/308 B01D2256/24 B01D2256/245 B01D2257/304 B01D2257/306 B01D2257/308 B01D2257/504 B01J20/20 B01J20/226 B01J20/28042 B01J20/2805 B01J20/28052 B01J20/3204 B01J20/3248 B01J20/3257 Y02C10/08 B01D2259/40005 Y10T156/10 B01D2259/40035 B01D2253/108 C08F210/02 Y10T137/87708 B01D53/0462 B01D2257/302

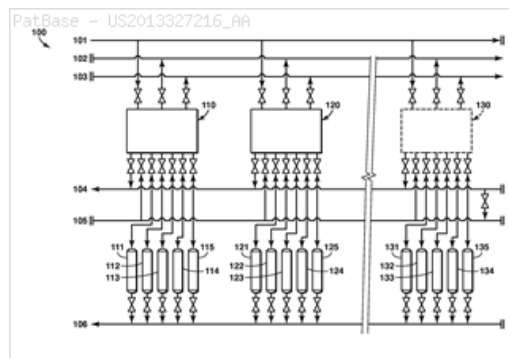
European: B01D53/047R B01D53/04C10 C10L3/10B2D L01D256/24M L01D257/304 L01D257/502 L01D259/406D L01D259/40H4

L01D259/40M10D L01D259/40M12D L01D53/02 L01D53/047 L01D53/047R L01D53/047V L01D53/04T

US: 1/1 137/862 156/305 156/60 251/333 95/100 95/103 95/114 95/136 95/139 95/96 96/108 96/113 96/114 96/115 96/121 96/124 96/129 96/130

JP F-Term: 4D012 4D012/BA01 4D012/CA03 4D012/CA07 4D012/CA20 4D012/CB01 4D012/CB02 4D012/CB14 4D012/CB16 4D012/CD07 4D012/CE01 4D012/CE03 4D012/CF01 4D012/CF05 4D012/CG01 4D012/CG05 4D012/CJ01 4D012/CJ02 4D012/CJ04 4D012/CJ06 4H014 4D012/BA02 4D012/BA03 4D012/CD10 4D012/CK09 4D012/CK10

JP F-Index: B01D53/04/B B01D53/047 C10L3/00/B C10L3/10 B01D53/04/F B01D53/04/110 B01D53/04/220



Family:

Publication number	Publication date	Application number	Application date
AU2012223485 AA	20120907	AU20120223485	20120227
AU2012223485 BB	20160623	AU20120223485	20120227
AU2012223486 AA	20120907	AU20120223486	20120227
AU2012223571 AA	20120907	AU20120223571	20120227
AU2012223571 BB	20160825	AU20120223571	20120227
AU2012259377 AA	20121129	AU20120259377	20120227
AU2012259377 BB	20161201	AU20120259377	20120227
BR112013017622 A2	20161011	BR20131117622	20120227
BR112013018597 A2	20190108	BR20131118597	20120227
CA2824162 AA	20130708	CA20122824162	20120227
CA2824986 AA	20130716	CA20122824986	20120227
CA2824986 C	20170509	CA20122824986	20120227
CA2824991 AA	20130716	CA20122824991	20120227
CA2824991 C	20180220	CA20122824991	20120227
CA2825148 AA	20130717	CA20122825148	20120227
CA2825148 C	20170620	CA20122825148	20120227
CA2842928 AA	20140123	CA20122842928	20120227
CA2990793 AA	20120907	CA20122990793	20120227
CA2990793 C	20190409	CA20122990793	20120227
CN103402606 A	20131120	CN201280011280	20120227
CN103402606 B	20160413	CN201280011280	20120227
CN103429339 A	20131204	CN201280011268	20120227
CN103429339 B	20150610	CN201280011268	20120227
DE602012037827 D1	20171109	DE201260037827T	20120227
DE602012051037 D1	20181011	DE201260051037T	20120227
EA024199 B1	20160831	EA20130091250	20120227
EA026118 B1	20170331	EA20130091257	20120227
EA026681 B1	20170531	EA20130091252	20120227
EA201391249 A1	20140228	EA20130091249	20120227
EA201391250 A1	20140130	EA20130091250	20120227
EA201391252 A1	20140430	EA20130091252	20120227
EA201391257 A1	20140331	EA20130091257	20120227
EA201501140 A1	20160429	EA20150001140	20120227
EP2680948 A2	20140108	EP20120752025	20120227
EP2680948 A4	20150506	EP20120752025	20120227
EP2680949 A1	20140108	EP20120752083	20120227
EP2680949 A4	20150121	EP20120752083	20120227
EP2680949 B1	20170927	EP20120752083	20120227
EP2680954 A1	20140108	EP20120790182	20120227
EP2680954 A4	20150527	EP20120790182	20120227

EP2680954 B1	20180912	EP20120790182	20120227
EP2680963 A1	20140108	EP20120752429	20120227
EP2680963 A4	20140813	EP20120752429	20120227
EP2680963 B1	20190116	EP20120752429	20120227
EP3272408 A1	20180124	EP20170187163	20120227
GC4148 A	20160421	GC2012P020632	20120229
GC6623 A	20171205	GC2012P020631	20120229
GC6867 A	20180108	GC2012P031321	20120229
GC9776 A	20190217	GC2012P020630	20120229
JP2014509558 T2	20140421	JP20130556781T	20120227
JP2014514137 T2	20140619	JP20130556780T	20120227
JP6035553 B2	20161130	JP20130556781T	20120227
JP6143192 B2	20170607	JP20130556780T	20120227
MX2013008387 A1	20130812	MX20130008387	20120227
MX2013008388 A1	20130812	MX20130008388	20120227
MX336393 B	20160118	MX20130008388	20120227
MY163007 A	20170731	MY20130002786	20120227
SG192572 A1	20130930	SG20130053020	20120227
SG192573 A1	20130930	SG20130053145	20120227
US2013327216 AA	20131212	US20120985537	20120227
US2013333571 AA	20131219	US20120976888	20120227
US2013340619 AA	20131226	US20120996429	20120227
US2014013955 AA	20140116	US20120979623	20120227
US2014033919 AA	20140206	US20120984911	20120227
US2014216254 AA	20140807	US20120234098	20120227
US2015276066 AA	20151001	US20150691291	20150420
US2016236135 AA	20160818	US20160141276	20160428
US9017457 BB	20150428	US20120996429	20120227
US9034079 BB	20150519	US20120984911	20120227
US9120049 BB	20150901	US20120976888	20120227
US9168485 BB	20151027	US20120985537	20120227
US9352269 BB	20160531	US20120234098	20120227
US9358493 BB	20160607	US20120979623	20120227
US9593778 BB	20170314	US20150691291	20150420
US10016715 BB	20180710	US20160141276	20160428
WO12118755 A1	20120907	WO2012US26797	20120227
WO12118757 A1	20120907	WO2012US26799	20120227
WO12118758 A1	20120907	WO2012US26801	20120227
WO12118759 A2	20120907	WO2012US26802	20120227
WO12118759 A3	20140417	WO2012US26802	20120227
WO12161826 A1	20121129	WO2012US26804	20120227
WO12161826 A8	20130131	WO2012US26804	20120227
WO12161828 A1	20121129	WO2012US26808	20120227

Priority:

US20110448117P	20110301	US20110448120P	20110301	US20110448121P	20110301
US20110448123P	20110301	US20120594824P	20120203	CA20122824991	20120227
EP20120752083	20120227	EP20120790182	20120227	US20120985537	20120227
US20120976888	20120227	US20120979623	20120227	US20120984911	20120227
US20120234098	20120227	WO2012US26802	20120227	WO2012US26797	20120227
WO2012US26804	20120227	WO2012US26801	20120227	WO2012US26799	20120227
US20120996429	20120227	WO2012US26808	20120227	US20130996429	20130620
US20130979623	20130712	US20150691291	20150420	US20160141276	20160428
CA20182824991	20180116				

Probable Assignee: EXXON MOBIL CORP

Assignee(s): (std): ANDERSON THOMAS N ; BASILE RICHARD J ; DECKAMN HARRY W ; DECKMAN HARRY W ; EXXONMOBIL UPSTREAM RES CO ; EXXONMOBIL UPSTREAM RES COMPNAY ; FREDERICK JEFFREY W ; TAMMERA ROBERT F ; SUNDARAM NARASIMHAN ; HUNTINGTON RICHARD ; JOHNSON ROBERT A ; RAVIKOVITCH PETER I ; KELLEY BRUCE T ; HUNTINGTON RICHARD A ; EXXONMOBILE UPSTREAM RES CO

Assignee(s): EXXONMOBIL UPSTREAM RESEARCH COCORP-URC-SW359P.O. BOX 2189HOUSTONTX77252-2189US ; EXXONMOBIL UPSTREAM RESEARCH CO CORP URC SW359 ; EXXONMOBIL UPSTREAM RESEARCH CO SPRING ; EXXONMOBIL UPSTREAM RESEARCH COMPNAY ; EXXONMOBIL UPSTREAM RESEARCH CO ; EXXONMOBILE UPSTREAM RESEARCH CO ; EXXON MOBIL CORP ; EXXONMOBIL UPSTREAM RESEARCH COMPANY

Inventor(s): (std): ANDERSON THOMAS N ; SUNDARAM NARASIMHAN ; HUNTINGTON RICHARD ; RICHARD J BASILE ; JEFFREY W FREDERICK ; ROBERT F TAMMERA ; HUNTINGTON RICHARD A ; DECKAMN HARRY W ; RAVIKOVITCH PETER I ; KELLEY BRUCE ; ANDERSON THOMAS ; JOHNSON ROBERT ; DECKMAN HARRY ; KELLEY BRUCE T ; RAVIKOVITCH PETER I ; DECKMAN HARRY W ; JOHNSON ROBERT A ; TAMMERA ROBERT F ; BASILE RICHARD J ; FREDERICK JEFFREY W

Inventor(s): ANDERSON THOMAS NUS ; TAMMERA ROBERT FUS ; NARASIMHAN SUNDARAM ; RICHARD HUNTINGTON ; ROBERT N TAMMERA ; DECKAMN HARRY W CLINTON ; JOHNSON ROBERT A YARDLEY ; TAMMERA ROBERT F WARRENTON ; ANDERSON THOMAS N HOUSTON ; BRUCE T KELLEY ; HARRY W DECKMAN ; THOMAS N ANDERSON ; ROBERT A JOHNSON ; PETER I RAVIKOVITCH

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; BORDEN LADNER GERVAIS LLP; UEXKUELL AND STOLBERG PARTNERSCHAFT VON PATENT U RECHTSANWAELTEN MBB; TROCH GENEVIEVE; EXXONMOBIL CHEMICAL EUROPE INC; SAUD M A SHAWWAF LAW OFFICE; INO SARI; KURASAWA ICHIRO; MATSUSHITA MITSURU; DESHIMARU TAKESHI; KUMAKURA YOSHIO; EXXONMOBIL UPSTREAM RESEARCH CO LAW DEPARTMENT; EXXONMOBIL UPSTREAM RESEARCH CO LAW DEPT; TIMMINS STEPHEN ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS

IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY
MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY
SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

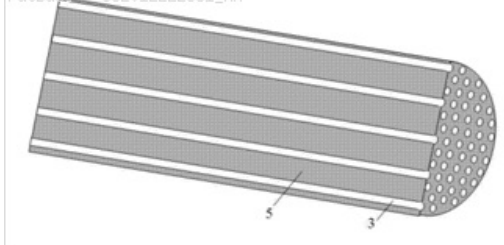
Title: SWING ADSORPTION PROCESSES UTILIZING CONTROLLED ADSORPTION FRONTS

Abstract: A process for reducing the loss of valuable products by improving the overall recovery of a contaminant gas component in swing adsorption processes. The present invention utilizes at least two adsorption beds, in series, with separately controlled cycles to control the adsorption front and optionally to maximize the overall capacity of a swing adsorption process and to improve overall recovery a contaminant gas component from a feed gas mixture.

Classifications:

International (IPC 8-9): A61K31/195 A61K31/216 A61K36/185 A61K36/45 A61K36/48 A61K36/74 A61K39/145 A61K39/155 A61K39/165 A61K45/06 A61K8/97 A61K8/9789 A61P17/00 A61P17/18 A61P25/04 A61P25/24 A61P9/04 A61Q19/00 A61Q19/02 A61Q19/08 B01D53/00 B01D53/02 B01D53/04 B01D53/047 B01D53/14 B01D53/52 B01D53/82 B01J20/10 B01J20/18 B01J20/20 B01J20/22 B01J20/28 B01J20/32 B01J20/34 B32B37/02 B32B37/12 B32B37/14 C01B17/04 C01B17/16 C01B31/20 C01B32/50 C01B39/46 C07C227/04 C07C227/16 C07C229/46 C07C67/313 C07C69/757 C07C7/12 C07C9/04 C07K C07K1/02 C07K1/14 C07K1/16 C07K1/18 C07K1/20 C07K1/22 C07K14/005 C07K14/11 C07K4/02 C10L3/10 C12N C12N7/00 C12N7/01 C12N7/02 C12N7/04 C12N7/06 G01N G01N21/64 G01N27/447 G01N27/72 G01N30/02 G01N30/14 G01N33/68 G01R33/561 G01R33/565 G06Q20/16 G06Q20/32 G06Q30/02 G06Q40/02 G06T1/00 G06T7/00 H01L21/98 H01L23/12 H01L23/31 H01L25/065 H01L25/07 H01L25/10 H01L25/18 (Advanced/Invention); C07C7/12 C07C9/04 (Advanced/Non-invention); H04M3/00 (Core/Invention)

PatBase - US2012222551_AA



CPC: G06T2207/20076 G06T2207/20101 G06T2207/20116 C07C67/313 C07C227/04 H01L25/0657 H01L23/13 H01L23/18 H01L23/3128 H01L23/4334 H01L23/49816 H01L25/0652 H01L25/50 H01L2224/32225 H01L2224/4824 H01L2224/73215 H01L2225/0651 H01L2225/06527 H01L2225/06562 H01L2225/06586 H01L2225/06589 H01L2924/09701 H01L2924/15311 A61Q17/04 A61Q19/00 A61Q19/02 A61Q19/08 G01R33/565 H01L2224/32145 H01L2224/50 H01L2224/06136 B01D53/047 B01D53/0438 B01D53/0462 B01D53/0473 B01D53/526 B01D2252/20431 B01D2252/20436 B01D2252/20489 B01D2253/102 B01D2253/106 B01D2253/108 B01D2253/1085 B01D2253/116 B01D2253/204 B01D2253/25 B01D2253/304 B01D2253/306 B01D2253/311 B01D2253/34 B01D2256/24 B01D2256/245 B01D2257/102 B01D2257/304 B01D2257/504 B01D2257/7022 B01D2259/40022 B01D2259/40052 B01D2259/402 B01D2259/41 B01J20/18 B01J20/186 B01J20/20 B01J20/226 B01J20/28042 B01J20/28057 B01J20/28078 B01J20/3408 B01J20/3416 B01J20/3483 B01J20/3491 B01J2220/42 B01J2220/46 B01J2220/56 C01B17/0408 C01B17/167 C10L3/103 C10L3/104 C10L3/105 Y02C10/08 C07K14/005 C12N7/00 C12N2760/16051 C12N2760/16151 B01J20/28016 B01J20/28019 B01J20/28095 Y10T428/2991 Y02P20/152 A61K8/0212 A61K2800/782 A61Q19/008 A61K31/216 C07C229/46 A61K45/06 C07C69/757 G06T7/149 G06T7/194 G01R33/4824 G01R33/5616 G01R33/56518 G01R33/56554 G01R33/56572 A61K36/14 A61K36/185 A61K36/48 A61K36/74 A61K36/45 A61K2300/00 A61K31/195 C07C227/16 C07C2601/02 C07C2101/02 A61K8/9789 A61K8/022 A61K8/042 A61K8/062 A61K8/97 A61K2800/31 **European:** A61K31/195 A61K45/06 B01D53/047R B01D53/04C8 B01D53/04T C07K14/005 C10L3/10B2B C10L3/10B2D C10L3/10B4 C12N7/00 G01R33/48T2 G01R33/565B G01R33/565J G01R33/565P L01D252/204F L01D253/102 L01D253/108B L01D253/116 L01D253/204 L01D253/340 L01D256/24M L01D257/304 L01D257/504 L01D257/702A L01D53/04C8 M12N760/16051 M12N760/16151 S01R33/561D1

US: 156/62.2 204/463 324/309 423/228 423/230 423/574.1 424/184.1 424/206.1 428/403 435/23 435/235.1 435/236 435/238 435/239 436/87 455/418P 502/401 502/407 502/414 502/416 502/60 502/62 502/78 502/79 514/510 514/531 530/396 560/37 560/42 560/51 705/39S 705/41S 95/100 95/103 95/104 95/106 95/114 95/115 95/136 95/139 95/143 95/90 95/96 95/97 95/98 95/99 96/108 96/152 96/153 96/154

JP F-Term: 4D012 4D012/BA01 4D012/CA03 4D012/CA07 4D012/CA20 4D012/CB16 4D012/CD03 4D012/CD07 4D012/CD10 4D012/CE03 4D012/CF05 4D012/CG01 4D012/CG03 4D012/CG06 4D012/CJ03 4G066 4G066/AA22/C 4G066/AB01/D 4G066/AB06/B 4G066/AB10/B 4G066/AB13/B 4G066/BA22 4G066/BA25 4G066/BA26 4G066/BA36 4G066/BA42 4G066/CA24 4G066/CA35 4G066/DA04 4G066/GA06 4G066/GA14 4G066/GA16 4H014 4D012/BA02 4D012/BA03 4D012/CB14 4G066/AA04/B 4G066/AA61/B 4G066/AB24/B 4G066/AC27/D 4G066/AC28/D 4G066/AE19/C 4G066/BA01 4G066/BA05 4D012/CF03 4D012/CF08 4D012/CF10 4D012/CG05 4G043 4G066/AA61 4G066/BA20 4G066/BA23 4G066/BA38 4G066/FA37 4G066/GA32 4G066/GA33 4G146 4G146/JA02 4G146/JB04 4G146/JC08 4G146/JC18 4G146/JC19 4G146/JC27 4D012/CB01 4D012/CB13 4D012/CD04 4D012/CG02 4G066/AA30/B 4G066/AA62/B 4G066/AD10/B 4G066/GA04 4D012/CE01 4D012/CF04 4D012/CJ01 4D012/CJ02 4D012/CJ05 4D012/CJ07 4G066/AA10/D 4G066/BA24 4G066/CA51 4H006 4H006/AA02 4H006/AD17 4H006/BC51 4H006/BC52 4H006/BD84 4D012/CB17 4D012/CF01 4G066/AA50/B 4G066/AB12/B 4G066/CA27 4G066/DA01 4G066/GA31 4H006/BD53 4H006/BD82 4H006/DA12 4H006/DA25 5F034 5F037 2G045 2G045/AA40 2G063 4B065 4C085 4C085/AA03 4C085/BA55 4C085/BA57 4C085/BA58 4C085/DD32 4C085/DD33 4C085/DD34 4C085/DD35 4C085/DD58 4C085/EE01 4H045 4H045/AA20 4H045/BA10 4H045/CA01 4H045/DA86 4H045/EA31 4H045/EA50 4H045/GA01 4H045/GA25 4D012/CB12 4D012/CJ04 4D012/CJ06 4D012/CK01 4G066/AA04 4G066/AA30 4G066/AA50 4G066/AB24 4G066/AD10 4G066/GA37 4G073 4G073/CZ26 4G073/GA01 4G073/GA40 4G073/UA06 4G073/UB39 4G146/JC07 4G146/JD10 4H006/DA15

JP F-Index: B01D53/02/Z B01D53/04/B B01D53/04/F B01D53/04/G B01D53/04/220 B01D53/04/230 B01D53/047 B01J20/22/A B01J20/34/E B01J20/34/F B01J20/34/H C10L3/00/B C10L3/10 B01D53/04/C B01D53/04/110 B01J20/18/A B01J20/20/A B01J20/28/A B01J20/18/C C01B17/16/N C01B31/20/B C01B32/50 B01J20/10/A B01J20/18/D B01J20/18/E B01J20/20/D B01J20/34/B B01J20/34/D B01J20/18/B B01J20/20/B B01J20/34/A C07C7/12 C07C9/04 H01L23/12/W H01L25/08/E A61K39/145 A61K39/155 A61K39/165 C07K1/20 C07K14/11 C12N7/02 G01N33/02/G G01N33/68 C01B39/46

Family:

Publication number	Publication date	Application number	Application date
AU2012223552 AA	20120907	AU2012223552	20120227
AU2012223552 BB	20160218	AU2012223552	20120227
AU2012223553 AA	20120907	AU2012223553	20120227
AU2012223553 BB	20151126	AU2012223553	20120227
AU2012223554 AA	20120907	AU2012223554	20120227
AU2012223554 BB	20160218	AU2012223554	20120227
AU2012223558 AA	20120907	AU2012223558	20120227
AU2012223558 BB	20160303	AU2012223558	20120227
AU2012223560 AA	20120907	AU2012223560	20120227
AU2012223560 BB	20160414	AU2012223560	20120227
AU2012223563 AA	20120907	AU2012223563	20120227
AU2012223563 BB	20160303	AU2012223563	20120227
AU2012223564 AA	20120907	AU2012223564	20120227
AU2012223564 BB	20160303	AU2012223564	20120227

AU2012245557 AA	20121026	AU20120245557	20120418	
AU2012245557 BB	20150827	AU20120245557	20120418	
BR112013020416 A2	20161018	BR20131120416	20120227	
BR112013020418 A2	20161018	BR20131120418	20120227	
BR112013020763 A2	20161018	BR20131120763	20120227	
BR112013021166 A2	20180626	BR20131121166	20120227	
BR112013025254 A2	20160906	BR20131125254	20120418	
CA2826900 AA	20120907	CA20122826900	20120227	
CA2826900 C	20170502	CA20122826900	20120227	
CA2826907 AA	20130808	CA20122826907	20120227	
CA2826908 AA	20120907	CA20122826908	20120227	
CA2826928 AA	20120907	CA20122826928	20120227	
CA2826987 AA	20120907	CA20122826987	20120227	
CA2826989 AA	20120907	CA20122826989	20120227	
CA2828457 AA	20120907	CA20122828457	20120227	
CA2831974 AA	20130930	CA20122831974	20120418	
CN103502263 A	20140108	CN201280018905	20120418	
CN103620773 A	20140305	CN201280030798	20120419	
CN103620773 B	20160817	CN201280030798	20120419	
CN105395396 A	20160316	CN201510846639	20120423	
CN105395396 B	20180706	CN201510846639	20120423	
DE202012012784 U1	20140313	DE201220012784U	20120423	
DE602012020173 D1	20160818	DE201260020173T	20120227	
EA024198 B1	20160831	EA20130091193	20120227	
EA025315 B1	20161230	EA20130091188	20120227	
EA025315 B8	20170428	EA20130091188	20120227	
EA025720 B1	20170130	EA20130091191	20120227	
EA201391188 A1	20140228	EA20130091188	20120227	
EA201391189 A1	20140228	EA20130091189	20120227	
EA201391190 A1	20140228	EA20130091190	20120227	
EA201391191 A1	20140228	EA20130091191	20120227	
EA201391192 A1	20140228	EA20130091192	20120227	
EA201391193 A1	20140228	EA20130091193	20120227	
EA201391194 A1	20140331	EA20130091194	20120227	
EP2680940 A2	20140108	EP20120707455	20120227	
EP2680941 A1	20140108	EP20120709423	20120227	
EP2680943 A1	20140108	EP20120708461	20120227	
EP2680944 A1	20140108	EP20120710594	20120227	
EP2680944 B1	20160706	EP20120710594	20120227	
EP2680945 A1	20140108	EP20120707456	20120227	
EP2680951 A1	20140108	EP20120708460	20120227	
EP2681705 A2	20140108	EP20120710593	20120227	
EP2699539 A2	20140226	EP20120774505	20120413	
EP2699539 A4	20141001	EP20120774505	20120413	
EP2699539 B1	20190306	EP20120774505	20120413	
EP2699586 A1	20140226	EP20120718003	20120418	
EP2699586 B1	20190306	EP20120718003	20120418	
EP2700098 A1	20140226	EP20120717551	20120419	
GC10003 A	20190313	GC2012P020635	20120229	
HK1194087 A1	20141010	HK20140107486	20140826	
IL228241 A0	20131031	IL20120228241	20120418	
IN08833DN2013 A	20141219	IN2013DN08833	20131010	
JP2014508040 T2	20140403	JP20130556772T	20120227	
JP2014509554 T2	20140421	JP20130556765T	20120227	
JP2014509555 T2	20140421	JP20130556766T	20120227	
JP2014509556 T2	20140421	JP20130556767T	20120227	
JP2014509557 T2	20140421	JP20130556773T	20120227	
JP2014512259 T2	20140522	JP20130556774T	20120227	
JP2014512694 T2	20140522	JP20140506538T	20120419	
JP2014513680 T2	20140605	JP20140506509T	20120418	
JP2014514136 T2	20140619	JP20130556771T	20120227	
JP6033843 B2	20161130	JP20140506538T	20120419	
JP6232373 B2	20171115	JP20140506509T	20120418	
KR20140011338 A	20140128	KR20137024277	20120418	
KR20140028014 A	20140307	KR20137030770	20120419	
RU2013150802 A	20150527	RU20130150802	20120418	
SG192602 A1	20130930	SG20130059019	20120227	
SG192603 A1	20130930	SG20130059027	20120227	
SG192604 A1	20130930	SG20130059035	20120227	
SG192605 A1	20130930	SG20130059050	20120227	
SG192651 A1	20130930	SG20130059928	20120227	
SG192653 A1	20130930	SG20130059969	20120227	
SG192654 A1	20130930	SG20130059977	20120227	
SG193942 A1	20131129	SG20130071782	20120423	
SG194033 A1	20131129	SG20130073531	20120418	
US2012222551 AA	20120906	US20120406083	20120227	

US2012222553 AA	20120906	US20120406118	20120227
US2012222554 AA	20120906	US20120406150	20120227
US2012222555 AA	20120906	US20120406135	20120227
US2012270255 AA	20121025	US20120450026	20120418
US2012308456 AA	20121206	US20120406100	20120227
US2012312163 AA	20121213	US20120406079	20120227
US2014045936 AA	20140213	US20120110660	20120413
US2014111203 AA	20140424	US20120113044	20120423
US2016244403 AA	20160825	US20160145323	20160503
US8673059 BB	20140318	US20120406150	20120227
US8784533 BB	20140722	US20120406079	20120227
US8784534 BB	20140722	US20120406116	20120227
US8784535 BB	20140722	US20120406019	20120227
US8852322 BB	20141007	US20120406135	20120227
US8858683 BB	20141014	US20120406083	20120227
US8940517 BB	20150127	US20120450026	20120418
US9005561 BB	20150414	US20120406100	20120227
US9612307 BB	20170404	US20120113044	20120423
US10207984 BB	20190219	US20160145323	20160503
WO12118736 A2	20120907	WO2012US26741	20120227
WO12118736 A3	20121122	WO2012US26741	20120227
WO12118737 A2	20120907	WO2012US26745	20120227
WO12118737 A3	20121122	WO2012US26745	20120227
WO12118738 A1	20120907	WO2012US26746	20120227
WO12118742 A1	20120907	WO2012US26751	20120227
WO12118744 A1	20120907	WO2012US26753	20120227
WO12118747 A1	20120907	WO2012US26757	20120227
WO12118748 A1	20120907	WO2012US26758	20120227
WO12144957 A1	20121026	WO2012SG00144	20120423
WO12145234 A2	20121026	WO2012US33423	20120413
WO12145234 A3	20121213	WO2012US33423	20120413
WO12145386 A1	20121026	WO2012US34054	20120418
WO12145754 A1	20121026	WO2012US34689	20120423

Priority:

US20110447824P	20110301	US20110447806P	20110301	US20110447812P	20110301
US20110447824P	20110301	US20110447848P	20110301	US20110447869P	20110301
US20110447835P	20110301	US20110447877P	20110301	US20110447835P	20110421
US20110477806P	20110421	US20110477812P	20110421	US20110477869P	20110421
US20110477877P	20110421	US20110477848P	20110421	US20110477835P	20110421
US20110477878P	20110421	US20110306300	20111129	EP20120710594	20120227
US20120406019	20120227	US20120406116	20120227	US20120406150	20120227
US20120406083	20120227	US20120406135	20120227	US20120406100	20120227
US20120406079	20120227	WO2012US26746	20120227	WO2012US26751	20120227
WO2012US26741	20120227	WO2012US26745	20120227	WO2012US26757	20120227
WO2012US26758	20120227	WO2012US26753	20120227	US20120110660	20120413
WO2012US33423	20120413	US20120450026	20120418	WO2012US34054	20120418
WO2012US34196	20120419	CN201280022458	20120423	US20120113044	20120423
WO2012SG00144	20120423	WO2012US34689	20120423	US20130110660	20131008
US20160145323	20160503				

Probable Assignee: OLOGY BIOSERVICES INC

Assignee(s): (std): ANDERSON THOMAS N ; BAXTER HEALTHCARE SA ; BAXTER INT ; DECKMAN HARRY W ; DAVIES HUW M ; CHILDRENS STEVEN R ; CHENNAMADHAVUNI SPANDAN ; DECKMAN HARRY ; BOARD OF TRUSTEES OF UNIV OF ILLINOIS ; CAI JIANFEI ; BAXTER INT INC E BAXTER HEALTHCARE S A ; CHILDERS STEVEN R ; EXXONMOBIL RES AND ENG CO ; KAMAKOTI PREETI ; LETA DANIEL P ; JOHNSON JACK W ; GUPTA RAMESH ; JOHNSON ROBERT A ; DERITES BRUCE ANTHONY ; MARTIN THOMAS J ; DERITES BRUCE A ; MARY KAY INC ; GRANINGER MICHAEL ; KALIWODA MARTIN ; WAKE FOREST UNIV HEALTH SCIENCES ; UNIV WAKE FOREST HEALTH ; UNIV EMORY ; TESSERA INC ; ZHOU XIAOHONG JOE ; UNIV ILLINOIS ; UNIV WAKE FOREST HEALTH SCIENCES ; RAVIKOVITCH PETER I ; UNIV NANYANG TECH ; NGUYEN T N AHN ; ZHANG JUYONG ; ZHENG JIANMIN ; OLOGY BIOSERVICES INC ; WAKE FOREST UNIV HEALTH SERVICES

Assignee(s): NANOTHERAPEUTICS INC ; WAKE FOREST UNIVERSITY HEALTH SCIENCES ; THE BOARD OF TRUSTEES OF THE UNIVERSITY OF ILLINOIS ; NGUYEN TN AHN ; NANYANG TECHNOLOGICAL UNIV ; NANYANG TECHNOLOGICAL UNIVERSITY ; EMORY UNIVERSITY ; MIDCAP FINANCIAL TRUST AGENT AS ; EXXONMOBIL RESEARCH AND ENGINEERING CO ANNANDALE ; EXXON RESEARCH AND ENGINEERING CO ; EXXONMOBIL RESEARCH AND ENGINEERING COMPANY, 1545 ROUTE 22 EAST, P.O. BOX 900, ANNANDALE, NEW JERSEY 08801-0900, USA ; EMORY UNIV ; EXXONMOBIL RESEARCH AND ENGINEERING CO ; EXXONMOBIL RESEARCH AND ENGINEERING COMPANY ; BAXTER INT INC E BAXTER HEALTHCARE SA ; BAXTER INTERNATIONAL INC ; BAXTER INT INCORPORATED ; BAXTER INT INC ; BAXALTA GMBH ; BAXTER HEALTHCARE S A

Inventor(s): (std): JOHNSON ROBERT A ; KAMAKOTI PREETI ; DERITES BRUCE A ; KALIWODA MARTIN ; GRANINGER MICHAEL ; ZHENG JIANMIN ; CAI JIANFEI ; ZHANG JUYONG ; NGUYEN T N AHN ; LETA DANIEL P ; DECKMAN HARRY W ; GUPTA RAMESH ; HARRY W DECKMAN ; JACK W JOHNSON ; PREETI KAMAKOTI ; PETER I RAVIKOVITCH ; DANIEL P LETA ; ZHOU XIAOHONG JOE ; ZOHNI WAEI ; MOHAMMED ILYAS ; CRISP RICHARD DEWITT ; HABA BELGACEM ; CHILDERS STEVEN R ; DECKMAN HARRY ; DERITES BRUCE ANTHONY ; JOHNSON JACK W ; DAVIES HUW M L ; HINES MICHELLE ; FLORENCE TIFFANY ; GAN DAVID ; CHENNAMADHAVUNI SPANDAN ; MARTIN THOMAS J ; CHILDRENS STEVEN R ; DAVIES HUW M ; RAVIKOVITCH PETER I ; ANDERSON THOMAS N

Inventor(s): HARRY W DECKMAN ; RAMESH GUPTA ; THOMAS N ANDERSON ; ROBERT A JOHNSON ; NGUYEN TN AHN ; MARTIN KALIWODA ; MICHAEL GRANINGER

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; CULLENS PATENT AND TRADE MARK ATTORNEYS; PETER MAXWELL AND ASSOCIATES; MAXWELLS PATENT AND TRADE MARK ATTORNEYS PTY LTD; CULLENS PTY LTD; BORDEN LADNER GERVAIS LLP; SIM AND

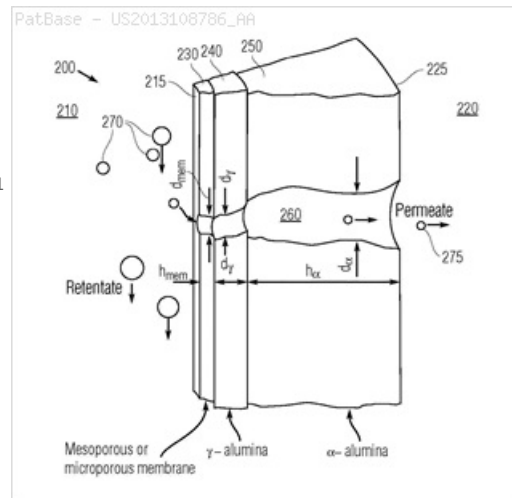
MCBURNEY; AIRD AND MCBURNEY LP; MARESCHAL ANNE; LAU SARAH JANE; COLES ANDREA BIRGIT;
HOFFMANN EITLE; GRUND MARTIN; CLARK JANE ANNE; SAUD M A SHAWWAF LAW OFFICE; KONGWORLD IP
LAW LTD; TAMURA YASUO; SAMEJIMA MUTSUMI; GONJOU KEIICHI; YOSHIDA TAMAKI; ARAI EIICHI;
FUJITA TAKASHI; TANAKA NATSUGO; FUJII AI; HIRAKI YUSUKE; MATSUTOYA YUKO; OHNO SEIJI; BRUCE M;
DAVID M; MARSHALL GERSTEIN AND BORUN LLP; ANDREW T; MALCOLM D; MCDONNELL BOEHNEN HULBERT
AND BERGHOFF LLP; EMORY PATENT GROUP; PURWIN PAUL E ET AL; WEISBERG DAVID M ET AL; WATKIN
TIMOTHY LAWRENCE HARVEY; MASON JAMES C ET AL; JANULIS LYNN L ET AL; MEHTA HERSH H
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY
CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS
IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY
MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY
SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: METHOD TO PRODUCE PARTICULATE FILTER

Abstract: A method is provided for producing a particulate filter to pass through select permeate particles in a fluid medium from inflow to outflow **regions** while restraining reticulate particles. The method includes providing an aluminum oxide substrate; disposing a sol-gel membrane onto the substrate to form a tiered filtration unit; drying the filtration unit; and calcinating the filtration unit

Classifications:

International (IPC 8-9): A61K33/40 A61L2/18 A62D3/00 B01D71/04 B05D1/00 B05D3/02 B05D5/00 C01B15/00 C01B15/10 C11D1/66 C11D1/72 C11D1/75 C11D1/825 C11D1/88 C11D9/42 (Advanced/Invention); A61K33/40 A61L2/18 A62D3/00 C01B15/00 C11D1/66 C11D1/72 C11D1/75 C11D1/825 C11D1/88 C11D9/04 (Core/Invention)
CPC: B05D5/00 A62D3/30 A62D3/38 A62D2101/02 B01F17/0021 B01F17/0042 B01F17/0085 C11D1/72 C11D1/88 C11D1/94 C11D17/0021
European: A62D3/30 A62D3/38 B01F17/00E B01F17/00K B01F17/00Z C11D1/94 C11D17/00B3M K62D101/02 M11D1/72 M11D1/88
US: 210/500.21 210/500.25 210/650 210/651 252/186.25 252/186.26 252/186.27 252/186.42 252/186.43 422/28 422/29 427/203 427/243 427/244 427/394 427/397.7 510/309 510/310 510/375 510/421 510/433 510/483 510/503 516/53 516/67 588/313 588/318 588/320



Family:

Publication number	Publication date	Application number	Application date
US2013108786 AA	20130502	US20120691651	20121130
US7718594 BA	20100518	US20070973847	20071010
US7829520 BA	20101109	US20100798171	20100310
US8652572 BB	20140218	US20120691651	20121130
USH2273 H1	20121204	US20100804605	20100630

Priority:

US20060854461P 20061011 US20070973847 20071010 US20100798171 20100310
US20100804605 20100630 US20120691651 20121130

Probable Assignee: NAVY US GOV SEC OF

Assignee(s): (std): SECRETARY OF NAVY UNITED STATE GOVERNMENT REPRESENTED BY AS ; SECRETARY OF THE NAVY UNITED STATE GOVERNMENT AS REPRESENTED BY THE ; NECHITAILO NICHOLAS V ; US NAVY ; UNITED STATE GOVERNMENT REPRESENTED BY SECRETARY OF NAVY AS ; UNITED STATE GOVERNMENT AS REPRESENTED BY THE SECRETARY OF THE NAVY

Assignee(s): NAVY US GOV SEC OF ; THE UNITED STATES OF AMERICA AS REPRESENTED BY THE SECRETARY OF THE NAVY ; SEC OF NAVY US GOV ; SECRETARY OF NAVY AS US GOV ; SECRETARY OF THE NAVY UNITED STATE GOVERNMENT AS REPRESENTED BY THE ; SECRETARY OF NAVY US GOV AS ; SECRETARY OF NAVY UNITED STATE GOVERNMENT AS REPRESENTED BY

Inventor(s): (std): HODGE RICHARD C ; LAWSON GLENN E ; BROWN JERRY S ; NECHITAILO NICHOLAS V

Agent(s): GERHARD W ; OSCAR A

Title: ADSORPTIVE DUCT FOR **CONTAMINANT REMOVAL**, AND METHODS

Abstract: A duct for passage of air therethrough; one particular use for the duct is as a passage for intake air for a vehicle engine. The duct has an interior, adsorptive **region** that is adapted to remove contaminants from the air stream passing therethrough. The adsorptive **region** includes adsorptive material such as carbon (usually activated carbon), activated alumina, zeolites, metal oxides or ion exchange resin. The duct inhibits diffusion of uncombusted gasoline back through the duct from the engine, after the engine has been shut off.

Classifications:

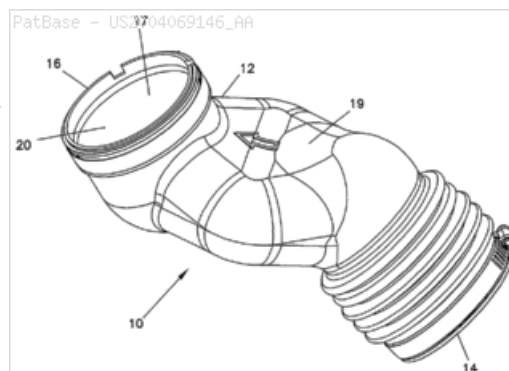
International (IPC 8-9): B01D53/04 (Advanced/Invention);
B01D53/04 (Core/Invention)

International (IPC 1-7): B01D53/02

CPC: Y10S55/05 B01D53/02 B01D53/0415 B01D2253/102 B01D2253/104
B01D2253/108 B01D2253/1124 B01D2253/206 B01D2253/304
B01D2253/306 B01D2257/2045 B01D2257/304 B01D2257/406
B01D2257/702 B01D2257/708 B01D2258/01 B01D2258/0216
B01D2258/0225 B01D2259/4508 B01D2259/4516 B01D2259/4566

European: B01D53/02 B01D53/04C2 L01D253/102 L01D253/104
L01D253/108 L01D253/112D L01D253/206 L01D253/304 L01D253/306
L01D257/204C L01D257/304 L01D257/406 L01D257/702 L01D257/708
L01D258/01 L01D258/02B L01D258/02C L01D259/45B L01D259/45F
L01D259/45V

US: 123/519 55/385.3 55/DIG.5 96/108 96/108P 96/153 96/154



Family:

Publication number	Publication date	Application number	Application date
US2004069146 AA	20040415	US20030632057	20030731
US2005005770 AA	20050113	US20040839600	20040504
US6997977 BB	20060214	US20040839600	20040504

Priority:

US20020400106P 20020731 US20030632057 20030731 US20040839600 20040504

Probable Assignee: DONALDSON CO INC

Assignee(s): (std): DING LEFEI ; DONALDSON CO INC ; FLAGSTAD JORDAN SPENCER ; JORIMAN JON DENNIS ; CARTER STEVEN ALAN ; DALLAS ANDREW JAMES

Assignee(s): DONALDSON COMPANY INC

Inventor(s): (std): CARTER STEVEN ALAN ; DALLAS ANDREW JAMES ; DING LEFEI ; FLAGSTAD JORDAN SPENCER ; JORIMAN JON DENNIS

Inventor(s): CARTER STEVEN ; JORIMAN JON ; FLAGSTAD JORDAN ; DALLAS ANDREW

Agent(s): MERCHANT AND GOULD PC

Title: BREATHABLE CHEMBIO PROTECTION FABRIC WITH CARBON NANOTUBE PHYSICAL PATHOGEN BARRIER

Abstract: A fabric for use in chemical and biological (CB) protective garments includes at least one felt **layer** having from 25 percent to 100 percent carbon nanotube (CNT) **fibers** as a breathable physical barrier against toxic chemical droplets and/or pathogens. The felt **layers** are cleaned and consolidated into a mechanically competent sheet which can form adhesive seams having lapshear greater than the sheet itself. An additional supporting **layer** can be included. The supporting **layer** can be a wicking **layer** which is permeable with a chlorinated or otherwise chemically active solution to establish a reactive chemical barrier, the solution being dispensed on demand from a portable container. Embodiments include a second **layer** of CNT or of another backing fabric, sandwiching the wicking **layer** therebetween. Impermeable fluoropolymer seams can divide the fabric into a plurality of CNT/wicking cells. A **layer** of activated charcoal and/or halamine-forming hydantoin can be included for persistent reactive chemical protection.

Classifications:

International (IPC 8-9): A01N25/00 A01N25/10 A01N25/34 A01N43/50 A01N43/90 A01N55/00 A01N59/00 A01N59/08 A01P1/00 A01P3/00 A41D13/00 A41D13/002 A41D13/12 A41D19/015 A61L2/232 A61L31/04 A61L31/16 A62B17/00 A62D5/00 B05D1/28 B05D3/00 B05D3/12 B29C70/22 B32B33/00 B32B37/00 B32B5/26 B82Y30/00 C07D233/72 D03D1/00 D03D11/00 D03D15/00 D04H1/4242 D04H1/4391 D04H11/00 D04H13/00 D04H3/00 D06B1/02 D06B1/12 D06M13/352 D06M15/643 D06M16/00 G21F3/02 (Advanced/Invention);

A41D31/00 B82Y30/00 B82Y40/00 D06M101/06 (Advanced/Non-invention)

CPC: D06M16/00 D06M23/06 D06M2101/06 B32B2305/18 D06C3/06

A61L31/048 A61L31/16 A61L2300/106 C07D233/72 Y10S977/742

Y10S977/75 Y10S977/752 B32B33/00 A62D5/00 B32B2305/28

B32B2307/7145 B32B2307/724 B32B2571/00 B82Y30/00 D04H1/4242

D04H1/4391 Y10T442/60 Y10T442/608 Y10T442/659 Y10T428/24355

Y10T428/31971 Y10T442/2525 A01N25/34 A01N59/00 A61L2/232

A61L2202/26 A01N35/02 A61L2/18 D06L1/12 A41D31/305

European: A62D5/00 B32B33/00 B82Y30/00 C07D233/72 D04H1/4242

D04H1/4391 K41D31/00C14L L32B305/28 L32B307/714B L32B307/724

L32B571/00

US: 156/281 156/281S 2/455 2/456 2/457 28/169 424/402 424/404 424/404P 424/405 427/2.31 427/290 427/290S 427/428.01

428/141 428/219 428/532 428/85 428/85P 442/123 442/327 442/327S 442/334 442/381 514/389 514/389S 977/742 977/742S

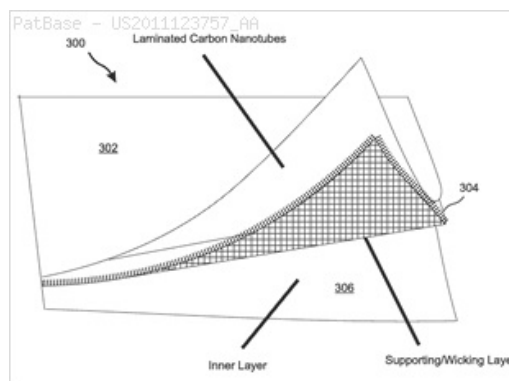
977/750 977/752 977/890 977/890S

JP F-Term: 4H011 4H011/AA02 4H011/BA01 4H011/BB09 4H011/BB18 4H011/BC19 4H011/BC22 4H011/DA10 4H011/DC10

4H011/DH06 4H011/DH10 4L033 4L033/AA02 4L033/AB05 4L033/AB06 4L033/AC10 4L033/BA56

JP F-Index: A01N25/10 A01N25/34/B A01N43/50/R A01N43/90/105 A01N55/00/B A01N59/00/Z A01N59/08/A A01P3/00

D06M13/352



Family:

Publication number	Publication date	Application number	Application date
AU2012279471 AA	20130110	AU20120279471	20120628
BR112013033751 A2	20170207	BR20131133751	20120628
DE602012054425 D1	20181227	DE201260054425T	20120628
EP2501247 A2	20120926	EP20100832280	20101119
EP2501247 A4	20170118	EP20100832280	20101119
EP2630290 A2	20130828	EP20120807327	20120628
EP2630290 A4	20150408	EP20120807327	20120628
EP2630290 B1	20181205	EP20120807327	20120628
IN10258CN2013 A	20150227	IN2013CN10258	20131224
JP2014520970 T2	20140825	JP20140518544T	20120628
US2011123757 AA	20110526	US20110986252	20110107
US2012219609 AA	20120830	US20120468295	20120510
US2012295063 AA	20121122	US20120507432	20120628
US8809210 BB	20140819	US20120507432	20120628
US8987150 BB	20150324	US20110986252	20110107
US9028853 BB	20150512	US20120468295	20120510
WO11063261 A2	20110526	WO2010US57477	20101119
WO11063261 A3	20111020	WO2010US57477	20101119
WO11063261 A4	20111229	WO2010US57477	20101119
WO13006203 A2	20130110	WO2012US00301	20120628
WO13006203 A3	20130411	WO2012US00301	20120628

Priority:

US20090262949P 20091120	US20100293791P 20100111	US20100310389P 20100304
US20100354588P 20100614	US20100370529P 20100804	WO2010US57477 20101119
US20110986252 20110107	US20110503985P 20110701	US20120468295 20120510
EP20120807327 20120628	US20120507432 20120628	WO2012US00301 20120628

Probable Assignee: WARWICK MILLS INC

Assignee(s): (std): HOWLAND CHARLES A ; WARWICK MILLS INC ; WARWICK MILLS INC

Assignee(s): WARWICK MILLS INC NEW IPSWICH

Inventor(s): (std): CHARLES A HOWLAND ; HOWLAND CHARLES A

Inventor(s): HOWLAND CHARLES A TEMPLE

Agent(s): PATENT ATTORNEY SERVICES; BECK AND ROESSIG EUROPEAN PATENT ATTORNEYS; LOVEN KEITH JAMES; TOKKYO GYOMUHOJIN MEISEI INT PATENT FIRM; MAINE CERNOTA AND RARDIN; BURUM DOUGLAS P ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY

MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY
SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: GRAVITY FLOW CARBON BLOCK FILTER

Abstract: A gravity flow carbon block filter comprising approximately 20-90 wt percent activated carbon particles having a mean particle size in the range of approximately 90-220 mum, and approximately 10-50 wt percent low melt index polymeric material. The low melt index polymeric material can have a melt index less than 1.0 g/10 min or greater than 1.0 g/10 min and a mean particle size in the range of approximately 20-150 mum.

Classifications:

International (ipc 8-9): B01D24/00 B01D27/02 B01D29/52 B01D35/00 B01D37/00 B01D39/02 B01D39/14 B01D39/16 B01D39/20 B01D46/00 B01D63/14 B01D71/02 (Advanced/Invention); B01D24/00 (Advanced/Non-invention); B01D24/00 B01D27/00 B01D35/00 B01D37/00 B01D39/02 B01D39/14 B01D39/16 B01D39/20 B01D46/00 B01D63/14 B01D71/00 (Core/Invention)

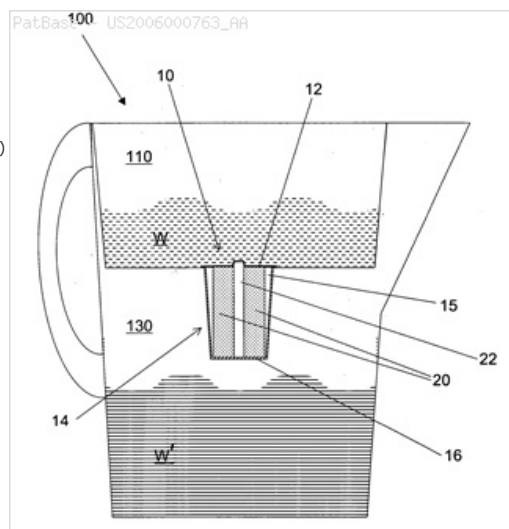
International (ipc 1-7): B01D39/20

CPC: B01D2239/04 B01D2239/0421 B01D2239/0428 B01D2239/1241 C02F1/003 C02F1/283 C02F2101/36 C02F2201/003 C02F2201/006 C02F2307/04 B01D29/35 B01D29/52 B01D39/2065 B01D29/33 B01D39/2062 B01D2201/043 B01D2201/46 B01D2239/0407 B01D2239/086 B01D2239/125 C02F1/281 C02F1/288 C02F1/42

European: B01D29/33 B01D39/20F2B B01D39/20F4 C02F1/00D4 L01D201/04P L01D201/46 L01D239/04 L01D239/04B L01D239/04D1 L01D239/04D2 L01D239/08D L01D239/12K L01D239/12M M02F1/28B M02F1/28D M02F1/28L M02F1/42 M02F101/36 M02F201/00D2 M02F201/00D8 M02F307/04

US: 210/257.1 210/257.100S 210/266 210/282 210/283 210/291 210/291S 210/294 210/294S 210/323.1 210/323.100S 210/464 210/474 210/477 210/477S 210/483 210/483S 210/486 210/496 210/496S 210/501 210/501S 210/502.1 210/502.100S 210/510.1 210/510.100S 210/790 210/800 210/806 210/806S D23/209

Locarno class: 23/01

**Family:**

Publication number	Publication date	Application number	Application date
CN101534922 A	20090916	CN200780042936	20070920
EP2076324 A2	20090708	EP20070842910	20070920
IN01400KN2009 A	20090529	IN2009KN01400	20090416
KR20090059162 A	20090610	KR20097008008	20090420
US2006000763 AA	20060105	US20040881517	20040630
US2008110820 AA	20080515	US20070927372	20071029
US2008223797 AA	20080918	US20070858765	20070920
US2009001011 AA	20090101	US20080207284	20080909
US2011073551 AA	20110331	US20100748372	20100326
US8167141 BB	20120501	US20080207284	20080909
USD612906 S1	20100330	US20090334384F	20090325
USD614259 S1	20100420	US20090334385F	20090325
USD615149 S1	20100504	US20090334382F	20090325
USD615150 S1	20100504	US20090334388F	20090325
USD617869 S1	20100615	US20090334390F	20090325
USD633595 S1	20110301	US20100360990F	20100504
USD645538 S1	20110920	US20100363827F	20100615
USD647595 S1	20111025	US20110386504F	20110301
WO08036844 A2	20080327	WO2007US79077	20070920
WO08036844 A3	20080605	WO2007US79077	20070920
WO08036844 B1	20080731	WO2007US79077	20070920
WO10111692 A2	20100930	WO2010US28975	20100326
WO10111692 A3	20110113	WO2010US28975	20100326

Priority:

US20040881517	20040630	US20060846162P	20060920	US20070858765	20070920
WO2007US79077	20070920	US20070927372	20071029	US20080207284	20080909
US20090334384F	20090325	US20090334385F	20090325	US20090334382F	20090325
US20090334388F	20090325	US20090334390F	20090325	US20090163768P	20090326
US20100748372	20100326	US20100360990F	20100504	US20100363827F	20100615
US20110386504F	20110301				

Probable Assignee: OMNIPURE

Assignee(s): (std): KNIPMEYER ELIZABETH L ; KNIPMEYER ELIZABETH LOUISE ; LYNCH TONI L ; RINKER EDWARD B ; TIPTON ALEX ; SAASKI BRUCE D ; OMNIPURE FILTER COMPANY INC ; REID ROGER P ; BRITA LP ; CHAN RUTH W ; OMNIPURE FILTER CO INC

Assignee(s): CLOROX CO ; OMNIPURE FILTER CO ; OMNIPURE

Inventor(s): (std): REID ROGER P ; KNIPMEYER ELIZABETH LOUISE ; SAASKI BRUCE D ; TIPTON ALEX ; CHAN RUTH W ; LYNCH TONI L ; RINKER EDWARD B ; KNIPMEYER ELIZABETH L

Inventor(s): RINKER EDWARD ; CHAN RUTH ; LYNCH TONI ; SAASKI BRUCE ; REID ROGER

Agent(s): GEE STEVEN WILLIAM ; THE CLOROX COMPANY ; CLOROX CO ; PEDERSEN AND CO PLLC ; STACY H ; KEN J ; BARBARA S ; PEDERSEN KEN J ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LR 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 multi-layer article of manufacture includes an intermediate layer of a water-swellaable colloidal clay, such as bentonite, sandwiched between two layers of flexible sheet or fabric material wherein the two flexible layers of sheet or fabric material are structurally interconnected through the intermediate clay layer, such as by needle punching, after lubrication of the clay with a liquid, such as water, to interconnect fibers of one fabric layer to the other fabric layer at spaced locations over essentially the entire inner surface areas of both sheet or fabric material layers.

Pat.Base - US5174231 A

U.S. Patent Dec. 29, 1992 Sheet 1 of 2 5,174,231

FIG. 1 is a perspective view of a rectangular, multi-layered material. The top surface is indicated by reference numeral 10 and has a stippled texture. The cross-section shows several layers: 12 (top layer), 14, 16, 18, 20, 22, and 24 (bottom layer). The layers are separated by thin lines, suggesting a laminated structure.

European: B09B1/00 E02B3/12C E02D31/00B2

442/35 442/383 442/386 442/388 442/417 442/60 52/169.1 52/309.11 52/309.13 52/309.14 55/522 55/528 55/DIG.9

JP F-Index: B32B5/02/Z B32B5/16 E02D3/00/102 D04H5/02 E02D31/02 E02D5/18 E04B1/64/A D04H1/48/C D04H1/488

Publication number	Publication date	Application number	Application date
AT132930 E	19960115	AT19910304688T	19910523
AT168431 E	19980815	AT19910304687T	19910523
AT174987 E	19990115	AT19930305662T	19930719
AU199175991 A1	19920625	AU19910075991	19910426
AU199175992 A1	19920625	AU19910075992	19910426
AU199341350 A1	19930909	AU19930041350	19930618
AU632684 B2	19930107	AU19910075991	19910426
AU640773 B2	19930902	AU19910075992	19910426
AU659316 B2	19950511	AU19930041350	19930618
BRPI9103267 A	19920804	BR1991PI03267	19910730
BRPI9103305 A	19920804	BR1991PI03305	19910801
CA2041081 AA	19920618	CA19912041081	19910424
CA2041081 C	19980929	CA19912041081	19910424
CA2041167 AA	19920618	CA19912041167	19910424
CA2041167 C	19980811	CA19912041167	19910424

CA2100100 AA	19940617	CA19932100100	19930708
CA2100100 C	20051122	CA19932100100	19930708
DE69116332 D1	19960222	DE19916016332T	19910523
DE69116332 T2	19960905	DE19916016332T	19910523
DE69129793 D1	19980820	DE19916029793	19910523
DE69129793 T2	19990408	DE19916029793T	19910523
DE69129793 T3	20020829	DE19916029793T	19910523
DE69322756 D1	19990204	DE19936022756	19930719
DE69322756 T2	19990506	DE19936022756T	19930719
DK0491453 T3	19990201	DK19910304687T	19910523
DK0491453 T4	20020617	DK19910304687T	19910523
EP0491453 A1	19920624	EP19910304687	19910523
EP0491453 B1	19980715	EP19910304687	19910523
EP0491453 B2	20020522	EP19910304687	19910523
EP0491454 A1	19920624	EP19910304688	19910523
EP0491454 B1	19960110	EP19910304688	19910523
EP0606700 A1	19940720	EP19930305662	19930719
EP0606700 B1	19981223	EP19930305662	19930719
ES2132191 T3	19990816	ES19930305662T	19930719
FI100901 B	19980313	FI19910002897	19910614
FI103428 B	19990630	FI19910002898	19910614
FI912897 A	19920618	FI19910002897	19910614
FI912897 A0	19910614	FI19910002897	19910614
FI912898 A	19920618	FI19910002898	19910614
FI912898 A0	19910614	FI19910002898	19910614
HK1012688 A1	20000623	HK19980113784	19981216
HK1013319 A1	20000519	HK19980114514	19981221
HK187496 A	19961018	HK19960001874	19961010
IE912068 A1	19920617	IE19910002068	19910617
IE912069 A1	19920617	IE19910002069	19910617
JP2049044 C3	19960425	JP19910239392	19910919
JP2562274 B2	19961211	JP19930278003	19931108
JP2647580 B2	19970827	JP19910239398	19910919
JP4247113 A2	19920903	JP19910239398	19910919
JP4293825 A2	19921019	JP19910239392	19910919
JP6240571 A2	19940830	JP19930278003	19931108
JP7081281 B4	19950830	JP19910239392	19910919
KR0161689 B1	19990115	KR19910011662	19910710
KR100161689 B1	19990115	KR19910011662	19910710
KR19920011705 A	19920724	KR19910011662	19910710
KR19920012602 A	19920727	KR19910011965	19910713
MX9100093 A1	19920810	MX19910000093	19910705
MX9100097 A1	19920810	MX19910000097	19910705
NO315982 B1	20031124	NO19910002317	19910614
NO912316 A	19920618	NO19910002316	19910614
NO912316 A0	19910614	NO19910002316	19910614
NO912316 L	19920618	NO19910002316	19910614
NO912317 A	19920618	NO19910002317	19910614
NO912317 A0	19910614	NO19910002317	19910614
NO912317 L	19920618	NO19910002317	19910614
NZ238550 A	19930326	NZ19910238550	19910614
NZ238551 A	19930727	NZ19910238551	19910614
PT98253 A	19930930	PT19910098253	19910708
PT98253 B	19990129	PT19910098253	19910708
PT98254 A	19930930	PT19910098254	19910708
PT98254 B	19990129	PT19910098254	19910708
US5174231 A	19921229	US19900628497	19901217
US5237945 A	19930824	US19910677005	19910402
US5346565 A	19940913	US19920986112	19921204
US5346566 A	19940913	US19920990988	19921216
US5389166 A	19950214	US19920990989	19921216
ZA9104645 A	19930224	ZA19910004645	19910618
ZA9104647 A	19930224	ZA19910004647	19910618

Priority:

US19900628497 19901217	US19910677005 19910402	US19910677055 19910402
CA19912041081 19910424	CA19912041167 19910424	CA19912041167 19910424
CA19912041081 19910424	AU19910075992 19910426	US19920986112 19921204
US19920990988 19921216	US19920990989 19921216	CA19932100100 19930708
CA19932100100 19930708		

Probable Assignee: AMCOL INT

Assignee(s): (std) ELECTRO MATERIALS ; AMCOL INT CORP ; AMERICAN COLLOID CO

Assignee(s): ANKORU INTERN CORP ; AMCOL INT CORP ARLINGTON HEIGHTS ILL US ; AMCOL INT CORP ARLINGTON HEIGHTS ; AMCOL INT ; AMCOL INT A DELAWARE CORP ; ELECTRO MATERIALS CORP OF AMERICA MAMARONECK N Y ; AMERICAN COLLOID CO A DE CORP ; ELECTRO MATERIALS CORP OF AMERICA MAMARONECK N Y US ; AMERICAN COLLOID CO A CORP OF DE ; AMERICAN COLLOID CO A DELAWARE CORP ; WHITE ALEC W ; ELECTRO MATERIALS CORP OF AMERICA MAMARONECK NY

Inventor(s): (std): ALEC W WHITE ; ARETSUKU DABURIYUU HOWAITO ; WHITE ALEC W
Inventor(s): WHITE ALEC W ILLINOIS 60194 US ; ARETSUKU DABURYUU HOWAITO
Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; FETHERSTONHAUGH AND CO
Designated states: AT BE CH DE DK ES FR GB IT LI LU NL SE