

1) Family number: 63864288 (US2018112289A)

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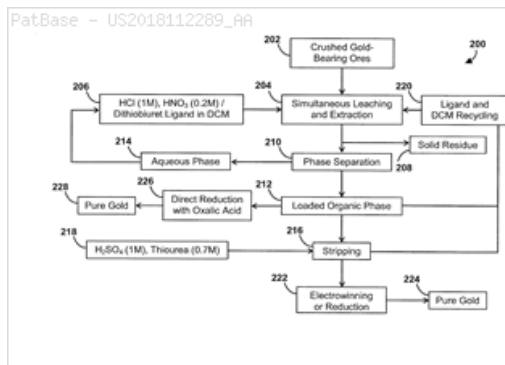
Title: METHODS FOR SELECTIVE LEACHING AND EXTRACTION OF PRECIOUS METALS IN ORGANIC SOLVENTS

Abstract: The present application relates to methods for leaching and extraction of precious metals. For example, the present application relates to methods of leaching gold, palladium and/or platinum from a substance comprising gold, palladium and/or platinum (such as a gold-containing ore or a platinum group metal (PGM) concentrate) using an organic solvent that is water-miscible or partially water-miscible.

Classifications:

International (IPC 8-9): B01D11/00 C07C335/26 C07D207/06 C07D211/16 C07D295/215 C22B1/00 C22B11/00 C22B3/00 C22B3/04 C22B3/06 C22B3/08 C22B3/10 C22B3/16 C22B3/26 C22B3/34 C22B3/44 C25C1/20 C25C7/06 (Advanced/Invention); C22B11/00 (Advanced/Non-invention)

CPC: Y02P10/234 C22B3/44 C22B11/04 C22B3/0005 C22B3/06 C22B3/16 C22B1/00 C07C335/26 C25C7/06 C07D207/06 C07D295/215 C07D211/16 C25C1/20



Family:

Publication number	Publication date	Application number	Application date
CA2983350 AA	20171020	CA20162983350	20160421
CA2983353 AA	20171020	CA20162983353	20160421
CN108026608 A	20180511	CN201680036516	20160421
EP3286346 A1	20180228	EP20160782430	20160421
EP3286346 A4	20190116	EP20160782430	20160421
IN201717040510 A	20180105	IN201717040510	20171114
JP2018513281 T2	20180524	JP20170555706T	20160421
US2018112289 AA	20180426	US20160568230	20160421
US2018142322 AA	20180524	US20160568245	20160421
WO16168930 A1	20161027	WO2016CA50459	20160421
WO16168933 A1	20161027	WO2016CA50463	20160421

Priority:

US20150150513P 20150421 US20150152066P 20150424 WO2016CA50459 20160421
WO2016CA50463 20160421 US20160568230 20160421 US20160568245 20160421

Probable Assignee: UNIV SASKATCHEWAN

Assignee(s): (std): UNIV OF SASKATCHEWAN ; UNIV SASKATCHEWAN

Assignee(s): FOLEY STEPHEN ; MORADI LOGHMAN ; OF SASKATCHEWAN UNIV ; SALIMI HIWA

Inventor(s): (std): FOLEY STEPHEN ; MORADI LOGHMAN ; SALIMI HIWA

Agent(s): BERESKIN AND PARR LLP SENCRL SRL; D YOUNG AND CO LLP; ASAMURA PATENT OFFICE PC

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 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

2) Family number: 51709649 (US2014369905A)

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Title: METHOD FOR PREPARING SOLID RUTHENIUM NITROSYL NITRATE

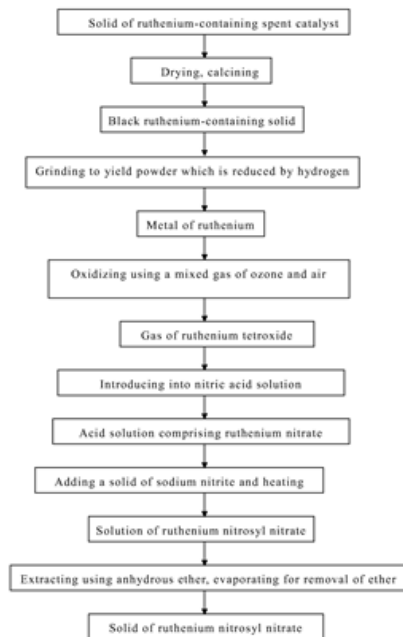
Abstract: A method for preparing solid ruthenium nitrosyl nitrate, including: 1) drying a ruthenium-containing spent catalyst, and calcining the spent catalyst, and cooling to room temperature, whereby yielding a ruthenium-containing solid; 2) grinding the ruthenium-containing solid to yield a powder, introducing the powder to a fluidized bed reactor, aerating the fluidized bed reactor with nitrogen or an inert gas, charging hydrogen, whereby yielding ruthenium metal; 3) contacting a mixed gas of ozone and air with the ruthenium metal, whereby yielding gaseous ruthenium tetroxide; 4) introducing the gaseous ruthenium tetroxide into a three-stage absorption plant, whereby yielding an acid solution including ruthenium nitrate; 5) adding a solid of sodium nitrite to the acid solution, stirring, and heating a resulting solution, whereby yielding a solution of ruthenium nitrosyl nitrate; and 6) extracting the solution of ruthenium nitrosyl nitrate with anhydrous ether.

Classifications:

International (IPC 8-9): B01J38/00 B01J38/10 B01J38/20 B01J38/60 B01J38/68 B09B B09B3/00 C01B21/48 C01G C01G55/00 C22B1/00 C22B3/00 C22B7/00 H04W16/02 H04W24/10 H04W36/00 (Advanced/Invention); B09B3/00 C01G55/00 (Core/Invention)

CPC: C01P2006/80 C22B7/009 C22B1/005 C22B11/048 Y02P10/214 Y02P10/234 A62D3/36 A62D3/40 B09B3/0016 B09B3/0083 C01G55/00

US: 423/22 502/325

**Family:**

Publication number	Publication date	Application number	Application date
AP201407986 A0	20141031	AP20140007986	20130304
AU2013230403 AA	20130912	AU20130230403	20130304
AU2013230403 BB	20151008	AU20130230403	20130304
BR112014021848 A2	20170620	BR20141121848	20130304
BR112014021848 A8	20170718	BR20141121848	20130304
CA2866207 AA	20140903	CA20132866207	20130304
CA2866207 C	20170418	CA20132866207	20130304
CN102616868 A	20120801	CN201210055796	20120305
CN102616868 B	20140430	CN201210055796	20120305
DE602013021295 D1	20170706	DE201360021295T	20130304
DK2823900 T3	20170904	DK20130758228T	20130304
EP2823900 A1	20150114	EP20130758228	20130304
EP2823900 A4	20151125	EP20130758228	20130304
EP2823900 B1	20170517	EP20130758228	20130304
ES2637517 T3	20171013	ES20130758228T	20130304
ID201601598 A	20160318	ID2014P0005537	20130304
IN01924MN2014 A	20150710	IN2014MN01924	20140926
JP2015514563 T2	20150521	JP20140560228T	20130304
JP5902324 B2	20160413	JP20140560228T	20130304
KR101567592 B1	20151120	KR20147027911	20130304
KR20140130747 A	20141111	KR20147027911	20130304
MX2014010569 A1	20150602	MX20140010569	20130304
MX358426 B	20180817	MX20140010569	20130304
MY166186 A	20180607	MY20140002571	20130304
RU2580414 C1	20160410	RU20140140158	20130304
SG11201405382U A1	20141030	SG20141105382	20130304
TH155615 A	20160906	TH20141004966	20130304
US2014369905 AA	20141218	US20140475547	20140902
US9005555 BB	20150414	US20140475547	20140902
WO13131451 A1	20130912	WO2013CN072105	20130304
ZA201407147 A	20160127	ZA20140007147	20141002

Priority:

CN201210055796 20120305 EP20130758228 20130304 WO2013CN072105 20130304
 US20140475547 20140902

Probable Assignee: SUNSHINE KAIDI NEW ENERGY GROUP CO LTD

Assignee(s): (std): SANSHAJN KAJDI NJU ENERDZHI GRUP KO LTD ; SUNSHINE KAIDI NEW ENERGY GROUP CO LTD

Assignee(s): SUNSHINE KAIDI NEW ENERGY GROUP CO ; SONG DECHEN ; SUNSHINE KAIDI NEW ENERGY GROUP CO LTD1 JIANGXIA AVENUEKAIDI BUILDINGEAST LAKE HI-TECH DEVELOPMENT ZONEHUBEI 430223WUHANCN ; XU LI ; SUNSHINE KAIDI NEW ENERGY GROUP CO LTD WUHAN ; HAN YIMING ; LAI BO ; LIU QIANQIAN ; SANSHAJN KAJDI NJU ENERDZHI GRUP KO

Inventor(s): (std): SUN DECHEN ; LAJ BO ; LJU TSJANTSJAN ; SJUJ LI ; KHAN IMIN ; LI XU ; BO LAI ; QIANQIAN LIU ; YIMING HAN ; DECHEN SONG ; LIU QIANQIAN ; HAN YIMING ; LAI BO ; SONG DECHEN ; XU LI

Inventor(s): LAI BOCN ; LIU QIANQIANCN ; HAN YIMINGCN ; SONG DECHENCN ; XU LICN ; BOLAI

Agent(s): SHELSTON IP; SHELSTON IP PTY LTD; H AND M PATENT AND TRADEMARK AGENTS; ZEUNER SUMMERER STUETZ PATENT U RECHTSANWALT PART MBB; ZEUNER SUMMERER STUETZ; CARPINTERO MARIO; YENNY HALIM SE SH; MATTHIAS SCHOLL PC; MATTHIAS; WUHAN KAIYUAN INTELLECTUAL PROPERTY AGENT LTD

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

3) Family number: 51931457 (US2013326850A)

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Title: BURNING-FREE AND NON-CYANIDE METHOD FOR RECYCLING WASTE PRINTED CIRCUIT BOARD

Abstract: A burning-free and non-cyanide method for recycling waste printed circuit board is provided, comprising the following steps: desoldering to separate lead and tin; crashing and electrostatic selecting to respectively extract stibium, aluminum, copper, nickel, silver, gold, platinum and palladium. The method can realize the maximization of recycling of valuable metal resources, can thoroughly separate the metal lead and tin for recycling, and meanwhile increase the recycling rate of the metal palladium.

Classifications:

International (IPC 8-9): B02C23/08 B02C23/10 B09B3/00 B09B5/00 C22B1/00 C22B11/00 C22B13/00 C22B15/00 C22B21/00 C22B23/00 C22B25/00 C22B25/06 C22B3/00 C22B3/04 C22B30/02 C22B7/00 C23F1/30 C25C1/08 C25C1/12 C25C1/20 C25C7/00 H05K1/00 H05K3/22 H05K3/26 (Advanced/Invention); C22B11/00 C22B13/00 C22B15/00 C22B25/00 H05K1/00 (Advanced/Non-invention)

CPC: B09B5/00 B09B3/0016 B02C23/10 B02C23/08 C22B11/046 H05K3/225 H05K3/26 Y10T29/49156 C22B7/001 C22B7/005 H05K3/22 H05K2203/178 Y02W30/54 Y02W30/822 H05K1/00 Y10T29/49755 Y02P10/214 Y02P70/611 Y02P70/613

European: H05K3/22 T05K203/17E

US: 1/1 29/403.3

Family:

Publication number	Publication date	Application number	Application date
CN102676822 A	20120919	CN201110059739	20110311
CN102676822 B	20140101	CN201110059739	20110311
DE602011035563 D1	20170413	DE201160035563T	20110728
EP2684622 A1	20140115	EP20110861177	20110728
EP2684622 A4	20150826	EP20110861177	20110728
EP2684622 B1	20170301	EP20110861177	20110728
JP2014510195 T2	20140424	JP20130555726T	20110728
JP5766305 B2	20150819	JP20130555726T	20110728
KR101570780 B1	20151120	KR20137025105	20110728
KR20140006968 A	20140116	KR20137025105	20110728
US2013326850 AA	20131212	US20110001245	20110728
US9114445 BB	20150825	US20110001245	20110728
WO12122774 A1	20120920	WO2011CN077720	20110728

Priority:

CN201110059739 20110311 EP20110861177 20110728 WO2011CN077720 20110728

Probable Assignee: GEM CO LTD

Assignee(s): (std): GEM CO LTD ; SHANGHAI GEM HIGH TECH CO LTD ; XU KAIHUA ; SHENZHEN GEM HIGH TECH CO LTD

Assignee(s): SHENZHEN GEM HIGH TECHCO LTD ; GEM CO ; SHENZHEN GEM HIGH TECH CO ; GEM CO LTD
SHENZHEN ; SHANGHAI GEM HIGH TECH CO

Inventor(s): (std): XU KAIHUA ; KAIHUA XU

Agent(s): LEINWEBER AND ZIMMERMANN; JOHNSON RICHARD ALAN; SHIMOKAJI AND ASSOCIATES PC;
GUANGZHOU SCIHEAD PATENT AGENT CO LTD

Designated states: AE AG AL AM AO AT AU AZ BA 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

4) Family number: 63484495 (MX2015009846A)

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Title: SELECTIVE EXTRACTION OF PLATINUM-GROUP METALS USING CHLORINE AND OZONE CONCENTRATED SOLUTIONS.

Abstract: The present invention relates to a process for recovering platinum-group metals and precious metals from mineral and waste materials containing the same, wherein either one or all of the platinum group metals and precious metals can be recovered. The process may be applied when a high selectivity for the precious metals is required, avoiding the use of temperatures higher than 50 degrees C, as well as of reagents that are hazardous to health such as aqua regia and of processes damaging the environment such as the amalgamation process using mercury, whereas conventional methodologies, such as the cyanidation, are replaced. The process of the present invention is characterized by its technical simplicity and comprises contacting the MGP, and/or precious metals containing said metals with chloride salts solutions containing this substance in concentrations of up to 5M at a moderate, near-ambient temperatures of from about 0 to about 50 C, which results in a considerable saving of energy with respect to other processes during a period of time of up to 6 hours, simultaneously bubbling oxygen or air to achieve an ozone injection equivalent to 175 mg ozone/minute L of leaching solution. The pulp containing the solution and the solid material used as a source of MGP, and/or the precious metals, are filtered and the resulting liquid containing the MGP metals, and/or chloride precious metals of each metal, is treated for the recovery of said metals by using some of the known state-of-the-art techniques.

Classifications:

International (IPC 8-9): C22B1/00 C22B11/00 (Core/Invention)

CPC: Y02P10/234

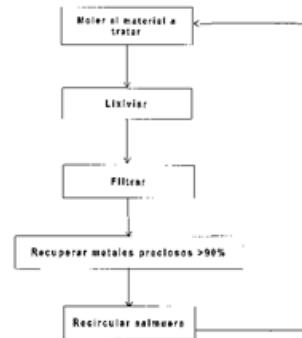


Figura 1

Family:

Publication number	Publication date	Application number	Application date
CO20160000464 A1	20180131	CO20160000464	20160729
MX2015009846 A1	20160513	MX20150009846	20150730

Priority:

MX20150009846 20150730

Probable Assignee: UNIV AUTONOMA METROPOLITANA**Assignee(s):** (std): UNIV AUTONOMA METROPOLITANA**Assignee(s):** UNIVERSIDAD AUTONOMA METROPOLITANA**Inventor(s):** (std): GOMEZ ROBINSON DE JESUS TORRES ; LAVINE GRETCHEN TERRI LAPIDUS**Inventor(s):** ROBINSON DE JESUS TORRES GOMEZ ; GRETCHEN TERRI LAPIDUS LAVINE**Agent(s):** JOSE ANDRES RINCON USCATEGUI**5) Family number: 33086114 (US2009293679A)**

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Title: EXTRACTION PROCESS FOR METALS LIKE GOLD AND PLATINUM INCLUDING FINE GRINDING, PULPING AND OXYGENATING

Abstract: This invention relates to a process for obtaining metal values, typically base metals, platinum or gold from a feed material. In a first step of the process of the invention, feed material containing metal values is ground to a particle size d90 of 100 microns or less to form an ultra fine pulp. In a second step of the process of the invention, the ultra fine ground pulp from the first step is oxygenated by pumping it in multiple passes through an in-line high shear static oxygenation device (30), while re-circulating it on a tank (28) or any other vessel. The process of the invention results in a significant reduction in the required leach time, improved recoveries, reduced cyanide consumptions, a steadier gold tail, as well as reduced capital and operational expenditure.

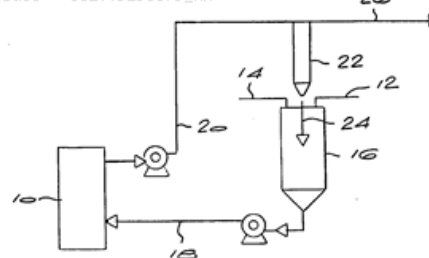
Classifications:

International (IPC 8-9): C22B1/00 C22B1/11 C22B11/00 C22B11/08 C22B3/00 C22B3/04 C22B9/00 C22B9/05 (Advanced/Invention); C21B15/00 C21B9/00 C22B11/00 C22B15/00 (Advanced/Non-invention); C22B1/00 C22B11/00 C22B3/00 C22B9/00 (Core/Invention); C22B (Subclass/Invention)

CPC: Y02P10/234 C22B11/04 C22B3/00 C22B3/04 C22B3/12 C22B11/08

European: C22B11/04 C22B11/08 C22B3/00 C22B3/04 C22B3/12

US: 266/101 75/710 75/710P 75/741 75/743 75/744

**Family:**

Publication number	Publication date	Application number	Application date
AP200704063 A0	20070831	AP20070004063	20051215
AP2137 A	20100719	AP20070004063	20051215
AT394511 E	20080515	AT20050820532T	20051215
AU2005315314 AA	20060622	AU20050315314	20051215
AU2005315314 BB	20101223	AU20050315314	20051215
BRPI0517194 A	20080930	BR2005PI17194	20051215
BRPI0517194 B1	20170912	BR2005PI17194	20051215
CA2590531 AA	20070614	CA20052590531	20051215
CA2590531 C	20141028	CA20052590531	20051215

CN101111615 A	20080123	CN200580047560	20051215
DE602005006622 D1	20080619	DE200560006622T	20051215
EA010939 B1	20081230	EA20070001261	20051215
EA200701261 A1	20071228	EA20070001261	20051215
EG24577 A	20091109	EG20070000606T	20070617
EG24577 A	20091109	EG20070000606	20070617
EP1831411 A1	20070912	EP20050820532	20051215
EP1831411 B1	20080507	EP20050820532	20051215
EP1831411 B9	20090422	EP20050820532	20051215
ES2307223 T3	20081116	ES20050820532T	20051215
NZ556382 A	20090925	NZ20050556382	20051215
PT1831411 T	20080806	PT20050820532T	20051215
UA93865 C2	20110325	UA20070007829	20051215
US2009293679 AA	20091203	US20050721793	20051215
US8613791 BB	20131224	US20050721793	20051215
WO06064350 A1	20060622	WO20051B03786	20051215
ZA200705658 A	20080430	ZA20070005658	20051215

Priority:

ZA20040010146 20041215 WO20051B03786 20051215 ZA20070005658 20051215

Probable Assignee: GREENHILLS MINING AND IND SERV

Assignee(s): (std): BATTERSBY MICHAEL ; GREENHILLS MINING AND IND SERV ; IMHOF RAINER ; MAELGWYN MINERAL SERVICES AFRI ; SINGH ADRIAN ; TINNISWOOD BRIAN ; MAELGWYN MINERAL SERVICES AFRICA PTY LTD ; MAELGWYN MINERAL SERVICES AFRICA PTY ; MAELGWYN MINERAL SERVICES AFRICA PROPRIETARY LTD

Assignee(s): MAELGWYN MINERAL SERVICES AFRICA PROPRIETARY LIMITED ; MAELGWYN MINERAL SERVICES AFRICA PROPRIETARY LTDC/O OCTAGON ACCOUNTANTS21 SCOTT STREET2090WAVERLEYZA ; MAELGWYN MINERAL SERVICES AFRICA PROPRIETARY LTD ; MAELGWYN MINERAL SERVICES AFRICA PROPRIETARY LIM ; MAELGWYN MINERAL SERVICES AFRICA (PROPRIETARY) LTD ; MAELGWYN MINERAL SERVICES AFRICA (PROPRIETARY) LTD ; GREENHILLS MINING AND INDUSTRIAL SERVICES PTY LTD ; GREENHILLS MINING AND INDUSTRIAL SERVICES PTY LTD21 SCOTT STREET2090WAVERLEYZA ; D GREENHILLS MINING AND INDUSTRIAL SERVICES LT ; D GREENHILLS MINING AND INDUSTRIAL SERVICES PTY L ; D GREENHILLS MINING AND INDUSTRIAL SERVICES PTY LTD ; GREENHILLS MINING AND INDUSTRIAL SERVICES LTD

Inventor(s): (std): BATTERSBY MICHAEL ; IMHOF RAINER ; SINGH ADRIAN ; TINNISWOOD BRIAN ; RAINER IMHOF ; MICHAEL BATTERSBY ; BRIAN TINNISWOOD ; ADRIAN SINGH

Inventor(s): TINNISWOOD BRIANZA ; SINGH ADRIANZA ; IMHOF RAINERDE ; BATTERSBY MICHAELGB

Agent(s): WRAYS; BORDEN LADNER GERVAIS LLP; SPENCER MICHAEL DAVID ET AL; MORGAN LEWIS AND BOCKIUS LLP; ADA O

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

6) Family number: 23243371 (US2003017106A)

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Title: RECOVERY OF NATURAL NANOCLUSTERS AND THE NANOCLUSTERS ISOLATED THEREBY

Abstract: Methods for recovery of naturally occurring nanoclusters are provided involving providing an aqueous nanocluster slurry and desorbing the nanoclusters from the surface of host substrate on which the nanoclusters are bound, followed by isolating the desorbed nanoclusters, and the isolated naturally occurring nanoclusters obtained thereby.

Classifications:

International (IPC 8-9): B22F9/16 C22B1/00 C22B15/00

C22B3/22 (Advanced/Invention);

B22F9/16 C22B3/00 (Core/Invention)

International (IPC 1-7): B22F9/16 C22B1/00 C22B11/00 C22B15/00

C22B3/00 C22B3/22

CPC: Y10S977/84 Y10S977/846 Y10S977/847 C22B1/00 C22B11/04

C22B15/0063 Y02P10/236

European: C22B1/00 C22B11/04 C22B15/00L

US: 23/293 23/293.00RS 23/293R 423/1 423/1S 423/21 423/210 423/210S 423/22 423/23 423/659 423/659P 75/343 75/343P 75/351 75/370 977/840 977/846 977/847

PatBase - US2003017106_AA

Patent Application Publication Jan. 23, 2003 Sheet 1 of 7 US20030017106 A1

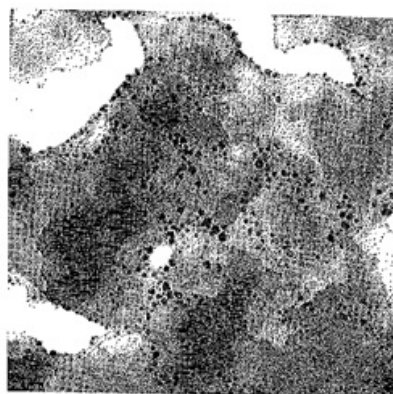


FIG. 1

Family:

Publication number	Publication date	Application number	Application date
AU2001270360 AA	20011217	AU20010270360	20010528
AU200170360 A1	20011217	AU20010070360	20010528
AU200170360 A5	20011217	AU20010070360	20010528
US2003017106 AA	20030123	US20010021063	20011219
US2005087037 AA	20050428	US20040953597	20040930
US6494932 BA	20021217	US20000575661	20000606
WO0194650 A2	20011213	WO2001CA00773	20010528
WO0194650 A3	20020502	WO2001CA00773	20010528

Priority:

US20000575661 20000606 WO2001CA00773 20010528 US20010021063 20011219
US20040953597 20040930

Probable Assignee: ANALOG DEVICES INC

Assignee(s): (std): ABERCROMBIE HUGH J ; BIRCH MOUNTAIN RESOURCES LTD

Assignee(s): ANALOG DEVICES INC

Inventor(s): (std): ABERCROMBIE HUGH J

Inventor(s): HUGH J ABERCROMBIE ; ABERCROMBIE HUGH

Agent(s): OBLON SPIVAK MCCLELLAND MAIER AND NEUSTADT PC

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 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 LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ 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

7) Family number: 49800930 (US2013276284A)

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Title: METHOD FOR RECYCLING OF OBSOLETE PRINTED CIRCUIT BOARDS

Abstract: Processes for recycling printed wire boards using environmentally-friendly compositions, wherein electronic components, precious metals and base metals may be collected for reuse and recycling.

Classifications:

International (IPC 8-9): B09B3/00 B09B5/00 C03B37/00 C08J11/04 C22B1/00 C22B11/00 C22B13/00 C22B15/00 C22B23/00 C22B25/06 C22B3/00 C22B3/04 C22B3/26 C22B3/44 C22B34/00 C22B5/00 C22B7/00 C23F1/00 C23F1/18 C23F1/30 C23F1/44 C25C1/08 C25C1/12 C25C1/20 H05K3/22 H05K3/34 (Advanced/Invention); C22B7/00 (Core/Invention)

CPC: C22B7/007 C22B11/046 H05K2203/176 H05K2203/178 Y02W30/54 Y10T29/49815 C22B1/005 C25C1/20 C22B7/008 Y02P10/214 Y02P10/234 Y02P20/582 Y02P70/613 H05K3/22 C23F1/44 C22B7/00

European: C22B11/04R8 C22B7/00D1 C23F1/44 H05K3/22 T05K203/17D T05K203/17E

US: 1/1 205/569 29/403.3 29/426.1

**Family:**

Publication number	Publication date	Application number	Application date
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AP201609105 A0	20160331	AP20160009105	20110415
AP3728 A	20160630	AP20120006529	20110415
BR112012026304 A2	20170822	BR20121126304	20110415
CN102939396 A	20130220	CN201180019159	20110415
CN102939396 B	20150401	CN201180019159	20110415
CN104532001 A	20150422	CN201410643978	20110415
EP2558605 A1	20130220	EP20110716150	20110415
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JP2013524024 T2	20130617	JP20130505173T	20110415
JP2015004135 A2	20150108	JP20140197031	20140926
JP2017041655 A2	20170223	JP20160224855	20161118
JP5792284 B2	20151007	JP20130505173T	20110415
JP6047132 B2	20161221	JP20140197031	20140926
JP6338296 B2	20180606	JP20160224855	20161118
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KR101705417 B1	20170209	KR20147030686	20110415
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KR101749086 B1	20170621	KR20167011315	20110415
KR20130052733 A	20130523	KR20127029817	20110415
KR20140133964 A	20141120	KR20147030686	20110415
KR20150017780 A	20150217	KR20157002635	20110415
KR20160054619 A	20160516	KR20167011315	20110415
SG10201502960Y A1	20150629	SG20151002960	20110415
SG184881 A1	20121129	SG20120076683	20110415
TW201144452 A	20111216	TW20110113122	20110415
TW201634701 A	20161001	TW20160118920	20110415
TW201634702 A	20161001	TW20160118921	20110415
TW201634703 A	20161001	TW20160118922	20110415
TWI558817 B	20161121	TW20110113122	20110415
TWI568859 B	20170201	TW20160118921	20110415
US2013276284 AA	20131024	US20110641371	20110415
US2016095230 AA	20160331	US20150962250	20151208
US2017079146 AA	20170316	US20160341626	20161102
US9215813 BB	20151215	US20110641371	20110415

US10034387 BB	20180724	US20150962250	20151208
WO11130622 A1	20111020	WO2011US32675	20110415

Priority:

US20100324390P 20100415	US20100362118P 20100707	US20100368360P 20100728
US20100376549P 20100824	US20100385586P 20100923	US20100388643P 20101001
US20100412390P 20101110	US20100412628P 20101111	CN201180019159 20110415
JP20130505173 20110415	JP20130505173T 20110415	JP20140197031 20110415
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US20150962250 20151208	US20160341626 20161102	JP20160224855 20161118

Probable Assignee: ADVANCED TECHNOLOGY MATERIALS INC

Assignee(s): (std): ADVANCED TECH MAT INC ; ADVANCED TECH MATERIALS ; BROSSEAU ANDRE ; GRIGORENKO SVITLANA ; JIANG PING ; KORZENSKI MICHAEL ; GREENE LYON GROUP INC ; KORZENSKI MICHAEL B ; ENTEGRIS INC ; KORZENSKI MICHAEL B

Assignee(s): ATMI PACKAGING INC ; POCO GRAPHITE INC ; GOLDMAN SACHS BANK USA COLLATERAL AGENT AS ; ADVANCED TECHNOLOGY MATERIALS INC ; ATMI INC

Inventor(s): (std): BROSSEAU ANDRE ; JIANG PING ; KORZENSKI MICHAEL ; GRIGORENKO SVITLANA ; KORZENSKI MICHAEL B ; MICHAEL KORZENSKI ; SVITLANA GRIGORENKO ; ANDRE BROSSEAU ; KORZENSKI MICHAEL B

Inventor(s): PING JIANG

Agent(s): ABG PATENTES SL; INABA YOSHIYUKI; SONODA AND KOBAYASHI INTELLECTUAL PROPERTY LAW; ATMD BIRD AND BIRD LLP; MOORE AND VAN ALLEN PLLC; TRISTAN A; MAGGIE; ENTEGRIS INC; FUIERER TRISTAN

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

8) Family number: 54123918 (US2014191019A)

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Title: APPARATUS AND METHOD FOR STRIPPING SOLDER METALS DURING THE RECYCLING OF WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

Abstract: Apparatuses and processes for recycling printed wire boards, wherein electronic components, precious metals and base metals may be collected for reuse and recycling. The apparatuses generally include a mechanical solder removal module and/or a thermal module, a chemical solder removal module, and a precious metal leaching module, wherein the modules are attached for continuous passage of the e-waste from module to module.

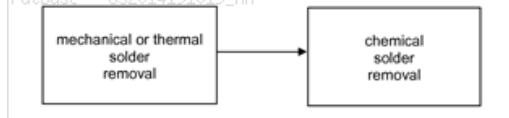
Classifications:

International (IPC 8-9): B01D57/00 B01D59/38 B01D61/18 B09B3/00 B09B5/00 B23K1/018 B23K3/08 B23K31/02 B23K37/00 B29B17/02 C22B1/00 C22B11/00 C22B3/00 C22B3/02 C22B3/04 C22B3/26 C22B34/00 C22B4/00 C22B7/00 C25C1/00 H03K3/00 H05K3/00 H05K3/22 H05K3/34 (Advanced/Invention); B01D61/18 H03K3/00 (Advanced/Non-invention); B09B3/00 B09B5/00 (Core/Invention)

CPC: H05K3/22 H05K2203/178 Y02W30/82 Y02W30/821 B23K3/08 B23K37/00 C22B3/02 C22B7/006 C22B1/005 C22B4/00 C22B3/04 C25C1/00 B23K1/018 C22B11/046 Y02P10/234 Y02P70/613 Y02W30/822 B09B3/00 B09B5/00

US: 1/1 205/560 228/18 228/19 228/264 266/121 266/128 75/744

PatBase - US2014191019_AA



Family:

Publication number	Publication date	Application number	Application date
AP201407781 A0	20140731	AP20140007781	20121213
BR112014014495 A2	20170613	BR20141114495	20121213
BR112014014495 A8	20170627	BR20141114495	20121213
BR112014014495 A8	20170613	BR20141114495	20121213
CN103402659 A	20131120	CN201280011927	20121213
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CN106914470 A	20170704	CN201610977467	20121213
CN106944452 A	20170714	CN201610977214	20121213
DE602012028622 D1	20170323	DE201260028622T	20121213
EP2790845 A1	20141022	EP20120857057	20121213
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EP2790845 B1	20170208	EP20120857057	20121213
ES2619568 T3	20170626	ES20120857057T	20121213
IN01462KN2014 A	20151023	IN2014KN01462	20140711
JP2014529500 T2	20141113	JP20140527370T	20121213
JP2017095810 A2	20170601	JP20170036050	20170228
JP6397946 B2	20180926	JP20170036050	20170228
KR101699136 B1	20170123	KR20147006190	20121213
KR20140045581 A	20140416	KR20147006190	20121213
KR20140139131 A	20141204	KR20147031333	20121213
SG10201604733W A1	20160830	SG20161004733	20121213
SG11201403228R A1	20140730	SG20141103228	20121213
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TW201544164 A	20151201	TW20150127899	20121214
TW201544165 A	20151201	TW20150127903	20121214
TW201544166 A	20151201	TW20150127907	20121214
US2014191019 AA	20140710	US20120240220	20121213
US2015321279 AA	20151112	US20150802219	20150717
US2015322540 AA	20151112	US20150803962	20150720
US2015322545 AA	20151112	US20150803936	20150720
US9221114 BB	20151229	US20120240220	20121213
US9649712 BB	20170516	US20150803936	20150720

US9731368 BB	20170815	US20150803962	20150720
WO13090517 A1	20130620	WO2012US69404	20121213

Priority:

US20110576035P	20111215	US20120589583P	20120123	CN201280011927	20121213
EP20120857057	20121213	US20120240220	20121213	JP20140527370T	20121213
WO2012US69404	20121213	US20140240220	20140221	US20150802219	20150717
US20150803962	20150720	US20150803936	20150720	JP20170036050	20170228

Probable Assignee: ENTEGRIS INC

Assignee(s): (std): ADVANCED TECH MAT INC ; ADVANCED TECH MATERIALS ; ADVANCED TECH MATERIALS INC ; JIANG PING ; CHEN TIANNIU ; KORZENSKI MICHAEL B ; ENTEGRIS INC

Assignee(s): OPTIS CELLULAR TECHNOLOGY LLC ; ENTEGRIS INC BILLERICA ; ADVANCED TECHNOLOGY MATERIALS INC

Inventor(s): (std): PING JIANG ; TIANNIU CHEN ; MICHAEL B KORZENSKI ; CHEN TIAN NIU ; KORZENSKI MICHAEL B ; JIANG PING ; CHEN TIANNIU

Inventor(s): KORZENSKI MICHAEL B BETHEL ; JIANG PING DANBURY ; CHEN TIANNIU WESTFORD

Agent(s): ABG PATENTES SL; ARIAS JUAN; INABA YOSHIYUKI; SONODA AND KOBAYASHI INTELLECTUAL PROPERTY LAW; JOYCE A TAN AND PARTNERS LLC; MOORE AND VAN ALLEN PLLC; TRISTAN A; MAGGIE; JOHN E; ENTEGRIS INC LEGAL DEPT; NIDHI G; CATHERINE D; FUIERER TRISTAN

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

9) Family number: 34298583 (US2007283782A)

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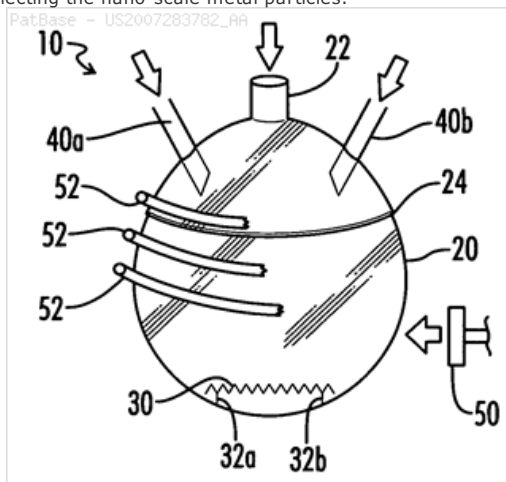
Title: CONTINUOUS PROCESS FOR THE PRODUCTION OF NANO-SCALE METAL PARTICLES

Abstract: A continuous process for producing nano-scale metal particles includes feeding at least one decomposable moiety selected from the group consisting of organometallic compounds, metal complexes, metal coordination compounds and mixtures thereof into a reactor vessel; exposing the decomposable moiety to a source of energy sufficient to decompose the moiety and produce nano-scale metal particles; and depositing or collecting the nano-scale metal particles.

Classifications:

International (IPC 8-9): B01J19/00 B01J19/10 B01J19/12 B01J3/02 B01J3/03 B01J37/02 B01J37/08 B01J37/34 B01J4/00 B01J8/00 B22F1/00 B22F9/00 B22F9/18 B22F9/24 C22B1/00 C22B23/06 C22B3/22 (Advanced/Invention); B01J19/00 B01J37/00 B01J8/00 B22F9/00 B22F9/16 C22B1/00 (Core/Invention)

CPC: B22F9/30 B01J23/38 B01J23/74 B01J23/892 B01J35/0013 B01J35/006 B01J35/04 B01J37/344 B01J37/345 B01J37/346 B22F2998/00 B01J19/122 B01J19/1812 B01J2219/00083 Y02P10/234 C22B23/065 B01J3/006 B01J3/02 B01J3/03 B01J4/001 B01J19/10 B01J19/123 B01J19/126 B01J19/127 B01J19/128 B01J19/129 B01J37/086 B01J37/34 B01J2219/0009 B01J2219/00092 B01J2219/00141 B01J2219/00144 B01J2219/00146 B01J2219/00148 B01J2219/0869 B01J2219/0871 B01J2219/0883 B01J2219/182 B01J2219/1943 B22F1/0018 B22F9/24 B82Y30/00 C22B3/22
European: B01J19/10 B01J19/12D B01J19/12D10 B01J19/12D12 B01J19/12D2 B01J19/12D6 B01J19/12D8 B01J19/18C B01J23/38 B01J23/74 B01J23/89D B01J3/00F B01J3/02 B01J3/03 B01J35/00D8D B01J37/08B4 B01J37/34 B01J37/34B6 B01J37/34B6D B01J4/00B B22F1/00A2B4 B22F9/24 B22F9/30 B82Y30/00 C22B23/06B C22B3/22 L01J219/00B2D2D L01J219/00B2D4B L01J219/00B2D4C L01J219/00B2M2 L01J219/00B2M4 L01J219/00B2M6 L01J219/00B2M8 L01J219/08F L01J219/08H L01J219/08M8B L01J219/18B L01J219/194B4 L01J35/00C L01J35/04 L22F998/00
US: 422/129 422/198 422/240 75/343 75/343P 75/362 75/362S



Family:

Publication number	Publication date	Application number	Application date
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CA2618802 AA	20080211	CA20062618802	20060809
CN101309767 A	20081119	CN200680035171	20060809
DE602006035218 D1	20130508	DE200660035218T	20060809
EP1928624 A2	20080611	EP20060801062	20060809
EP1928624 A4	20100609	EP20060801062	20060809
EP1928624 B1	20130320	EP20060801062	20060809
US2007283782 AA	20071213	US20050200668	20050810
US2007286778 AA	20071213	US20050201353	20050810
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Priority:

US20050200668	20050810	US20050201353	20050810	EP20060801062	20060809
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Probable Assignee: DIRECTA PLUS SRL

Assignee(s): (std): DIRECTA PLUS PATENT AND TECHNOLOGY LTD ; DIRECTA PLUS S P A ; DIRECTA PLUS PATENT AND TECHNOLO ; DIRECTA PLUS SRL ; MERCURI ROBERT A

Assignee(s): DIRECTA PLUS PATENT AND TECHNOLOGY LIMITED ; DIRECTA PLUS SPA

Inventor(s): (std): MERCURI ROBERT A

Inventor(s): MERCURI ROBERT ; MERCURI ROBERT A SEVEN HILLS ; ROBERT A MERCURI

Agent(s): SIM AND MCBURNEY; CREMER AND CREMER; BRAND THOMAS LOUIS; Cremer & Cremer; WADDEY AND PATTERSON PC

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

10) Family number: 500978 (US3819363A)

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Title: METAL RECOVERY METHOD

Abstract: A system for recovering noble metal values from chemically composite ore materials. The process is effective to assay as well as to remove commercial quantities of precious metals associated chemically or physically with naturally occurring organic compounds. For example, previous metals which are chelated or are present in the form of complex ions, as well as metals which are physically or chemically bound to or form parts of large organic molecules may be recovered. The starting material may be an ore including water and organic and inorganic underwater deposits, usually from coastal regions. The organic portion of the ore is separated by flotation from the shells, sand, and the like. Calcium carbonate is removed by acid treatment, and the remaining organic float material is treated with a water-immiscible, volatile organic solvent or other material which forms a gel-like material. The solvent, such as benzene or the like, is then reclaimed by heating the mass below the boiling point of water. Thereafter, the precious metal containing composition material is treated with a strong oxidant such as perchloric acid, any excess oxidant is removed from the oxidized composite material, and the organic precious metal composite material spontaneously ignites at about 200 DEG C., producing waste gases and an ash material. The ash contains mixed previous elemental metals and metal oxides salts and slags which are suitable for immediate electric arc furnace reduction in preparation for the formation of cast anodes from which pure metals are ultimately recovered.

Classifications:

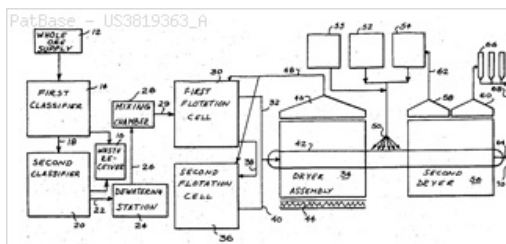
International (IPC 8-9): C22B1/00 C22B11/00 C22B3/00 C22B4/00 C22B5/00 C22B5/16 (Advanced/Invention); C22B1/00 C22B11/00 C22B3/00 C22B4/00 C22B5/00 (Core/Invention); C22B (Subclass/Invention)

International (IPC 1-7): B03B7/00 C22B1/00 C22B1/02 C22B1/12 C22B11/00 C22B11/04 C22B3/00 C22B4/00 C22B5/00 C22B5/16 C22D7/00

CPC: C22B5/00 Y02P10/234 C22B3/00 C22B1/00 C22B4/00 C22B5/16 C22B11/00

European: C22B1/00 C22B11/00 C22B3/00 C22B4/00 C22B5/00 C22B5/16

US: 423/22 423/23 423/26 75/10.19 75/10.23 75/10R 75/11.8 75/428 75/637



Family:

Publication number	Publication date	Application number	Application date
CA960871 A1	19750114	CA19710116431	19710623
DE2131481 A1	19720105	DE19712131481	19710624
FR2096458 A1	19720218	FR19710022828	19710623
GB1360031 A	19740717	GB19710029356	19710623
NL7108748 A	19711228	NL19710008748	19710624
OA3834 A	19711224	OA19710054275	19710622
US3819363 A	19740625	US19710132061	19710407
US3979205 A	19760907	US19740480965	19740619
ZA7104049 A	19730228	ZA19710004049	19710621

Priority:

US19700049455 19700624 US19710132061 19710407 US19740480965 19740619

Probable Assignee: WANZENBERG FRITZ WALTER

Assignee(s): (std): WANZENBERG F ; WANZENBERG F W ; WANZENBERG FRITZ ; WANZENBERG FRITZ WALTER

Assignee(s): FRITZ W WANZENBERG ; WANZENBERG FRITZ W ; WANZENBERG F US

Inventor(s): (std): WANZENBERG FRITZ W ; WANZENBERG F ; W WANZENBERG FRITZ

Inventor(s): WANZENBERG F US

11) Family number: 28648012 (US5992640A)

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Title: PRECIOUS METALS RECOVERY FROM ORES

Abstract: A process for recovery of a precious metals containing mineral from a non-sulphidic gangue mineral comprising: preparing a pulp of a material containing the precious metals containing and gangue minerals; conditioning the pulp with an oxidizing gas containing a gas selected from oxygen and ozone; and subjecting the conditioned pulp to a flotation operation for recovery of the precious metals containing mineral.

Classifications:

International (IPC 8-9): B03B1/04 B03D1/002 B03D1/02 B03D1/04 C22B1/00 C22B11/00 C22B13/00 C22B23/00 C22B25/00 C22B30/04 (Advanced/Invention); B03B1/00 B03D1/00 B03D1/002 C22B11/00 C22B13/00 C22B23/00 C22B25/00 C22B30/00 (Core/Invention); B01D B03D (Subclass/Invention)

International (IPC 1-7): B03B1/04 B03D1/002 B03D1/018 B03D1/02 B03D1/06 C22B1/00 C22B11/00 C22B13/00 C22B23/00 C22B25/00 C22B30/04

CPC: B03D1/02 B03D1/04

European: B03D1/02 B03D1/04

US: 209/166 209/167 241/19 241/20 241/24.13 241/24.25

Family:

Publication number	Publication date	Application number	Application date
AU199537917 A1	19960523	AU19950037917	19951116
AU199880843 A1	19981022	AU19980080843	19980819
AU691684 B2	19980521	AU19950037917	19951116
AU727116 B2	20001130	AU19980080843	19980819

AU953894 A0	19941208	AU1994PM09538	19941116
CA2163058 AA	19960517	CA19952163058	19951116
CA2163058 C	20020423	CA19952163058	19951116
US5992640 A	19991130	US19970928422	19970912
ZA9509750 A	19960529	ZA19950009750	19951116

Priority:

AU1994PM09538 19941116 AU19950037917 19951116 US19950558395 19951116
CA19952163058 19951116 US19970928422 19970912 AU19980080843 19980819

Probable Assignee: BOC GASES AU LTD

Assignee(s): (std): BOC GASES AUSTRALIA LTD ; CLARK DAVID ; BOC GASES AU LTD ; COMMW IND GASES ; NEWELL ANDREW

Assignee(s): COMMW INDUSTRIAL GASES LTD ; BOC GASES AUSTRALIA LIMITED ; COMMONWEALTH INDUSTRIAL GASES LTD

Inventor(s): (std): ANDREW JAMES HAIGH NEWELL ; ANDREW NEWEL ; ANDREW NEWELL ; CLARK DAVID WILLIAM ; DAVID CLARK ; DAVID WILLIAM CLARK ; NEWELL ANDREW JAMES HAIGH ; NEWELL ANDREW ; CLARK DAVID ; NEWEL ANDREW

Agent(s): SHELSTON IP; SHELSTON IP PTY LTD; KIRBY EADES GALE BAKER

12) Family number: 31002460 (US2004187685A)

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Title: METHOD OF AND APPARATUS FOR REGENERATING ADSORBENT

Abstract: An apparatus for regenerating an adsorbent includes an electrolytic cell filled with an electrolyte; and an electrode unit that includes a first electrode made from the adsorbent in which a substance is adsorbed and a second electrode. The first electrode and the second electrode are soaked in the electrolyte. The apparatus also includes a power source that supplies a voltage applied between the first electrode and the second electrode.

Classifications:

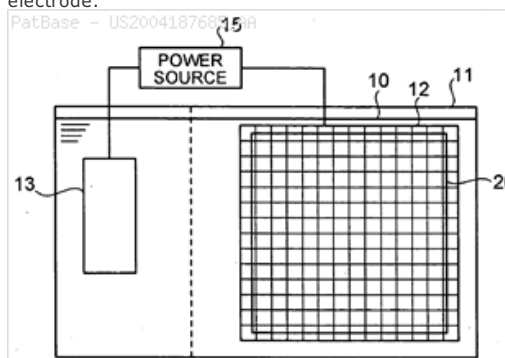
International (IPC 8-9): B01D53/02 B01D53/50 B01D53/81 B01D53/96 B01J20/34 B01J3/00 B01J38/74 B09B3/00 C01B31/08 C22B1/00 C22B3/04 C22B3/44 C22B7/00 (Advanced/Invention); B01J20/34 (Advanced/Non-invention); B01D53/02 B01D53/50 B01D53/81 B01D53/96 B01J20/30 B01J3/00 B01J38/00 B09B3/00 C01B31/00 C22B1/00 C22B3/00 C22B7/00 (Core/Invention)

International (IPC 1-7): B01D53/02 B01D53/50 B01D53/81 B01D53/96 B01J20/34 B01J38/74 B09B3/00 C01B31/08 C22B1/00 C22B3/04 C22B3/44 C22B7/00 C25F1/00

CPC: B01J20/3441 B01J20/3416 Y02P10/234 Y02P20/544

European: B01J20/34C B01J20/34E B01J20/34N

US: 95/133 95/134 95/148 95/148P 96/143 96/143S



Family:

Publication number	Publication date	Application number	Application date
CA2462018 AA	20040928	CA20042462018	20040326
CA2462018 C	20080513	CA20042462018	20040326
CN100591414 C	20100224	CN200410008579	20040324
CN101700493 A	20100505	CN200910226432	20040324
CN1533834 A	20041006	CN200410008579	20040324
EP1468733 A1	20041020	EP20040006938	20040323
JP2004298692 A2	20041028	JP20030092746	20030328
JP2005034705 A2	20050210	JP20030198122	20030716
JP4064850 B2	20080319	JP20030092746	20030328
KR100651433 B1	20061129	KR20040020618	20040326
KR20040084997 A	20041007	KR20040020618	20040326
US2004187685 AA	20040930	US20040799781	20040315
US7267710 BB	20070911	US20040799781	20040315

Priority:

JP20030092746 20030328 JP20030198122 20030716 CA20042462018 20040326
CA20042462018 20040326

Probable Assignee: MITSUBISHI HEAVY IND LTD

Assignee(s): (std): MITSUBISHI HEAVY IND LTD ; MITSUBISHI JUKOGYO KK

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Inventor(s): (std): AKINORI YASUTAKE ; KIYOSHI TATSUHARA ; KOBAYASHI NORIHISA ; KURISAKI TAKASHI ; NAGAI MASAHIKO ; NAGAI MASAHIRO ; SUGIYAMA TOMOAKI ; TAKASHI ; TAKASHI KURISAKI ; TATSUHARA KIYOSHI ; YASUTAKE AKINORI ; TOMOAKI SUGIYAMA ; NORIHISA KOBAYASHI ; MASAHIKO NAGAI ; KOBAYASHI TAKAFURU ; KEIKO KOBAYASHI

Inventor(s): KOBAYASHI KEIKO

Agent(s): FETHERSTONHAUGH AND CO; SAKAI HIROAKI; WENDEROTH LIND AND PONACK LLP

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

13) Family number: 54126206 (US2013153436A)

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Title: SYSTEMS AND METHODS FOR METAL RECOVERY

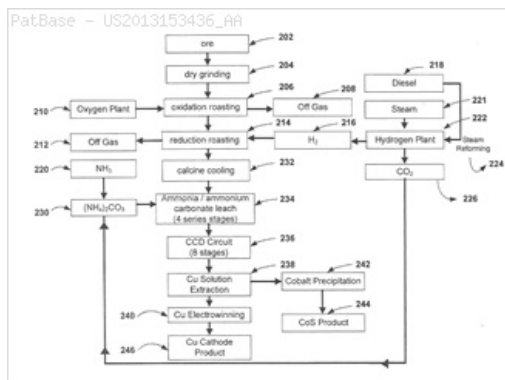
Abstract: Various embodiments provide a process roasting a metal bearing material under oxidizing conditions to produce an oxidized metal bearing material, roasting the oxidized metal bearing material under reducing conditions to produce a roasted metal bearing material, and leaching the roasted metal bearing material in a basic medium to yield a pregnant leach solution.

Classifications:

International (IPC 8-9): C22B C22B1/00 C22B1/02 C22B1/26 C22B15/00 C22B23/00 C22B3/00 C22B3/02 C22B3/06 C22B3/12 C22B3/14 C22B3/22 C25C1/00 C25C1/12 C25C5/02 C25C7/02 (Advanced/Invention)

CPC: C22B23/005 C25C1/00 C22B3/02 C22B3/14 C22B3/12 C25C7/02 Y02P10/234 C22B23/0446 C22B23/0453 C22B15/0002 C22B15/0078 C22B15/0086 C22B3/22 C22B1/26 C25C5/02 C25C1/12 C22B1/02

US: 1/1 205/560 205/580 266/195 422/608 423/1 423/101 423/109 423/11 423/140 423/150.1 423/20 423/21.1 423/22 423/32 423/34 423/41 423/49 423/53 423/54 423/658.5 75/416 75/430 75/743



Family:

Publication number	Publication date	Application number	Application date
US2013153436 AA	20130620	US20120716836	20121217
US2013156661 AA	20130620	US20120716819	20121217
US2016230296 AA	20160811	US20160099966	20160415
US8920773 BB	20141230	US20120716819	20121217
US9340849 BB	20160517	US20120716836	20121217
WO13096070 A1	20130627	WO2012US69390	20121213
ZA201404594 A	20150930	ZA20140004594	20121213

Priority:

US20110577995P 20111220 WO2012US69390 20121213 US20120716819 20121217
US20120716836 20121217 US20160099966 20160415

Probable Assignee: FREEPORT MINERALS CORP

Assignee(s): (std): FREEPORT MCMORAN CORP ; FREEPORT MINERALS CORP

Inventor(s): (std): BAUGHMAN DAVID R ; MAY LAWRENCE D ; BOLLES THOMAS R ; SMITH JAY C ; ROBERTSON JOANNA M ; HAZEN WAYNE W ; JAY C SMITH ; WAYNE W HAZEN ; JOANNA M ROBERTSON ; DAVID R BAUGHMAN ; THOMAS R BOLLES ; LAWRENCE D MAY

Agent(s): SNELL AND WILMER LLP; HAUFF JR CHARLES F

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

14) Family number: 8617664 (AU199470277A)

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Title: PRECIOUS METAL RECOVERY PROCESS FROM ORES

Abstract: (Claim 1) 1. A process for recovering at least one first metal selected from the group consisting of gold, silver, the platinum group metals and mixtures thereof from an ore containing refractory material comprising contacting said ore with at least one added plant derived aromatic component having ortho-quinone functionality and mixtures thereof at conditions effective to oxidize at least a portion of said refractory material and at least partially liberate the metal to be recovered from said ore and recovering said first metal from said ore.

Classifications:

International (IPC 8-9): C22B1/00 C22B11/00 C22B11/08 (Advanced/Invention); C22B1/00 C22B11/00 (Core/Invention)

International (IPC 1-7): C22B1/00 C22B11/00 C22B11/08

Family:

Publication number	Publication date	Application number	Application date
AU199470277 A1	19960229	AU19940070277	19940816

Priority:

AU19940070277 19940816

Probable Assignee: ENSCI INC

Assignee(s): (std): ENSCI INC

Inventor(s): (std): CLOUGH THOMAS J

Inventor(s): THOMAS J CLOUGH

Agent(s): PHILLIPS ORMONDE FITZPATRICK

15) Family number: 30352764 (US2004253175A)

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Title: ELECTROSTATICALLY ENHANCED TRIBOCHEMICAL METHODS AND APPARATUS

Abstract: A milling apparatus is modified by electrically insulating the milling chamber to enhance the efficiency of tribochemical reactions between reactive compositions during milling. The enhanced level of tribochemical reactivity is attributed to the buildup of electrostatic charge in and on the milled chamber during mill operation. The insulated mills in accordance with the invention can be used in a wide variety of commercial applications generally involving tribomechanically

induced redox chemistry, including ore extraction, precious metal extraction, production of ferrites and pigments, and waste processing.

Classifications:

International (IPC 8-9): C21B11/00 C21B15/00 C22B1/00

C22B11/02 C22B5/04 C22B7/00 (Advanced/Invention);

C21B11/00 C21B15/00 C22B1/00 C22B11/00 C22B5/00

C22B7/00 (Core/Invention)

International (IPC 1-7): A62D3/00 C01G49/06 C21B15/00

C22B11/02 C22B26/20 C22B5/00

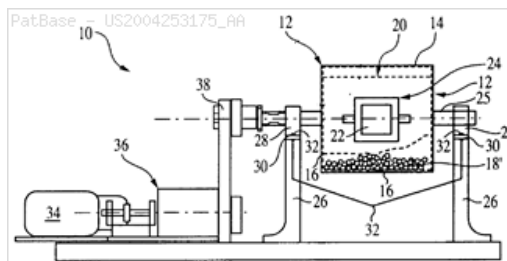
CPC: C22B5/04 C21B11/00 C21B15/00 C22B1/00 C22B7/005

C22B11/02 Y02P10/136 Y02P10/212

European: C21B11/00 C21B15/00 C22B1/00 C22B11/02 C22B5/04

C22B7/00C

US: 423/633 423/659



Family:

Publication number	Publication date	Application number	Application date
AU2003260016 AA	20040311	AU20030260016	20030821
US2004253175 AA	20041216	US20020225388	20020821
WO04018717 A2	20040304	WO2003US26394	20030821
WO04018717 A3	20040812	WO2003US26394	20030821
WO04018717 C2	20040930	WO2003US26394	20030821

Priority:

US20020225388 20020821 WO2003US26394 20030821

Probable Assignee: INSIGHT TECHNOLOGIES INC

Assignee(s): (std): INSIGHT TECHNOLOGIES INC ; STIFFLER DONALD R

Inventor(s): (std): STIFFLER DONALD R

Inventor(s): DONALD R STIFFLER

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 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 UZ VC VN YU ZA ZM ZW

16) Family number: 65708334 (US2018318842A)

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Title: METHOD AND APPARATUS FOR SEPARATION AND SIZE REDUCTION OF NOBLE METAL CONTAINING SOURCES

Abstract: The invention discloses improvements and additional uses of thermo-mechanical processes using a rotary kiln for the separation of parts from a device that are held together by various means such as solder, epoxies, glues, and/or any other thermally degradable adhesives or underfills, and which is suitable for material size reduction via thermal decomposition of encapsulant materials such as integrated circuit casings or thermally degradable materials such as carbon-based hydro processing catalysts. The invention includes further sorting the materials according to predetermined size either in-situ or in series using a meshed vibrating table downstream of the rotary kiln. These devices can include, but not limited to, printed circuit boards, catalysts, solar panels, and the like.

Classifications:

International (IPC 8-9): B02C17/00 B02C17/04 B02C17/18

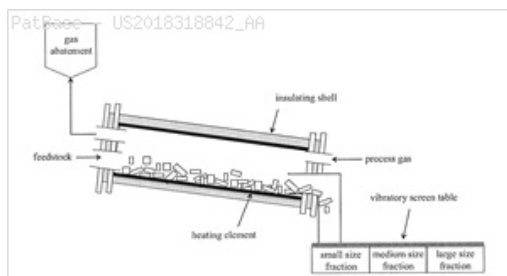
B02C19/11 B02C19/16 B09B3/00 C22B1/00 C22B11/02 C22B5/02

C22B7/00 (Advanced/Invention)

CPC: Y02P10/212 B02C17/1835 H05K2203/178 C22B7/001

C22B11/025 B09B3/0083 C22B5/02 B02C17/04 B02C17/1815

C22B1/005



Family:

Publication number	Publication date	Application number	Application date
US2018318842 AA	20181108	US20160773063	20161108
WO17083290 A1	20170518	WO2016US60967	20161108

Priority:

US20150252638P 20151109 US20160773063 20161108 WO2016US60967 20161108

Probable Assignee: REDWOOD MATERIALS INC

Assignee(s): (std): EAUTERRE CONSULTING LLC

Assignee(s): REDWOOD MATERIALS INC ; EAUTERRE CONSULTING INC

Inventor(s): (std): KORZENSKI MICHAEL B

Agent(s): FANUCCI ALLAN A 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 DJ 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 KW 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