

Search query (2): [SP]: 1.-60. (canceled) 61. an apparatus comprising at least one electrochemical cell comprising: at least one anode comprising at least one carbide chemical compound, and at least one cathode, wherein the electrochemical cell apparatus is a galvanic cell apparatus. 62.-63. (canceled) 64. the apparatus of claim 61, wherein the carbide chemical compound is a salt-like carbide or an intermediate transition metal carbide. 65. the apparatus of claim 61, wherein the carbide chemical compound is a salt-like carbide. 66. the apparatus of claim 61, wherein the carbide chemical compound is calcium carbide or aluminum carbide. 67. the apparatus of claim 61, wherein the carbide chemical compound has sufficient electronic conductivity to function as an anode. 68. the apparatus of claim 61, wherein the carbide chemical compound has an electronic conductivity of at least 10-8 s/cm. 69. the apparatus of claim 61, wherein the carbide chemical compound is in the form of individual pieces or particles. 70. the apparatus of claim 61, wherein the carbide chemical compound is in the form of individual pieces or particles having a size of less than one cm. 71. the apparatus of claim 61, wherein the carbide chemical compound contacts at least one electrically conductive material. 72. the apparatus of claim 61, wherein the carbide chemical compound is held in an electrically conductive container. 73. the apparatus of claim 61, wherein the electrochemical cell apparatus anode is contacted with a solution comprising at least one organic solvent and at least one dissolved salt. 74. the apparatus of claim 61, wherein the electrochemical cell apparatus cathode is contacted with a solution comprising at least one organic solvent and at least one dissolved salt. 75. the apparatus of claim 61, wherein the electrochemical cell apparatus cathode is a metal cathode. 76. the apparatus of claim 61, wherein the electrochemical cell apparatus comprises at least one salt bridge or at least one ion exchange membrane. 77. the apparatus of claim 61, wherein the electrochemical cell apparatus comprises an external voltage source to regulate an oxidation reaction of carbide in the carbide chemical compound. 78. the apparatus of claim 61, wherein the apparatus further comprises at least one solution comprising at least one solvent and at least one dissolved salt, and the solution is free of dissolved carbide chemical compound. 79. (canceled) 80. an electrochemical cell apparatus according to claim 61, wherein the anode is an anode electrode structure comprising at least one carbide chemical compound, wherein optionally the carbide chemical compound is a salt-like carbide and at least one electronically conductive structural element different from the carbide chemical compound and contacting the at least one carbide chemical compound. 81. an electrode structure comprising at least one carbide chemical compound, wherein the carbide chemical compound is a salt-like carbide and at least one electronically conductive structural element different from the carbide chemical compound and contacting the at least one carbide chemical compound. 82. the electrode structure of claim 81, wherein the carbide chemical compound is methanide, acetylide, or sesquicarbide. 83. the electrode structure of claim 81, wherein the carbide chemical compound is calcium carbide, aluminum carbide, sodium carbide, magnesium carbide, lithium carbide, or beryllium carbide. 84. the electrode structure of claim 81, wherein the carbide chemical compound is calcium carbide or aluminum carbide. 85. the electrode structure of claim 81, wherein the carbide chemical compound has sufficient electronic conductivity to function as an anode. 86. the electrode structure of claim 81, wherein the carbide chemical compound has an electronic conductivity of at least 10-8 s/cm. 87. the electrode structure of claim 81, wherein the carbide chemical compound is in the form of individual pieces or particles. 88. the electrode structure of claim 81, wherein the carbide chemical compound is in the form of individual pieces or particles having a size of less than one cm. 89. the electrode structure of claim 81, wherein the carbide chemical compound is in the form of individual pieces or particles having a size of at least one micron. 90. the electrode structure of claim 81, wherein the carbide chemical compound is divided into separate portions which are each contacted with at least one electrically conductive structural element. 91. the electrode structure of claim 81, wherein the carbide chemical compound is at least about 95 percent pure. 92. the electrode structure of claim 81, wherein the electronically conductive structural element is a binder for the carbide chemical compound. 93. the electrode structure of claim 81, wherein the electronically conductive structural element is a container and the carbide chemical compound is held in the container. 94. the electrode structure of claim 81, wherein the electronically conductive structural element is a container and the carbide chemical compound is held in the container, and the container has openings which allow fluid to enter the container and contact the carbide chemical compound. 95. the electrode structure of claim 81, wherein the electronically conductive structural element is a metallic container and the carbide chemical compound is held in the metallic container. 96. the electrode structure of claim 81, wherein the electronically conductive structural element comprises at least one conductive rod. 97. the electrode structure of claim 81, wherein the electrode structure is adapted to be removably attached to an apparatus. 98. the electrode structure of claim 81, wherein the electronically conductive structural element of the electrode structure comprises at least one current collector. 99. the electrode structure of claim 81, wherein the electrode structure is adapted for use as an anode in an electrochemical cell apparatus for production of an elemental carbon material. 100. the electrode structure of claim 81, wherein the electrode structure is adapted for use as an anode in a galvanic cell apparatus for production of elemental carbon material. 101.-134. (canceled) 135. the electrode structure of claim 81, wherein the electrode structure is adapted for use other than the production of elemental carbon material. 136. the electrode structure of claim 81, wherein the electrode structure is adapted for use in conversion of aldehyde or carboxylic acid, or reaction of ferric or ferrous ion. 137. the electrode structure of claim 81, wherein the electrode structure is adapted for use in acid mine drainage or in sewage treatment.

Results: 71

Search history

Search PN=(WO2016064713) (Results 1)

1:

Search [SP]: 1.-60. (canceled) 61. an apparatus comprising at least one electrochemical cell comprising: at least one anode comprising at least one carbide chemical compound, and at least one cathode, wherein the electrochemical cell apparatus is a galvanic cell apparatus. 62.-63. (canceled) 64. the apparatus of claim 61, wherein the carbide chemical compound is a salt-like carbide or an intermediate transition metal carbide. 65. the apparatus of claim 61, wherein the carbide chemical compound is a salt-like carbide. 66. the apparatus of claim 61, wherein the carbide chemical compound is calcium carbide or aluminum carbide. 67. the apparatus of claim 61, wherein the carbide chemical compound has sufficient electronic conductivity to function as an anode. 68. the apparatus of claim 61, wherein the carbide chemical compound has an electronic conductivity of at least 10-8 s/cm. 69. the apparatus of claim 61, wherein the carbide chemical compound is in the form of individual pieces or particles. 70. the apparatus of claim 61, wherein the carbide chemical compound is in the form of individual pieces or particles having a size of less than one cm. 71. the apparatus of claim 61, wherein the carbide chemical compound contacts at least one electrically conductive material. 72. the apparatus of claim 61, wherein the carbide chemical compound is held in an electrically conductive container. 73. the apparatus of claim 61, wherein the electrochemical cell apparatus anode is contacted with a solution comprising at least one organic solvent and at least one dissolved salt. 74. the apparatus of claim 61, wherein the electrochemical cell apparatus cathode is contacted with a solution comprising at least one organic solvent and at least one dissolved salt. 75. the apparatus of claim 61, wherein the electrochemical cell apparatus cathode is a metal cathode. 76. the apparatus of claim 61, wherein the electrochemical cell apparatus comprises at least one salt bridge or at least one ion exchange membrane. 77. the apparatus of claim 61, wherein the electrochemical cell apparatus comprises an external voltage source to regulate an oxidation reaction of carbide in the carbide chemical compound. 78. the apparatus of claim 61, wherein the apparatus further comprises at least one solution comprising at least one solvent and at least one dissolved salt, and the solution is free of dissolved carbide chemical compound. 79. (canceled) 80. an electrochemical cell apparatus according to claim 61, wherein the anode is an anode electrode structure comprising at least one carbide chemical compound, wherein optionally the carbide chemical compound is a salt-like carbide and at least one electronically conductive structural element different from the carbide chemical compound and contacting the at least one carbide chemical compound. 81. an electrode structure comprising at least one carbide chemical compound, wherein the carbide chemical compound is a salt-like carbide and at least one electronically conductive structural element different from the carbide chemical compound and contacting the at least one carbide chemical compound. 82. the electrode structure of claim 81, wherein the carbide chemical compound is methanide, acetylide, or sesquicarbide. 83. the electrode structure of claim 81, wherein the carbide chemical compound is calcium carbide, aluminum carbide, sodium carbide, magnesium carbide, lithium carbide, or beryllium carbide. 84. the electrode structure of claim 81, wherein the carbide chemical compound is calcium carbide or aluminum carbide. 85. the electrode structure of claim 81, wherein the carbide chemical compound has sufficient electronic conductivity to function as an anode. 86. the electrode structure of claim 81, wherein the carbide chemical compound has an electronic conductivity of at least 10-8 s/cm. 87. the electrode structure of claim 81, wherein the carbide chemical compound is in the form of individual pieces or particles. 88. the electrode structure of claim 81, wherein the carbide chemical compound is in the form of individual pieces or particles having a size of less than one cm. 89. the electrode structure of claim 81, wherein the carbide chemical compound is in the form of individual pieces or particles having a size of at least one micron. 90. the electrode structure of claim 81, wherein the carbide chemical compound is divided into separate portions which are each contacted with at least one electrically conductive structural element. 91. the electrode structure of claim 81, wherein the carbide chemical compound is at least about 95 percent pure. 92. the electrode structure of claim 81, wherein the electronically conductive structural element is a binder for the carbide chemical compound. 93. the electrode structure of claim 81, wherein the electronically conductive structural element is a container and the carbide chemical compound is held in the container. 94. the electrode structure of claim 81, wherein the electronically conductive structural element is a container and the carbide chemical compound is held in the container, and the container has openings which allow fluid to enter the container and contact the carbide chemical compound. 95. the electrode structure of claim 81, wherein the electronically conductive structural element is a metallic container and the carbide chemical compound is held in the metallic container. 96. the electrode structure of claim 81, wherein the electronically conductive structural element comprises at least one conductive rod. 97. the electrode structure of claim 81, wherein the electrode structure is adapted to be removably attached to an apparatus. 98. the electrode structure of claim 81, wherein the electronically conductive structural element of the electrode structure comprises at least one current collector.

99. the electrode structure of claim 81, wherein the electrode structure is adapted for use as an anode in an electrochemical cell apparatus for production of an elemental carbon material. 100. the electrode structure of claim 81, wherein the electrode structure is adapted for use as an anode in a galvanic cell apparatus for production of elemental carbon material. 101.-134. (canceled) 135. the electrode structure of claim 81, wherein the electrode structure is adapted for use other than the production of elemental carbon material. 136. the electrode structure of claim 81, wherein the electrode structure is adapted for use in conversion of aldehyde or carboxylic acid, or reaction of ferric or ferrous ion. 137. the electrode structure of claim 81, wherein the electrode structure is adapted for use in acid mine drainage or in sewage treatment. (Results 71)

Title: METHODS AND APPARATUSES FOR PRODUCTION OF CARBON, CARBIDE ELECTRODES, AND CARBON COMPOSITIONS

Abstract: Method comprising providing at least one solid carbide chemical compound and reducing a metal cation with use of the solid carbide chemical compound. A method comprising producing elemental carbon material from the oxidation of carbide in at least one carbide chemical compound (e.g., calcium carbide) in at least one anode of an electrochemical cell apparatus, such as a galvanic cell apparatus. The cathode can be a variety of metals such as zinc or tin. The reaction can be carried out at room temperature and normal pressure. An external voltage also can be applied, and different forms of carbon can be produced depending on the reactants used and voltage applied. For carrying out the method, an apparatus comprising at least one galvanic cell comprising: at least one anode comprising at least one carbide chemical compound, and at least one cathode. For carrying out the method and constructing the apparatus, an electrode structure comprising at least one carbide chemical compound, wherein the carbide chemical compound is a salt-like carbide; and at least one electronically conductive element different from the carbide. Carbon compositions of various forms are also prepared by the methods and apparatus and with use of the electrode structure. Large pieces of pure carbon can be produced. Post-reaction processing of the carbon can be carried out such as exfoliation.

Classifications:

International (IPC 8-9): B82Y30/00 B82Y40/00 C01B31/00 C01B31/02 C01B31/04 C01B31/06 C01B32/00 C01B32/05 C01B32/182 C01B32/184 C01B32/19 C01B32/20 C01B32/205 C01B32/25 C01B32/26 C01B32/914 C01B32/942 C25B C25B1/00 C25B11/12 C25B5/00 H01B1/04 H01M4/587 H01M6/00 (Advanced/Invention);

B82Y40/00 (Advanced/Non-invention);

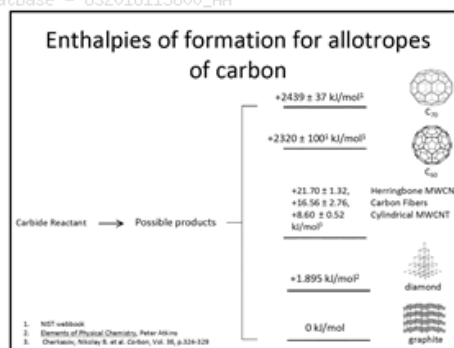
B82Y30/00 B82Y40/00 C25B1/00 (Core/Invention);

C25B (Subclass/Invention)

CPC: C25B1/00 H01B1/04 C25B11/12 C01B2204/22 C01B31/32 C01B31/303 C01P2002/82 C01P2002/85 C01P2004/03 C01P2004/60 C01P2004/61 C01B32/942 C01B32/914 B82Y40/00 C01B32/00 C01B32/05 C01B32/182 C01B32/184 C01B32/20 C01B32/25

US: 204/242 204/252 204/286.1 204/292 204/294 205/560 205/566 205/576 205/588 205/603 205/610 205/615 252/502 423/445R 423/446 423/448 428/402

PatBase - US2016115600_AA



Title: PROCESS FOR PURE CARBON PRODUCTION

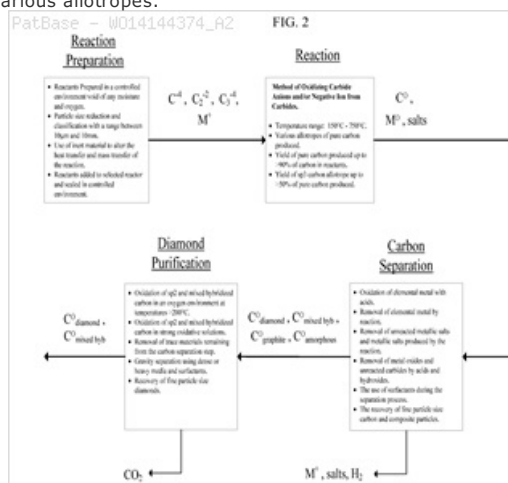
Abstract: The disclosure provides for methods of oxidizing carbide anions, or negative ions, from salt like carbides at low temperatures below about 600 degrees centigrade. In another aspect, the disclosure provides for reactions with intermediate transition metal carbides. In yet another aspect, the disclosure provides for a system of reactions where salt-like carbide anions and intermediate carbide anions are oxidized to produce pure carbon of various allotropes.

Classifications:

International (IPC 8-9): C01B C01B31/00 C01B31/02 C01B31/04 C01B31/06 C01B31/32 C01B32/00 C01B32/05 C01B32/15 C01B32/182 C01B32/184 C01B32/205 C01B32/25 C01B32/26 C01B32/36 C01B32/942 C01F11/28 C01F7/58 (Advanced/Invention); C01B31/30 C01B32/90 (Advanced/Non-invention); C01B (Subclass/Invention)

CPC: C01F7/58 C01F11/28 C01B32/05 C01B32/184 C01B32/26 C01B32/914 C01B32/942 C01B32/36 C01B32/25

US: 423/445R 423/446 423/448

**Family:**

Publication number	Publication date	Application number	Application date
AU2014227565 AA	20140918	AU20140227565	20140314
AU2014227565 BB	20170202	AU20140227565	20140314
AU2017202621 AA	20170511	AU20170202621	20170420
BR112015023501 A2	20170718	BR20151123501	20140314
CA2905499 AA	20150910	CA20142905499	20140314
CA2905499 C	20180626	CA20142905499	20140314
CA3004581 AA	20140918	CA20143004581	20140314
CN105189346 A	20151223	CN201480025010	20140314
CN105189346 B	20180508	CN201480025010	20140314
CN108439366 A	20180824	CN201810446701	20140314
EP2969940 A2	20160120	EP20140764834	20140314
EP2969940 A4	20161214	EP20140764834	20140314
HK1219090 A1	20170324	HK20160107149	20160621
IL241356 A0	20151130	IL20140241356	20140314
IN08394DN2015 A	20160701	IN2015DN08394	20150915
JP2016517388 T2	20160616	JP20160502890T	20140314
JP2018035064 A2	20180308	JP20170184492	20170926
JP6218917 B2	20171025	JP20160502890T	20140314
KR101858799 B1	20180516	KR20157028436	20140314
KR20150131164 A	20151124	KR20157028436	20140314
KR20180051669 A	20180516	KR20187012880	20140314
MX2015012888 A1	20160404	MX20150012888	20140314
US2014271441 AA	20140918	US20140213533	20140314
US2016002049 AA	20160107	US20140772629	20140314
US2017320741 AA	20171109	US20170618802	20170609
US2017320742 AA	20171109	US20170618804	20170609
US9701539 BB	20170711	US20140213533	20140314
US9764958 BB	20170919	US20140772629	20140314
US10035709 BB	20180731	US20170618804	20170609
WO14144374 A2	20140918	WO2014US28755	20140314
WO14144374 A3	20141120	WO2014US28755	20140314
ZA201506835 A	20161221	ZA20150006835	20140314

Priority:

US20130798198P	20130315	AU20140227565	20140314	JP20160502890T	20140314
CA20142905499	20140314	CN201480025010	20140314	US20140213533	20140314
WO2014US28755	20140314	US20140772629	20140314	US20150772629	20150903
AU20170202621	20170420	US20170618802	20170609	US20170618804	20170609
CA20182905499	20180524				

Probable Assignee: WEST VIRGINIA UNIV RESEARCH CORP

Assignee(s): (std): UNIV WEST VIRGINIA ; WEST VIRGINIA UNIV RES CORP ; UNIV WEST VIRGINIA RES CORP ; WEST VIRGINIA UNIV RESEARCH CORP

Assignee(s): STILLER ALFRED ; UNIV WEST VIRGINIA RESEARCH CORP ; WEST VIRGINIA UNIV

Inventor(s): (std): STILLER ALFRED ; STILLER ALFRED A ; STILLER ALFRED H ; ALFRED STILLER

Agent(s): FISHER ADAMS KELLY PTY LTD; FISHER ADAMS KELLY CALLINANS; SPRUSON AND FERGUSON; BERESKIN

AND PARR LLP SENCRL SRL; THURSTON JOANNA; YAMAMOTO OSAMU; TAKEUCHI SHIGEO; ONO SHINJIRO;
MATSUYAMA MINAKO; KOBAYASHI YASUSHI; MIYAMAE TORU; NAKANISHI MOTOHARU; TERACHI TAKUMI;
MARBURY LAW GROUP PLLC; VANIK DAVID L

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: PREPARATION OF CARBIDE NANORODS

Abstract: A process utilizing a supported metal catalyst, a volatile species source, and a carbon source has been developed to produce carbide nanorods with diameters of less than about 100 nm and aspect ratios of 10 to 1000. The volatile species source, carbon source, and supported metal catalyst can be used to produce carbide nanorods in single run, batch, and continuous reactors under relatively mild conditions. The method employs a simple catalytic process involving readily available starting materials.

Classifications:

International (IPC 8-9): C01B31/02 D01F9/08 (Advanced/Invention);

C01B31/00 D01F9/08 (Core/Invention)

International (IPC 1-7): C01B31/30 C01B31/34

CPC: Y10S977/843 Y10S977/844 D01F9/08 B82Y30/00 B82Y40/00 C01B32/162

European: B82Y30/00 B82Y40/00 C01B31/02B4B2 D01F9/08

US: 423/249 423/263 423/345 423/346 423/439 423/440 977/843 977/844

Family:

Publication number	Publication date	Application number	Application date
 AU199861877 A1	19980922	AU19980061877	19980304
 US5997832 A	19991207	US19970814745	19970307
 WO9839251 A1	19980911	WO1998US04183	19980304

Priority:

US19970814745 19970307 WO1998US04183 19980304

Probable Assignee: PRESIDENT AND FELLOWS OF HARVARD COLLEGE

Assignee(s): (std): HARVARD COLLEGE

Assignee(s): NATIONAL SCIENCE FOU ; NATIONAL SCIENCE FOUNDATION ; PRESIDENT AND FELLOWS OF HARVARD COLLEGE

Inventor(s): (std): WONG ERIC ; LIEBER CHARLES M

Inventor(s): CHARLES M LIEBER ; ERIC WONG

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

Title: PROCESS FOR RECOVERING TUNGSTEN CARBIDE FROM CEMENTED TUNGSTEN CARBIDE SCRAPS BY SELECTIVE ELECTROLYSIS

Abstract: A process of recovering tungsten carbide from cemented tungsten carbide scraps by selective electrolysis is disclosed. A chelating agent is added to the electrolyte for complexing with tungsten ion to prevent passivation of tungsten carbide, and thus the dissolution rate of the cementing agent is increased.

Classifications:

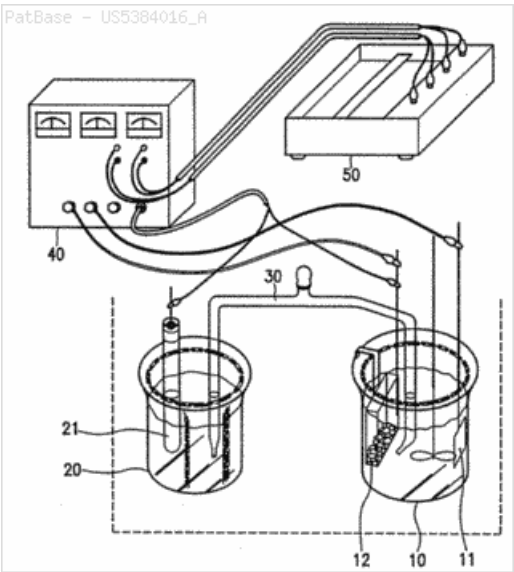
International (IPC 8-9): C01B31/34 C01B32/949 (Advanced/Invention); C01B31/00 (Core/Invention)

International (IPC 1-7): C25F1/00

CPC: C01B32/949

European: C01B31/34

US: 204/105R 204/141.5 204/64R 204/86 205/478



Family:

Publication number	Publication date	Application number	Application date
US5384016 A	19950124	US19930150376	19931110

Priority:

US19930150376 19931110

Probable Assignee: NATIONAL SCIENCE COUNCIL

Assignee(s): (std): NAT SCIENCE COUNCIL

Assignee(s): NATIONAL SCIENCE COUNCIL ; NATIONAL SCIENCE COUNCIL FL

Inventor(s): (std): LEE SHENG LONG ; LIN JAINN YUAN ; LIN JING CHIE

Title: PROCESS OF ISOLATING CARBON NANOTUBES FROM A MIXTURE CONTAINING CARBON NANOTUBES AND GRAPHITE PARTICLES

Abstract: Carbon nanotubes are isolated from a mixture containing the carbon nanotubes and graphite particles by a process including the steps of: finely pulverizing the mixture; dispersing the pulverized product in a liquid medium; centrifuging the resulting dispersion to obtain a supernatant containing carbon nanotubes and graphite particles having a particle size of 0.3 μm or less; separating the supernatant into a solid phase and a liquid phase; and calcining the solid phase in an oxygen-containing atmosphere at a temperature sufficient to burn the graphite particles and to leave the nanotubes.

Classifications:

International (IPC 8-9): C01B31/02 D01F9/12 (Advanced/Invention);
C01B31/00 D01F9/12 (Core/Invention)

International (IPC 1-7): C01B31/02 D01F9/12

CPC: Y10S977/734 Y10S977/742 Y10S977/773 Y10S977/845 B82Y30/00 D01F9/12 B82Y40/00 C01B32/17 C01B32/172

European: B82Y30/00 B82Y40/00 C01B31/02B4D2 C01B31/02B4D4 D01F9/12

US: 423/445.00B 423/445B 423/447.2 423/461 977/734 977/742 977/773 977/845

Family:

Publication number	Publication date	Application number	Application date
JP2099161 C3	19961022	JP19930212270	19930804
JP7048111 A2	19950221	JP19930212270	19930804
JP8022733 B4	19960306	JP19930212270	19930804
US5560898 A	19961001	US19940283508	19940801

Priority:

JP19930212270 19930804

Probable Assignee: DIRECTOR GENERAL OF AGENCY OF INDUSTRIAL

Assignee(s): (std): AGENCY IND SCIENCE TECHN

Assignee(s): AGENCY OF IND SCIENCE AND TECHNOL ; AGENCY OF INDUSTRIAL SCIENCE AND TECHNOLOGY ; DIRECTOR GENERAL OF AGENCY OF INDUSTRIAL ; DIRECTOR GENERAL OF AGENCY OF INDUSTRIAL SCIENCE A ; DIRECTOR GENERAL OF AGENCY OF INDUSTRIAL SCIENCE AND TECHNOLOGY ; KOGYO GIJUTSUIN

Inventor(s): (std): IGASAKI FUMIKAZU ; IKAZAKI FUMIKAZU ; KURIKI YASUNORI ; OHSHIMA SATOSHI ; OSHIMA SATORU ; UCHIDA KUNIO ; YASE KIYOSHI ; YATSUSE KIYOSHI ; YUMURA MORIO ; YUMURA MOTOO

Inventor(s): YATSUSE KYOSHI ; OOSHIMA SATORU

Title: NORMAL TEMPERATURE CARBURIZING METHOD

Abstract: PROBLEM TO BE SOLVED: To provide a normal temperature carburizing method to reduce the deformation of a product and to improve the wear resistance and the fatigue strength of the product by performing the carburizing treatment of steel through a blast treatment and treating it at a normal temperature using a device less in pollution and inexpensive. SOLUTION: When carbide powder preferably higher in hardness and a melting point than a product to be treated is ejected against the surface of the product to be treated consisting of carbon steel, special steel or a mixed body thereof, the change in speed of the carbide powder before and after the collision is converted into thermal energy and the temperature of the surface of the product to be treated and the carbide powder rises. At this time, since the carbide powder is thermally decomposed and the carbon element in the carbide powder is diffused into the surface of the product to be treated, the carburizing treatment is performed.

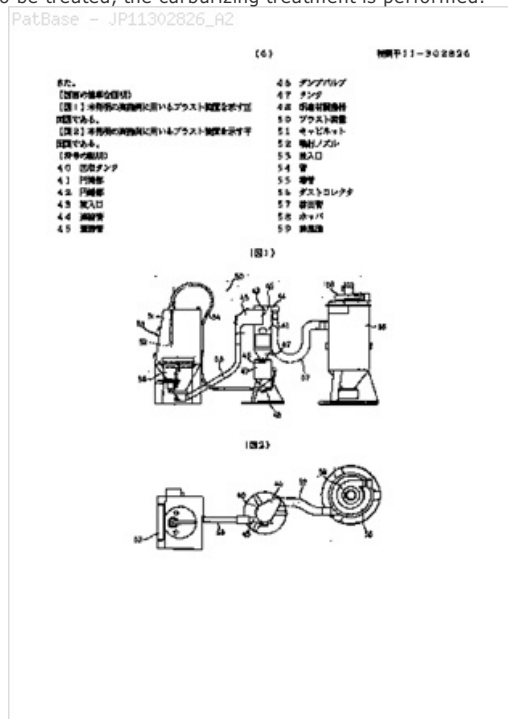
Classifications:

International (IPC 8-9): C23C24/00 C23C26/00 C23C8/64

C23C8/66 (Advanced/Invention);

C23C24/00 C23C26/00 C23C8/00 (Core/Invention)

International (IPC 1-7): C23C24/00 C23C26/00 C23C8/64 C23C8/66



Family:

Publication number	Publication date	Application number	Application date
JP11302826 A2	19991102	JP19980113601	19980423
JP3242060 B2	20011225	JP19980113601	19980423

Priority:

JP19980113601 19980423

Probable Assignee: FUJI KIHAN KK

Assignee(s): (std): FUJI KIHAN KK

Inventor(s): (std): KAGAYA TADAHARU ; MIYASAKA YOSHIO

Title: SINTERABLE CARBIDES FROM OXIDES USING HIGH ENERGY MILLING

Abstract: A method for the synthesis of micron- and submicron-sized, nanostructured metal carbide powders, comprising high energy milling of metal oxide and carbon precursors followed by annealing of the as-milled powders. The annealing is preferably carried out under a flow of inert gas or subatmospheric pressure to drive the reaction to completion in one to two hours. The powders thus synthesized comprise high purity particles having a narrow particle size range.

Classifications:

International (IPC 8-9): C01B31/30 C01B31/36 (Advanced/Invention); C01B31/00 (Core/Invention)

International (IPC 1-7): C01B21/36 C01B31/30 C22C32/00

CPC: C01B32/914 C01B32/956 B82Y30/00 C01P2002/60 C01P2002/72 C01P2004/52 C01P2004/62 C01P2004/64 C01P2006/12

European: B82Y30/00 C01B31/30D C01B31/36 M01P2/60 M01P2/72 M01P4/52 M01P4/62 M01P4/64 M01P6/12

US: 419/17 419/18 423/345 423/439 423/440 75/240

PatBase - US6214309_BA

U.S. Patent Apr. 10, 2001 Sheet 1 of 4 US 6,214,309 B1

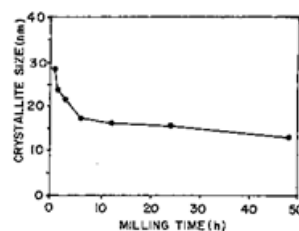


FIG. 1

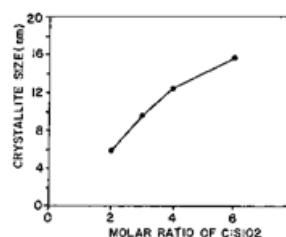


FIG. 2

Family:

Publication number	Publication date	Application number	Application date
AU199895729 A1	19990412	AU19980095729	19980918
EP1025043 A1	20000809	EP19980949397	19980918
NO20001519 A	20000503	NO20000001519	20000323
NO20001519 A0	20000323	NO20000001519	20000323
US6214309 BA	20010410	US19970936868	19970924
US6793875 BA	20040921	US20000652513	20000831
WO9915461 A1	19990401	WO1998US19671	19980918

Priority:

US19970936868 19970924 WO1998US19671 19980918 US19990152497P 19990902
US20000652513 20000831

Probable Assignee: CONNECTICUT UNIV OF

Assignee(s): (std): THE UNIVERSITY OF CONNECTICUT ; UNIV CONNECTICUT

Assignee(s): UNIVERSITY OF CONNECTICUT ; CONNECTICUT UNIV ; CONNECTICUT UNIV OF ; OF CONNECTICUT UNIV

Inventor(s): (std): ZHENGUO YANG ; YANG ZHENGUO ; SHAW LEON L ; RUIMING REN ; REN RUIRNING ; REN RUIMING ; LEON L SHAW

Designated states: AL AM AT AU AZ BA BB BE BG BR BY CA CH CN CU CY CZ DE DK EE ES FI FR GB GE GH GM GR HR HU ID IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK MN MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW

Title: PROCESS FOR OBTAINING ALKALI METALS

Classifications:

International (IPC 8-9): C 22B26/10 (Advanced/Invention);
C 22B26/00 (Core/Invention)

CPC: C 22B26/10

European: C 22B26/10

US: 252/181.7 75/590

Family:

Publication number	Publication date	Application number	Application date
 US1528824 A	19250310	US19200394600	19200707

Priority:

US19200394600 19200707

Probable Assignee: CHARLES STAEHLING

Assignee(s): (std): CHARLES STAEHLING ; LOUIS HACKSPILL

Inventor(s): (std): LOUIS HACKSPILL ; CHARLES STAEHLING

Inventor(s): STAEHLING CHARLES ; HACKSPILL LOUIS

Title: HIGH SURFACE AREA NITRIDE, CARBIDE AND BORIDE ELECTRODES AND METHODS OF FABRICATION THEREOF

Abstract: High surface area electrodes for use in electrical and electrochemical energy storage and conversion devices comprise conductive transition metal nitrides, carbides, borides or combinations thereof where the metal is molybdenum or tungsten. Disclosed is a method of manufacturing such electrodes by forming or depositing a layer of metal oxide, then exposing the metal oxide layer at elevated temperature to a source of nitrogen, carbon or boron in a chemically reducing environment to form the desired metal nitride, carbide or boride film. Also disclosed is an ultracapacitor comprised of the new high surface area electrodes having a specific capacitance of 100 mF/cm² and an energy density of 100 mJ/cm³ with improved conductivity and chemical stability when compared to currently available electrodes.

Classifications:

International (IPC 8-9): H01G11/22 H01G11/30 H01G11/46 H01G11/86
H01G9/00 H01G9/02 H01G9/04 H01G9/058 H01G9/155 H01M4/00
H01M4/02 H01M4/04 H01M4/48 H01M4/58 H01M4/86
H01M4/88 (Advanced/Invention);
H01G9/058 H01M4/00 H01M4/02 H01M4/04 H01M4/58
H01M4/88 (Advanced/Non-invention);

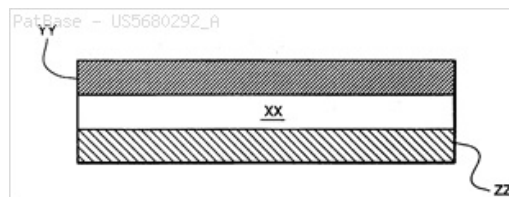
H01G9/00 H01G9/02 H01G9/04 H01G9/058 H01G9/155 H01M4/00
H01M4/02 H01M4/04 H01M4/58 H01M4/86 H01M4/88 (Core/Invention)

International (IPC 1-7): B05D5/12 H01G9/00 H01G9/02 H01G9/04
H01G9/058 H01M4/02 H01M4/04 H01M4/58 H01M4/86 H01M4/88

CPC: H01M4/00 H01G9/155 H01M4/86 Y02E60/13

European: H01G9/00D H01G9/155 H01M4/00 H01M4/86 Y02E60/13 Y02E60/50

US: 361/528 361/532 427/528 427/530



Family:

Publication number	Publication date	Application number	Application date
AU199645125 A1	19960703	AU19960045125	19951211
CA2207387 AA	19970609	CA19952207387	19951211
CA2207387 C	20071016	CA19952207387	19951211
DE69532172 D1	20031224	DE19956032172	19951211
DE69532172 T2	20040812	DE19956032172T	19951211
EP0808507 A1	19971126	EP19950943721	19951211
EP0808507 A4	19981007	EP19950943721	19951211
EP0808507 B1	20031119	EP19950943721	19951211
JP10510679 T2	19981013	JP19960519174T	19951211
JP3900303 B2	20070404	JP19960519174T	19951211
US5680292 A	19971021	US19940354289	19941212
WO9619003 A1	19960620	WO1995US15994	19951211

Priority:

US19940354289 19941212 WO1995US15994 19951211

Probable Assignee: A123 SYSTEMS LLC

Assignee(s): (std): T J TECHNOLOGIES INC ; THOMPSON LEVI T JR ; WIXOM MICHAEL R ; PARKER JEFFERY M

Assignee(s): THOMPSON LEVI T ; WANXIANG AMERICA CORP ; WANXIANG CLEAN ENERGY USA ACQUISITION LLC ; A123 SYSTEMS INC ; A123 SYSTEMS LLC ; AIR FORCE UNITED STATES ; AIR FORCE UNITED STATES AFMC LO JAZ

Inventor(s): (std): PARKER JEFFERY M ; PARKER M ; THOMPSON LEVI T JR ; THOMPSON T ; WIXOM MICHAEL R ; WIXOM R ; THOMPSON JR LEVI T

Inventor(s): THOMPSON LEVI T ; JEFFERY M PARKER ; LEVI T THOMPSON JR ; MICHAEL R WIXOM

Agent(s): RIDOUT AND MAYBEE LLP

Designated states: AT AU BE BR CA CH DE DK ES FR GB GR IE IT JP KR LU MC MX NL PT SE SG US

Title: PROCESS OF MANUFACTURING METALLIC MAGNESIUM

Abstract: 1. In a process for the manufacture of metallic magnesium by thermal reduction of magnesium oxide with calcium carbide, the steps of intermixing the calcium carbide with magnesium oxide in proportions such that there is an excess of calcium carbide present over that theoretically required to combine with the magnesium oxide, subjecting the mixture to a. reducing operation at an elevated temperature, intermixing the residue of the reducing operation with additional magnesium oxide, and then subjecting the last-named mix to a second thermal reduction operation at an elevated temperature for reduction of the additional magnesium oxide.

Classifications:

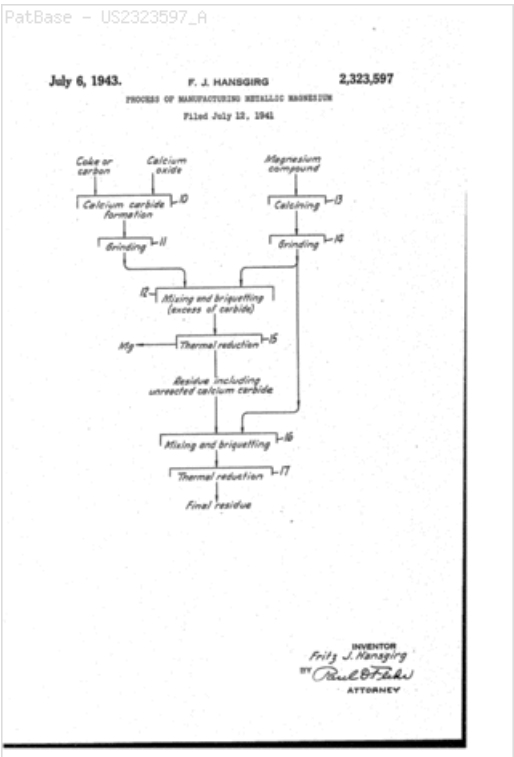
International (IPC 8-9): C22B26/22 (Advanced/Invention);
C22B26/00 (Core/Invention)

International (IPC 1-7): C22B45/00

CPC: C22B26/22

European: C22B26/22

US: 75/597



Family:

Publication number	Publication date	Application number	Application date
US2323597 A	19430706	US19410402160	19410712

Priority:

US19410402160 19410712

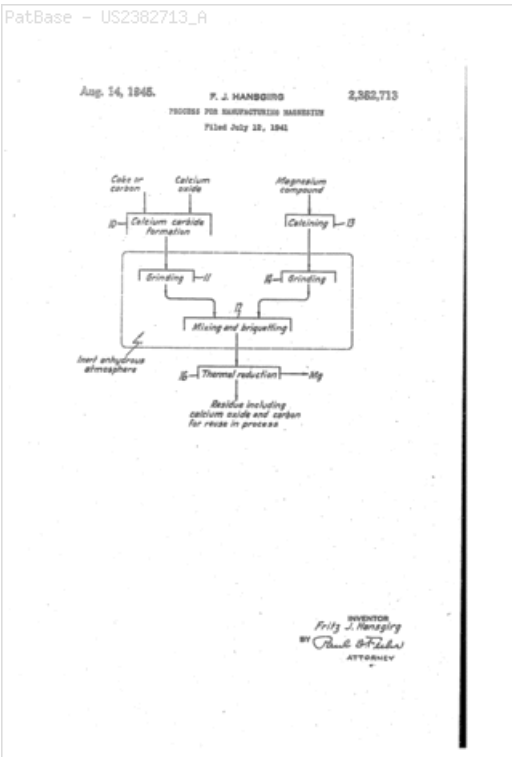
Probable Assignee: MARINE MAGNESIUM PRODUCTS CORP

Assignee(s): (std): MARINE MAGNESIUM PRODUCTS CORP

Inventor(s): (std): HANSGIRG FRITZ J

Title: PROCESS FOR MANUFACTURING MAGNESIUM

Classifications:
International (IPC 8-9): C22B26/22 (Advanced/Invention);
C22B26/00 (Core/Invention)
International (IPC 1-7): C22B45/00
CPC: C22B26/22
European: C22B26/22
US: 75/597



Family:

Publication number	Publication date	Application number	Application date
US2382713 A	19450814	US19410402161	19410712

Priority:

US19410402161 19410712

Probable Assignee: MARINE MAGNESIUM PRODUCTS CORP
Assignee(s): (std): MARINE MAGNESIUM PRODUCTS CORP
Inventor(s): (std): HANSGIRG FRITZ J

Title: Method for producing calcium or calcium alloys and silicon of high purity

Abstract: PCT No. PCT/FR85/00266 Sec. 371 Date May 29, 1986 Sec. 102(e) Date May 29, 1986 PCT Filed Sep. 27, 1985 PCT Pub. No. WO86/02108 PCT Pub. Date Apr. 10, 1986. The method causes the deposition of calcium or calcium alloy to a cathode by electrolysis of a calcium derivative in a bath of molten salts based on calcium halides. The calcium derivative is in solution into the molten salt bath in ionic form. For producing calcium alloy, calcium is caused to deposit on a liquid metal cathode and the calcium is alloyed in situ with the metal of the cathode to form the alloy. The method enables the production at the anode of high purity metals such as graphite carbon or silicon from calcium carbide, respectively calcium silide or calcium silicon. It is also possible to obtain high purity calcium by decomposition of the alloy obtained by vacuum distillation.

Classifications:

International (IPC 8-9): C22C1/02 C25B1/00 (Advanced/Invention);
C22C1/02 C25B1/00 (Core/Invention)

International (IPC 1-7): C01B33/02 C22B26/20 C22C1/02 C22C24/00 C25B1/00 C25C1/24 C25C3/00 C25C3/02 C25C3/36

CPC: C25B1/00 C25B1/006 C25C3/02 C25C3/36

European: C25B1/00 C25B1/00F C25C3/02 C25C3/36

US: 204/60 204/69 204/71 205/354 205/363 205/364 205/366 205/402

Family:

Publication number	Publication date	Application number	Application date
AU198550110 A1	19860417	AU19850050110	19850927
BRPI8507254 A	19871027	BR1985PI07254	19850927
EP0230411 A1	19870805	EP19850904824	19850927
ES547525 A0	19860716	ES19850547525	19851003
ES8608449 A1	19860716	ES19850547525	19851003
FI871421 A	19870401	FI19870001421	19870401
FI871421 A0	19870401	FI19870001421	19870401
FR2571353 A1	19860411	FR19840015506	19841005
FR2571353 B1	19870213	FR19840015506	19841005
FR2573442 A1	19860523	FR19840017941	19841121
FR2573442 B1	19890421	FR19840017941	19841121
JP62500527 T2	19870305	JP19850504380	19850927
NO862234 A	19860604	NO19860002234	19860604
NO862234 A0	19860604	NO19860002234	19860604
PT81241 A	19851101	PT19850081241	19851002
PT81241 B	19870428	PT19850081241	19851002
US4738759 A	19880419	US19860876857	19860529
WO8602108 A1	19860410	WO1985FR00266	19850927

Priority:

FR19840015506 19841005 FR19840017941 19841121 WO1985FR00266 19850927

Probable Assignee: EXTRAMET SA

Assignee(s): (std): EXTRAMET SA ; EXTRAMET ZONE IND SA

Assignee(s): EXTRAMET SA ZONE IND ; EXTRAMET ; EXTRAMET S A ; EXTRAMET S A ZONE INDUSTRIELLE

Inventor(s): (std): DOMINIQUE DUBRUQUE ; GERARD BIENVENU ; DUBRUQUE DOMINIQUE ; BIENVENU GERARD

Inventor(s): GERARD BIENVENU ET DOMINIQUE DUBRUQUE

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

Designated states: AT AU BE BR CH DE DK FI FR GB IT JP KR LI LU NL NO SE US

Title: SILICON TETRACHLORIDE MANUFACTURE

Abstract: (Claim 1) 1. In the process of chlorinating silicon carbide to produce silicon tetrachloride, the step of cleaning a hot chlorination reactor containing silicon carbide, and elementary carbon, comprising introducing an oxygen-containing gas into the chamber while maintaining the chamber at an elevated temperature whereby a portion of the carbon is oxidized and a portion of the carbon is entrained and blown from the furnace.

Classifications:

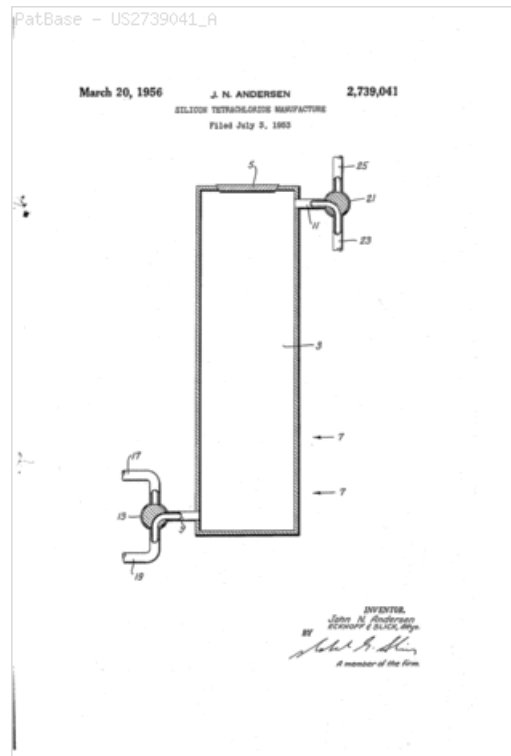
International (IPC 8-9): C01B33/08 (Advanced/Invention);
C01B33/00 (Core/Invention)

International (IPC 1-7): C01B33/08

CPC: C01B33/08

European: C01B33/08

US: 134/39 422/198 423/343



Family:

Publication number	Publication date	Application number	Application date
US2739041 A	19560320	US19530365806	19530703

Priority:

US19530365806 19530703

Probable Assignee:

STAUFFER CHEMICAL CO

Assignee(s): (std):

STAUFFER CHEMICAL CO

Assignee(s):

STAUFFER CHEMICAL COMPANY

Inventor(s): (std):

ANDERSEN JOHN N

Title: MINERAL ACTIVE CARBON AND PROCESS FOR PRODUCING SAME

Abstract: (Claim 1) 1. A process for producing mineral active carbon comprising chlorinating, at an elevated temperature, a material from the group consisting of carbides and carbonitrides of an element from the group consisting of metals 6d and metalloids whose chlorides are volatile at said elevated temperature, volatilizing and removing the resultant chloride from the reaction mass and dechlorinating the residual carbon to obtain a highly adsorbent mineral active carbon containing no bound hydrogen.

Classifications:

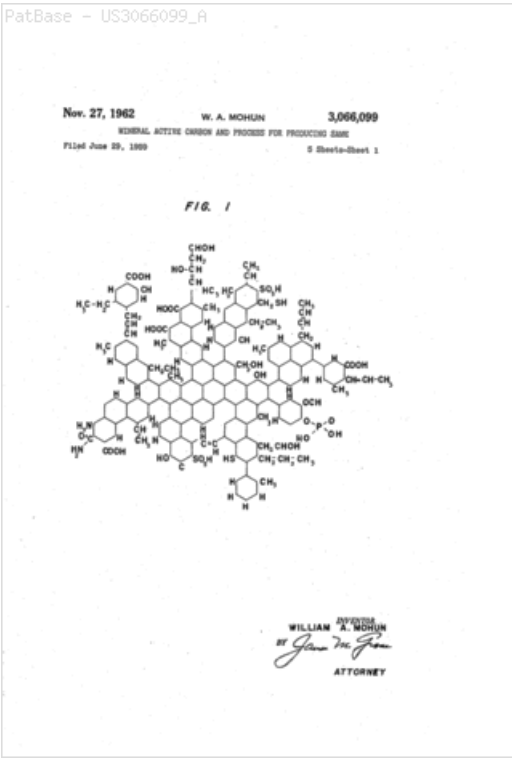
International (IPC 8-9): B01J27/22 C01B31/08 (Advanced/Invention); B01J27/20 C01B31/00 (Core/Invention)

International (IPC 1-7): C01B31/08

CPC: B01J27/22 C01B32/30

European: B01J27/22 C01B31/08

US: 423/449.1 502/423 502/432 502/438



Family:

Publication number	Publication date	Application number	Application date
US3066099 A	19621127	US19590823384	19590629

Priority:

US19590823384 19590629

Probable Assignee:

NILOK CHEMICALS INC

Assignee(s): (std):

NILOK CHEMICALS INC

Inventor(s): (std):

MOHUN WILLIAM A

Title: PRODUCTION OF ELEMENTAL BORON ELECTROLYTICALLY

Abstract: (Claim 1) 1. A process for produeodon of boron comprising passing a current between a boron carbide anode and a cathode under a potential of less than about 3 volts through a fused salt bath at a temperature between about 375' C. and about 1000' C. to deposit boron on the cathode, the bath consisting essentially of an alkali metal chloride and an alkali metal fluoborate, the fluoborate providing from about 3% to about 50% of the mixture.

Classifications:

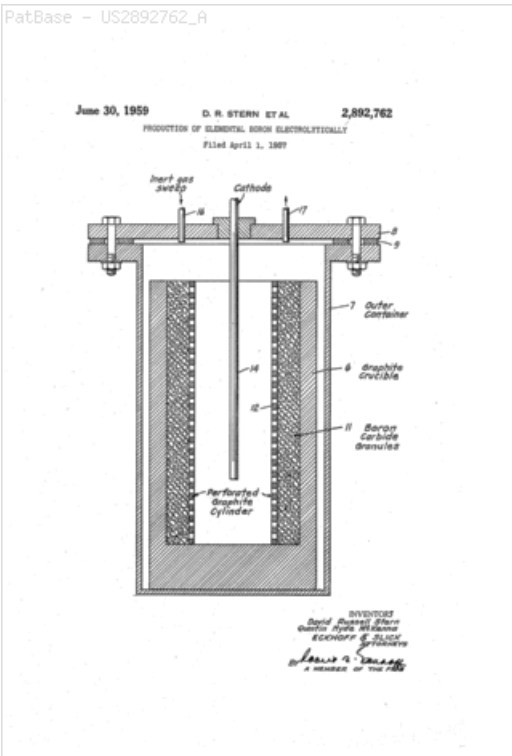
International (IPC 8-9): C01B35/02 C25B1/00 C25C3/34 (Advanced/Invention); C01B35/00 C25B1/00 C25C3/00 (Core/Invention)

International (IPC 1-7): C01B35/02

CPC: C01B35/023 C25B1/00 C25C3/34

European: C01B35/02B C25B1/00 C25C3/34

US: 204/246 205/410



Family:

Publication number	Publication date	Application number	Application date
US2892762 A	19590630	US19570649730	19570401

Priority:

US19570649730 19570401

Probable Assignee: AMERICAN POTASH AND CHEM CORP
Assignee(s): (std): AMERICAN POTASH AND CHEM CORP
Assignee(s): AMERICAN POTASH AND CHEMICAL CORP
Inventor(s): (std): STERN DAVID R ; MCKENNA QUENTIN H

Title: PRODUCTION OF CARBIDE PRODUCT AND METHYLACETYLENE

Abstract: (Claim 1) 1. A process of producing a product containing magnesium sesquicarbide which comprises heating and reacting calcium carbide and substantially anhydrous magnesium chloride, said reactants being in finely-divided state and in intimate contact, carrying out the reaction in an inert atmosphere, and maintaining the reaction mixture at a temperature at least sufficient for the formation of magnesium sesquicarbide but below that which causes any substantial melting of the magnesium chloride and any substantial decomposition of the magnesium sesquicarbide whereby said calcium carbide and said magnesium chloride are reacted in a solid state.

Classifications:

International (IPC 8-9): C07F3/02 (Advanced/Invention);

C07F3/00 (Core/Invention)

CPC: Y10S585/931 Y10S585/943 C07F3/02

European: C07F3/02

US: 252/372 423/439 585/325 585/538 585/931 585/943

Family:

Publication number	Publication date	Application number	Application date
 US2729689 A	19560103	US19520290319	19520527

Priority:

US19520290319 19520527

Probable Assignee: AIR REDUCTION

Assignee(s): (std): AIR REDUCTION

Assignee(s): AIR REDUCTION CO INC

Inventor(s): (std): MCKENNA FRANCIS E ; BLANCHARD EDWARD R

Title: THERMAL PROCESS FOR PRODUCING ALKALI METALS AND MAGNESIUM

Abstract: (Claim 1) 1. The process of manufacturing metals selected from the group consisting of alkali metals and magnesium, comprising the following steps: vaporizing a chloride of a metal selected from the said group in a retort; heating a zone containing solid calcium carbide; passing the metallic chloride vapors through said heated zone while maintaining in said zone a pressure substantially less than atmospheric, whereby the chloride vapors are reduced and metallic vapors are produced; condensing the last mentioned metallic vapors, and recovering the condensed product.

Classifications:

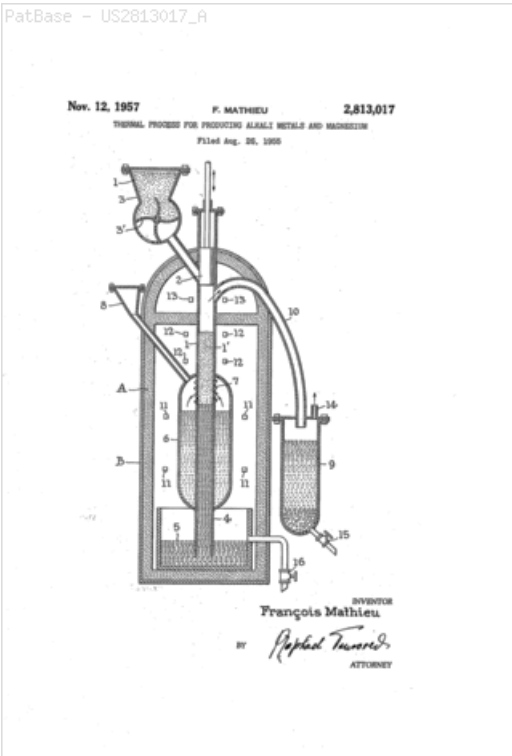
International (IPC 8-9): C22B26/00 C22B26/10
C22B26/22 (Advanced/Invention);
C22B26/00 (Core/Invention)

International (IPC 1-7): C22B27/00

CPC: C22B26/00 C22B26/10 C22B26/22

European: C22B26/00 C22B26/10 C22B26/22

US: 420/400 75/590 75/597



Family:

Publication number	Publication date	Application number	Application date
US2813017 A	19571112	US19550530742	19550826

Priority:

19540903 US19550530742 19550826

Probable Assignee: PECHINEY PROD CHIMIQUES SA

Assignee(s): (std): PECHINEY PROD CHIMIQUES SA

Assignee(s): PECHINEY COMP DE ET ELECTROMETALLURGIQUES PROD CHIM ; PECHINEY COMPAGNIE DE PRODUITS CHIMIQUES ET ELECTR ; PECHINEY COMPAGNIE DE PRODUITS CHIMIQUES ET ELECTROMETALLURGIQUES

Inventor(s): (std): FRANCOIS MATHIEU

Inventor(s): MATHIEU FRANCOIS

Title: SOLUTION OF A CARBIDE IN A MOLTEN HALIDE

Abstract: Calcium carbide is dissolved in an anhydrous or substantially anhydrous molten halide of lithium, calcium, strontium or barium or a mixture of such halides. The calcium carbide which may be in lump, pellet, finely-divided or other suitable form is introduced together with the halide mixture into a reaction vessel lined with stainless-steel, the vessel is heated electrically and a homogeneous solution is formed. The dissolution should be effected in an inert atmosphere, e.g. of argon. Fluxing agents, e.g. sodium and potassium halides, for instance the chlorides, may be added to the molten halide mixture. At atmospheric pressure, the temperatures used for the dissolution can be varied from the melting point of the solvent halide or mixture thereof with a fluxing agent to the point at which the mixture or solvent halide alone volatilizes, e.g. 350 DEG to 2200 DEG C. Higher temperatures can be used by employing super-atmospheric pressure. In preparing the solution either the molten halide solvent is first prepared and the carbide added to it, or the solid carbide and halide are first mixed and the mixture then heated to melt the halide and dissolve the carbide in the molten mass. In the examples, the molten halides used are (a) lithium chloride, (b) calcium chloride, (c) lithium bromide, (d) a mixture of lithium chloride and potassium chloride, (e) barium chloride, (f) lithium fluoride and (g) a eutectic mixture of lithium chloride and lithium fluoride. ALSO: Metallic lead is prepared by adding anhydrous lead chloride to a molten solution of calcium carbide in lithium chloride at 820 DEG C., the yield of lead being about 50 percent of the theoretical.

Classifications:

International (IPC 8-9): C01B31/30 C22B26/00 (Advanced/Invention);
C01B31/00 C22B26/00 (Core/Invention)

International (IPC 1-7): C01B31/32

CPC: C01B32/907 C22B26/00 C01P2006/80

European: C01B31/30B C22B26/00 M01P6/80

US: 252/182.32 75/308 75/309 75/312

Family:

Publication number	Publication date	Application number	Application date
GB935503 A	19630828	GB19600032734	19600923
US3031413 A	19620424	US19590843076	19590929

Priority:

US19590843076 19590929

Probable Assignee: AMERICAN CYANAMID CO

Assignee(s): (std): AMERICAN CYANAMID CO

Assignee(s): AMERICAN CYANAMID COMPANY

Inventor(s): (std): SLOAN CAROL L ; BARBER WILLIAM A

Title: METHOD OF DIAMOND SYNTHESIS**Abstract:**

FIELD: production of synthetic diamond monocrystals at preset physical properties. SUBSTANCE: proposed method is based on decomposition of silicon carbide in aqueous medium into which at least one soluble chloride of magnesium, calcium, chromium or iron is introduced. Silicon carbide decomposition process is conducted at temperature range of from 200 C to 350 C. Chemical soluble agents containing diamond alloying admixtures may be additionally introduced into aqueous medium. EFFECT: simplified procedure; low cost of process; low level of defects in crystal lattices; possibility of alloying diamonds with admixtures for obtaining required physical properties. 2 cl, 2 dwg, 1 tbl

Classifications:**International (IPC 8-9):** C01B31/06 C30B29/04 C30B7/04

C30B7/10 (Advanced/Invention);

C30B29/04 C30B7/00 (Core/Invention)

International (IPC 1-7): C30B29/04 C30B7/04**Family:**

Publication number	Publication date	Application number	Application date
RU2181795 C2	20020427	RU19990102580	19990208
RU99102580 A	20010410	RU19990102580	19990208

Priority:

RU19990102580 19990208

Probable Assignee: NTAL NOJ FIZ

Assignee(s): (std): NTAL NOJ FIZ ; MRF ATOMNOJ EHNE ; NTAL NOJ FIZIKI ; MINISTRY OF RUSSIAN FEDERATION FOR ATOMIC ENERGY ; SKIJ NII EHKSPERIME ; RF JADERNYJ TS VSEROSIJ ; RGII ; MINISTERSTVO ROSSIJSKOJ FEDERATSII PO ATOMNOJ EHNE ; RUSSIAN FEDERAL NUCLEAR CENTER ALL RUSSIAN RESEARCH INST OF EXPERIMENTAL PHYSICS ; RUSSIAN MINISTRY FOR ATOMIC ENERGY ; RUSSIAN FEDERAL NUCLEAR CENTRE

Assignee(s): MINISTERSTVO ROSSIJSKOJ FEDERATSII PO ATOMNOJ EHNERGII ; NTAL'NOJ FIZIKI ; ROSSIJSKIJ FEDERAL'NYJ JADERNYJ TSENTR - VSEROSIJSKIJ NAUCHNO-ISSLEDOVATEL'SKIJ INSTITUT EHKSPERIMENTAL'NOJ FIZIKI

Inventor(s): (std): SOLOV EV JU A ; SOLOV EV JUA ; BARANOV VK ; BARANOV V K

Inventor(s): SOLOV'EV JU.A. ; SOLOV'EV JU A

Title: RAPID SYNTHESIS OF CARBON NANOTUBES AND CARBON ENCAPSULATED METAL NANOPARTICLES BY A DISPLACEMENT REACTION

Abstract: Carbon material having at least a partially curved structure, such as a nanotube, produced by a displacement reaction in which a carbon halide, e.g. C₂Cl₆, is reacted with a metal compound, e.g., lithium acetylide in the presence of a catalyst, e.g., CoCl₂. Some applications of the nanotubes of the present invention are use in magnetic data storage media, or use as conductors or semiconductors.

Classifications:

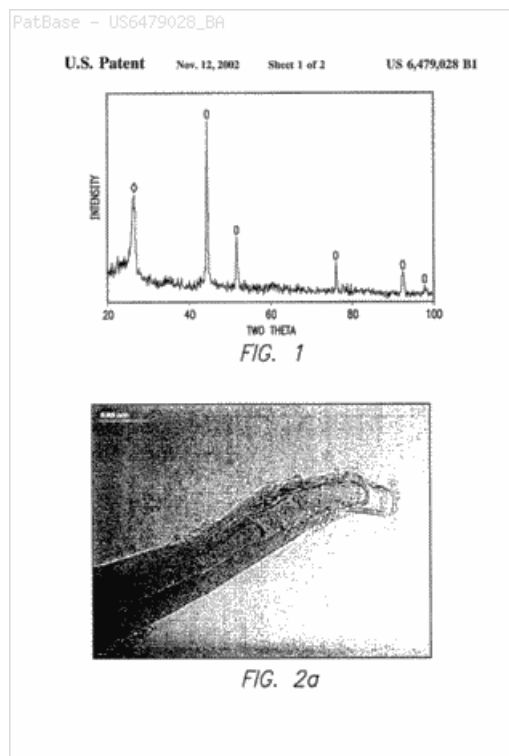
International (IPC 8-9): C01B31/02 (Advanced/Invention);
C01B31/00 (Core/Invention)

International (IPC 1-7): C01B31/00

CPC: Y10S977/773 Y10S977/835 Y10S977/842 Y10S977/843
Y10S977/896 Y10S977/948 B82Y30/00 B82Y10/00 B82Y40/00
C01B2202/02 C01B2202/06 C01B32/162

European: B82Y10/00 B82Y30/00 B82Y40/00 C01B31/02B4B2
M01B202/02 M01B202/06

US: 252/502 252/503 423/414 423/447.1 423/447.2 977/773 977/835
977/842 977/843 977/896 977/948



Family:

Publication number	Publication date	Application number	Application date
US6479028 BA	20021112	US20000541814	20000403

Priority:

US20000541814 20000403

Probable Assignee: OF CALIFORNIA UNIV

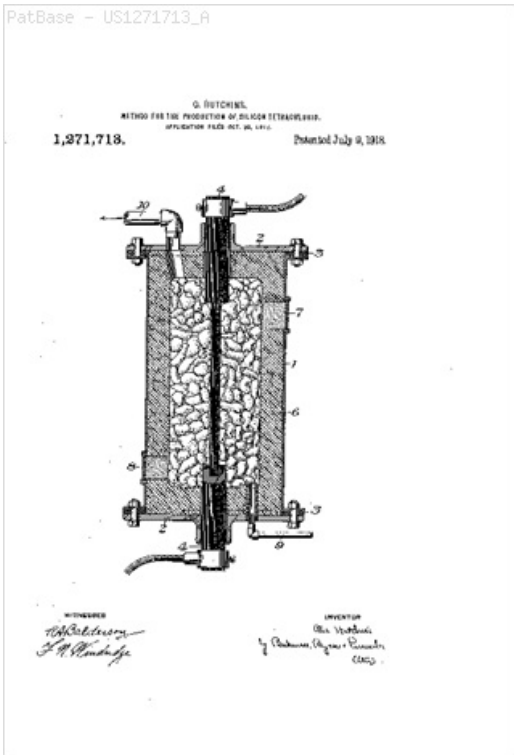
Assignee(s): (std): UNIV CALIFORNIA

Assignee(s): NATIONAL SCIENCE FOUNDATION ; OF CALIFORNIA UNIV ; THE REGENTS OF THE UNIVERSITY OF CALIFORNIA ; THE UNIV OF CALIFORNIA ; UNIV

Inventor(s): (std): WALLACE CHARLES H ; O LOUGHLIN JENNIFER L ; KIANG CHING HWA ; KANER RICHARD B

Title: METHOD FOR THE PRODUCTION OF SILICON TETRACHLORID.

Classifications:
International (IPC 1-7): C01B33/08
CPC: C01B33/08
US: 423/343



Family:

Publication number	Publication date	Application number	Application date
■ US1271713 A	19180709	US19170199283	19171030

Priority:

US19170199283 19171030

Probable Assignee:	CARBORUNDUM CO
Assignee(s): (std):	CARBORUNDUM CO
Assignee(s):	CARBORUNDUM COMPANY
Inventor(s): (std):	HUTCHINS OTIS
Inventor(s):	OTIS HUTCHINS

Classifications:

International (IPC 1-7): C22B27/00

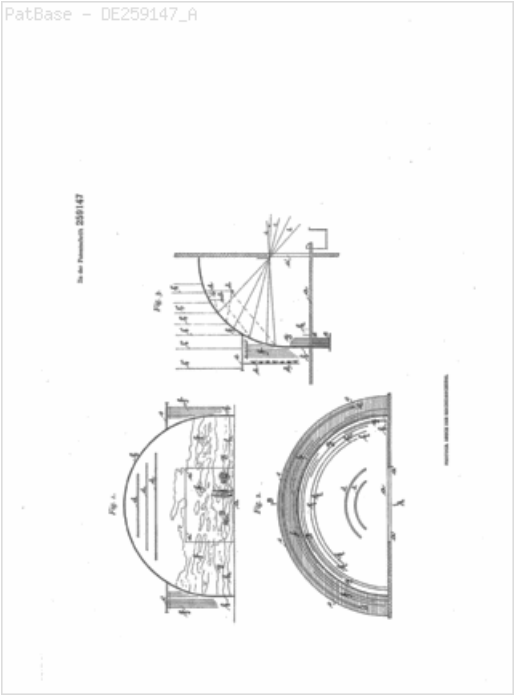
CPC: C22B26/10

US: 423/200 423/445.00R 423/445R 75/590

Family:

Publication number	Publication date	Application number	Application date
 US1319148 A	19191021		00000000

Classifications:
International (IPC 8-9): A63J1/02 (Advanced/Invention);
A63J1/00 (Core/Invention)
International (IPC 1-7): A63J1/02
CPC: A63J1/02
European: A63J1/02



Family:

Publication number	Publication date	Application number	Application date
DE259147 A	00000000		00000000

Title: PROCESS OF OBTAINING SODIUM

Classifications:

CPC: C22B26/10

US: 75/590

Family:

Publication number	Publication date	Application number	Application date
 US380775 A	18880410		00000000

Inventor(s): OBLANDO M THOWLESS

Title: METHOD OF CARBONACEOUS MATERIAL

Classifications:

International (IPC 8-9): C01B31/02 (Advanced/Invention);

C01B31/00 (Core/Invention)

International (IPC 1-7): C01B31/02

Family:

Publication number	Publication date	Application number	Application date
 SU996324 A1	19830215	SU19813315216	19810716

Priority:

SU19813315216 19810716

Probable Assignee: KHARITONOV VALERIJ

Assignee(s): (std): KHARITONOV VALERIJ ; MATYUKHIN GENNADIJ V ; SAMONIN VYACHESLAV V ; VLADIMIROV VALERIJ A ; VYUNOV KIRILL A ; FEDOROV NIKOLAJ F ; IVAKHNYUK GRIGORIJ K ; KALMYKOV VIKTOR P ; LENSIVIET Leningrad Order of October Revolution and Order of Red Banner of Labour Inst of Technology

Assignee(s): KALMYKOV VIKTOR P SU ; IVAKHNYUK GRIGORIJ K SU ; FEDOROV NIKOLAJ F SU ; VYUNOV KIRILL A SU ; VLADIMIROV VALERIJ A SU ; MATYUKHIN GENNADIJ V SU ; SAMONIN VYACHESLAV V SU ; KHARITONOV VALERIJ SU

Inventor(s): (std): FEDOROV NIKOLAJ F ; IVAKHNYUK GRIGORIJ K ; KALMYKOV VIKTOR P ; KHARITONOV VALERIJ I ; MATYUKHIN GENNADIJ V ; SAMONIN VYACHESLAV V ; VLADIMIROV VALERIJ A ; VYUNOV KIRILL A

Inventor(s): VYUNOV KIRILL A SU ; VLADIMIROV VALERIJ A SU ; KHARITONOV VALERIJ I SU ; KALMYKOV VIKTOR P SU ; SAMONIN VYACHESLAV V SU ; MATYUKHIN GENNADIJ V SU ; IVAKHNYUK GRIGORIJ K SU ; FEDOROV NIKOLAJ F SU

Title: Process for converting a metal carbide to diamond by etching in halogens

Abstract: A process for the synthesis of carbon coatings on the surface of metal carbides, preferably SiC, by etching in a halogen-containing gaseous etchant, and optionally hydrogen gas, leading to the formation of a carbon layer on the metal carbide. The reaction is performed in gas mixtures containing 0 to two moles of hydrogen for every two moles of halogen gas, preferably about 0.5 to one mole of hydrogen gas for every two moles of halogen gas, at temperatures from about 100 degrees centigrade to about 4,000 degrees centigrade, preferably about 800 degrees centigrade to about 1,000 degrees centigrade, over any time range, maintaining a pressure of preferably about one atmosphere.

Classifications:

International (IPC 8-9): A61F2/00 A61F2/30 A61F2/32 A61F2/34 A61F2/36 A61F2/38 A61F2/40 A61F2/42 A61F2/46 A61L27/30 B01J21/18 B01J27/22 B01J3/06 B01J37/24 C04B35/628 C04B41/50 C04B41/53 C04B41/85 C04B41/91 C23F1/00 F16C11/06 F16C33/04 F16C33/16 F16C33/30 (Advanced/Invention); A61F2/00 A61F2/32 A61F2/34 A61F2/36 A61F2/38 A61F2/40 A61F2/42 A61F2/46 (Advanced/Non-invention); A61F2/30 A61L27/00 B01J21/00 B01J27/20 B01J3/06 B01J37/00 C04B35/626 C04B41/45 C04B41/53 C04B41/85 C04B41/91 F16C11/06 F16C33/04 F16C33/30 (Core/Invention); A61F2/00 A61F2/32 A61F2/36 A61F2/38 A61F2/42 A61F2/46 (Core/Non-invention)

International (IPC 1-7): A61L27/10 A61L27/30 B01J21/18 B01J27/22 B01J37/24 B44C1/22 C04B35/565 C04B35/628 C04B36/626 C04B41/50 C04B41/91 C10M103/02 C23C C23F1/00 F16C33/04 F16C33/12 H01L21/306

CPC: A61F2/30767 A61F2/32 A61F2/34 A61F2/36 A61F2/38 A61F2/3804 A61F2/3845 A61F2/3859 A61F2/3877 A61F2/389 A61F2/40 A61F2/4059 A61F2/4081 A61F2/4241 A61F2/4261 A61F2002/30253 A61F2002/30301 A61F2002/30626 A61F2002/30649 A61F2002/30685 A61F2002/30878 A61F2002/30892 A61F2002/30925 A61F2002/30957 A61F2002/3611 A61F2002/4018 A61F2002/4258 A61F2002/4271 A61F2002/4631 A61F2230/0076 A61F2230/0095 A61F2310/00269 A61F2310/00281 A61F2310/00574 A61F2310/0058 A61F2310/00586 A61L27/303 B01J3/065 B01J21/18 B01J27/22 B01J37/24 B01J2203/0655 C04B35/62839 C04B35/62884 C04B35/62897 C04B41/009 C04B41/4584 C04B41/5001 C04B41/5002 C04B41/5346 C04B41/85 C04B41/91 C04B2111/00353 C04B2111/0081 C04B2111/00836 C04B2111/94 C04B2235/3826 C04B2235/383 C04B2235/3834 C23F1/00 F16C11/0619 F16C33/043 F16C33/16 F16C33/30

European: A61F2/30L A61L27/30A B01J21/18 B01J27/22 B01J3/06D B01J37/24 C04B35/628B8R C04B35/628K C04B35/628T C04B41/00V C04B41/45P C04B41/50B C04B41/50B2 C04B41/53E2 C04B41/85 C04B41/91 C23F1/00 F16C11/06C F16C33/04C F16C33/16 F16C33/30 K61F2/30A2Y24 K61F2/30A2Y5E K61F2/30A4J2 K61F2/30A4Z K61F2/30A5E4 K61F2/30L2S K61F2/30L2S9P K61F2/30L7 K61F2/30M2M K61F2/32 K61F2/34 K61F2/36 K61F2/36C1 K61F2/38 K61F2/38B K61F2/38D2B K61F2/38F K61F2/38P K61F2/38T K61F2/40 K61F2/40C1 K61F2/40D K61F2/40G K61F2/42H K61F2/42H6T K61F2/42W K61F2/42W28 K61F2/46C K61F230/00Y24 K61F230/00Y5E K61F310/00A6C K61F310/00A6C14 K61F310/00L4 K61F310/00L4D K61F310/00L4G L01J203/06D2 M04B111/00P22B M04B111/00T52 M04B111/00T54 M04B111/94 M04B235/38D18 M04B235/38D18A M04B235/38D18B

US: 216/75 216/75P 216/81 216/81S 508/100 508/109

Family:

Publication number	Publication date	Application number	Application date
AT269282 E	20040715	AT20000975189T	20000824
AU200113271 A1	20010326	AU20010013271	20000824
AU200113271 A5	20010326	AU20010013271	20000824
AU2002309542 AA	20021105	AU20020309542	20020404
DE60011663 D1	20040722	DE20006011663	20000824
DE60011663 T2	20050721	DE20006011663T	20000824
EP1228020 A2	20020807	EP20000975189	20000824
EP1228020 B1	20040616	EP20000975189	20000824
EP1414770 A2	20040506	EP20020736544	20020404
ES2223608 T3	20050301	ES20000975189T	20000824
US2001047980 AA	20011206	US20010838458	20010419
US6579833 BA	20030617	US20000568312	20000509
WO0116054 A2	20010308	WO2000US23343	20000824
WO0116054 A3	20020510	WO2000US23343	20000824
WO02086180 A2	20021031	WO2002US10678	20020404
WO02086180 A3	20030206	WO2002US10678	20020404

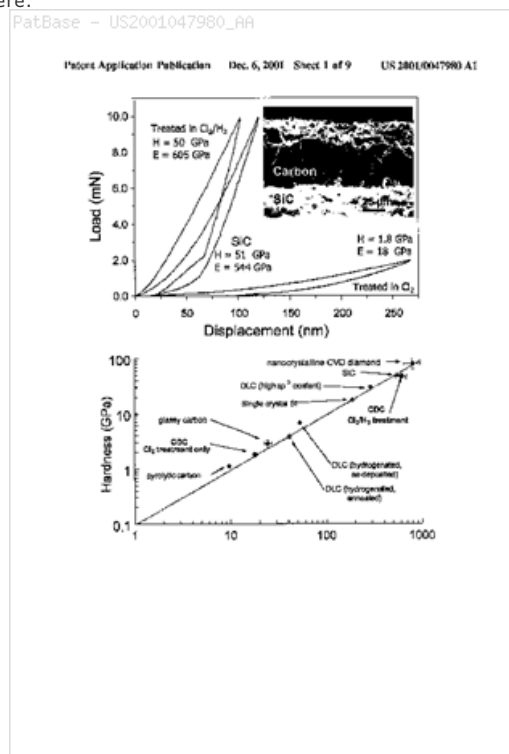
Priority:

US1990152013P 19990901 US20000568312 20000509 WO2000US23343 20000824
US20010838458 20010419 WO2002US10678 20020404

Probable Assignee: BOARD OF TRUSTEES OF UNIVERISTY OF ILLINOIS

Assignee(s): (std): TRUSTEES OF UNIV OF ; WELZ SASCHA ; UNIV ILLINOIS ; THE BOARD OF TRUSTEES OF THE UNIVERSITY OF ILLINOI ; TRUSTEES FOR THE UNIVERSITY OF

Assignee(s): THE BOARD OF TRUSTEES OF THE UNIVERSITY OF ILLINOIS ; THE BOARD OF TRUSTEES FOR THE UNIVERSITY OF ILLINOIS URBANA ; THE BOARD OF TRUSTEES FOR THE UNIVERSITY OF ILLINO ; TRUSTEES OF UNIV ; TRUSTEES FOR UNIV ; BOARD OF TRUSTEES FOR UNIV OF ILLINOIS URBANA ; BOARD OF TRUSTEES OF UNIV ; BOARD OF TRUSTEES OF UNIV OF ILLINOIS ; BOARD OF TRUSTEES OF UNIV OF ILLINOIS AN ILLINOIS ; BOARD OF TRUSTEES OF UNIVERISTY OF ILLINOIS ; ERSOY DANIEL ; GOGOTSI YURY ; MCNALLAN MICHAEL J ; NATIONAL SCIENCE FOUNDATION



Inventor(s): (std): DANIEL ERSOY ; ERSOY DANIEL ; GOGOTSI YURY ; MCNALLAN MICHAEL J ; MICHAEL J MCNALLAN ; SASCHA WELZ ; WELZ SASCHA ; YURY GOGOTSI ; MCNALLAN J

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

Title: METHOD OF USING CARBIDE AND/OR OXYCARBIDE CONTAINING COMPOSITIONS

Abstract: Compositions including carbide-containing nanorods and/or oxycarbide-containing nanorods and/or carbon nanotubes bearing carbides and oxycarbides and methods of making the same are provided. Rigid porous structures including oxycarbide-containing nanorods and/or carbide containing nanorods and/or carbon nanotubes bearing carbides and oxycarbides and methods of making the same are also provided. The compositions and rigid porous structures of the invention can be used either as catalyst and/or catalyst supports in fluid phase catalytic chemical reactions. Processes for making supported catalyst for selected fluid phase catalytic reactions are also provided.

Classifications:

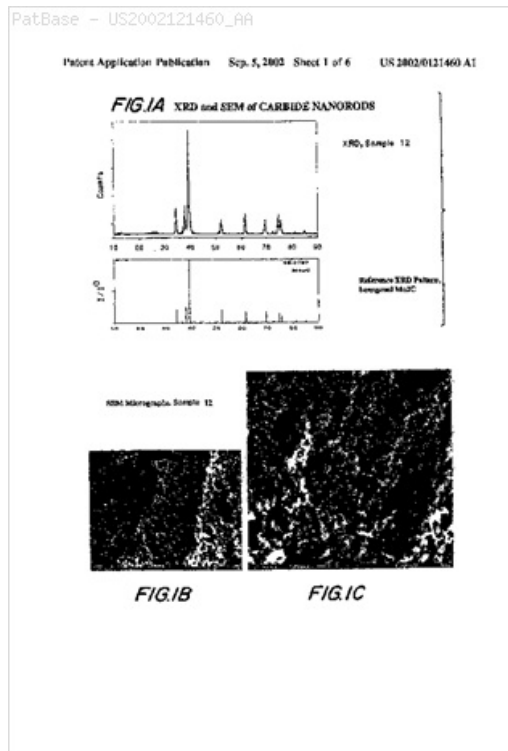
International (IPC 8-9): B01J21/18 B01J23/00 B01J23/40 B01J23/74 B01J27/20 B01J27/22 B01J27/224 B01J32/00 B01J35/02 B01J35/10 B01J37/00 B01J37/24 B01J37/28 B32B3/00 B32B3/26 B32B5/16 B32B5/24 B32B9/00 C01B13/14 C01B31/02 C01B31/30 C01B31/34 C03B25/00 C04B35/515 C04B35/56 C04B38/00 C07B61/00 C07C11/02 C07C11/08 C07C2/58 C07C25/00 C07C5/02 C07C5/03 C07C5/09 C07C5/22 C07C5/25 C07C5/27 C07C7/163 C07C9/06 C07C9/12 C07C9/22 C10G35/04 C10G35/06 C10G45/04 C10G45/10 C10G45/44 C10G45/46 C10G45/52 C10G45/58 C10G45/62 C10G47/02 C10G47/14 C30B23/00 D01C5/00 D01F11/12 D01F9/12 D02G3/00 (Advanced/Invention); B01J27/22 B01J32/00 B82B3/00 C04B38/00 C07B61/00 C10G45/44 C10G45/58 (Advanced/Non-invention); B01J21/00 B01J23/00 B01J27/20 B01J32/00 B01J35/00 C01B13/14 C01B31/00 C03B25/00 C04B38/00 C10G45/02 C10G45/44 C10G45/58 C10G47/00 C30B23/00 (Core/Invention)

International (IPC 1-7): B01J10/00 B01J21/18 B01J23/00 B01J23/40 B01J23/74 B01J27/20 B01J27/22 B01J27/224 B01J32/00 B01J35/02 B01J35/10 B32B3/00 B32B3/26 B32B5/16 B32B5/24 B32B9/00 C01B13/14 C01B31/02 C01B31/30 C01B35/10 C01G43/00 C03B25/00 C04B35/52 C04B35/56 C04B38/00 C07B61/00 C07C11/02 C07C11/08 C07C5/02 C07C5/03 C07C5/09 C07C5/13 C07C5/22 C07C5/23 C07C5/25 C07C5/27 C07C7/163 C07C9/06 C07C9/12 C07C9/22 C10G17/00 C10G21/04 C10G35/00 C10G35/04 C10G35/06 C10G45/00 C10G45/04 C10G45/10 C10G45/44 C10G45/46 C10G45/52 C10G45/58 C10G45/62 C10G47/02 C10G47/14 D01C5/00 D01F9/12 D02G3/00

CPC: Y10S977/737 Y10S977/762 Y10S977/895 Y10S977/788 Y10S977/742 Y10S977/745 Y10S977/748 Y10S977/749 Y10S977/81 Y10S977/811 Y10S977/847 B01J37/24 B01J37/28 Y10T428/25 Y10T428/2918 Y10T428/292 Y10T428/249962 Y10T428/249967 C30B29/605 B01J21/18 B01J35/023 C01B2202/34 D01F9/12 D01F11/122 C01P2002/72 C01P2004/03 C01P2004/04 C01P2004/13 C01P2004/50 C01P2004/64 C01P2004/80 C01P2004/82 C01P2006/10 C01P2006/14 C01P2006/60 C01P2006/80 C30B23/00 C10G25/003 C10G45/02 C10G45/60 C10G2300/1081 C10G2300/1088 C10G2300/202 C01B32/15 C01B32/168 C01B32/18 C01B32/907 C01B2202/36 C01B32/949 C01B32/956 C01B32/90 B01J27/22 B01J21/185 B01J23/28 B01J37/08 B82Y30/00 B82Y40/00

European: B01J21/18 B01J21/18C B01J27/22 B01J35/02B B01J37/08 B01J37/24 B01J37/28 B82Y30/00 B82Y40/00 C01B31/02B C01B31/02B4D C01B31/02B6 C01B31/30 C01B31/30B C01B31/34 C01B31/36 C30B23/00 D01F11/12C D01F9/12 L01J21/18C L01J23/28 M01B202/34 M01B202/36 M01P2/72 M01P4/03 M01P4/04 M01P4/13 M01P4/50 M01P4/64 M01P4/80 M01P4/82 M01P6/10 M01P6/14 M01P6/60 M01P6/80

US: 208/133 208/134 208/134S 208/143 208/143S 208/209 208/213 208/251 208/251.00HS 208/251H 208/253 208/254.00R 208/254R 423/277 423/415.1 423/415.100S 423/439 423/440 423/440P 423/447.1 423/447.2 423/447.200P 423/447.3 423/447.4 423/447.5 423/447.6 428/311.11 428/312.2 428/323 428/367 428/368 428/40 501/87 501/93 502/174 502/174S 502/177 502/177S 502/180 502/182 502/182S 502/185 502/185S 502/439 502/527.14 585/275 585/470 585/483 585/486 585/664 585/664P 585/721 585/734 585/734S 585/750 977/737 977/742 977/745 977/748 977/749 977/762 977/788 977/810 977/811 977/847 977/895



Family:

Publication number	Publication date	Application number	Application date
AU200025040 A1	20000801	AU20000025040	20000112
AU200025040 A5	20000801	AU20000025040D	20000112
AU200111868 A1	20010724	AU20010011868	20000712
AU200111868 A5	20010724	AU20010011868	20000712
AU2002365183 AA	20030715	AU20020365183	20021029
AU2002365183 BB	20081218	AU20020365183	20021029
AU764311 B2	20030814	AU20000025040	20000112
CA2359336 AA	20010710	CA20002359336	20000112
CA2396922 AA	20020711	CA20002396922	20000719
CA2465002 AA	20040427	CA20022465002	20021029
CN1331594 C	20070815	CN20028026287	20021029
CN1607979 A	20050420	CN20028026287	20021029
EP1152827 A1	20011114	EP20000903266	20000112
EP1152827 A4	20021106	EP20000903266	20000112
EP1246695 A1	20021009	EP20000973348	20000719
EP1246695 A4	20030528	EP20000973348	20000719
EP1448295 A2	20040825	EP20020804109	20021029
EP1448295 A4	20071003	EP20020804109	20021029
EP1920837 A2	20080514	EP20070122314	20000112
EP1920837 A3	20081119	EP20070122314	20000112
JP2002534351 T2	20021015	JP20000593411T	20000112
JP2003523913 T2	20030812	JP20010551611T	20000712
JP2005514190 T2	20050519	JP20030556155T	20021029

JP4611595 B2	20110112	JP20010551611T	20000712
JP4611595 B2	20110112	JP20010551611T	20000719
JP4689045 B2	20110525	JP20000593411T	20000112
KR20010089809 A	20011008	KR20017008727	20000112
MXPA02006763 A1	20040812	MX2002PA06763	20000719
MXPA04003998 A1	20040723	MX2004PA03998	20021029
US2002121460 AA	20020905	US20010023618	20011218
US2003008772 AA	20030109	US20010005586	20011029
US2003035769 AA	20030220	US20020170269	20020611
US2005027153 AA	20050203	US20040873739	20040622
US2005029164 AA	20050210	US20040940242	20040914
US2007179050 AA	20070802	US20060608359	20061208
US2007202033 AA	20070830	US20070743634	20070502
US6514897 BA	20030204	US20000481184	20000112
US6809229 BB	20041026	US20010023618	20011218
US6841508 BB	20050111	US20020170269	20020611
US6936565 BB	20050830	US20010005586	20011029
US7169730 BB	20070130	US20040873739	20040622
US7230149 BB	20070612	US20040940242	20040914
US7576027 BB	20090818	US20060608359	20061208
US7578989 BB	20090825	US20070743634	20070502
WO0041808 A1	20000720	WO2000US00753	20000112
WO0041808 C2	20010712	WO2000US00753	20000112
WO0151201 A1	20010719	WO2000US19121	20000719
WO03055583 A2	20030710	WO2002US34704	20021029
WO03055583 A3	20030918	WO2002US34704	20021029

Priority:

US19990115735P	19990112	US20000481184	20000101	EP20000903266	20000112
US20000481184	20000112	WO2000US00753	20000112	US20000615350	20000712
WO2000US19121	20000712	WO2000US19121	20000719	WO2000US00753	20010710
US20010005586	20011029	US20010023618	20011218	US20020170269	20020611
WO2002US34704	20021029	US20040873739	20040622	US20040940242	20040914
US20060608359	20061208	US20070743634	20070502		

Probable Assignee: HYPERION CATALYSIS INT INC

Assignee(s): (std): HYPERION CATALYSIS INTERNATIONAL INC ; HYPERION CATALYSIS INT INC ; HYPERION CATALYSIS INTERNAT IN ; MA JUN ; MOY DAVID ; NIU CHUNMING ; WILLEY JASON M ; HYPERION CATALYSIS INT CO LTD ; HYPERION CATALYSIS INT IN ; HYPERION CATALYSIS INT

Assignee(s): HYPERION CATALYSIS INT CO ; HYPERION CATALYSIS INTIONAL ; NIU CHUN MING ; WHITE OAK GLOBAL ADVISORS LLC ADMINISTRATIVE AGENT AS ; PDL BIOPHARMA INC

Inventor(s): (std): JUN MA ; MA JUN ; MOY DAVID ; NIU CHUN MING ; NIU CHUNMING ; NIU CHUNNING ; WILLEY JAMES M ; WILLEY JASON M ; DAVID MOY ; DAVID MA JUN MOY ; JASON M WILLEY ; CHUN MING NIU

Inventor(s): CHUNMING NIU ; WILLEY JASON ; MA JUN MOY DAVID

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; SMART AND BIGGAR; DUCKETT ANTHONY JOSEPH; KRAMER LEVIN NAFTALIS AND FRANKEL LLP INTELLECTUAL PROPERTY DEPARTMENT; KRAMER LEVIN NAFTALIS AND FRANKEL LLP, INTELLECTUAL PROPERTY DEPARTMENT; BARRY EVANS ESQ; KRAMER LEVIN NAFTALIS AND FRANKEL LLP; EVANS ESQ BARRY; BARRY

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 CR CU CY CZ DE DK DM DZ 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 PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG UZ VN YU ZA ZM ZW

Title: CARBON NANOPARTICLES AND COMPOSITE PARTICLES AND PROCESS OF MANUFACTURE

Abstract: Carbide powders can be partially or completely converted to substantially densely-packed carbon nanotubes by thermochemical treatment. When partially converted, the resulting materials can consist of a metal carbide core, such as silicon carbide, onto which a surface layer of fullerene carbon, such as carbon nanotubes, has been grown.

Classifications:

International (IPC 8-9): B32B5/16 B32B9/02 C01B3/00 C01B31/02 C01B31/30 C09K3/14 H01M4/24 H01M4/58

H01M8/04 (Advanced/Invention);

H01M4/38 (Advanced/Non-invention);

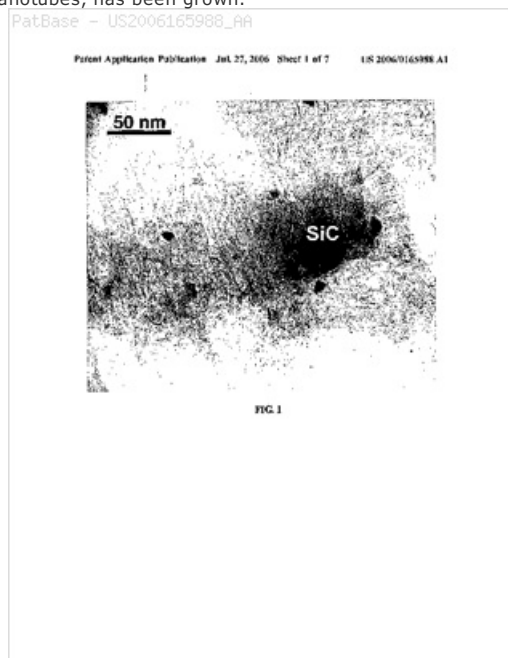
C01B (Subclass/Invention)

International (IPC 1-7): B32B5/16 C01B31/30

CPC: Y02E60/327 B82Y30/00 B82Y40/00 C01B3/0021 C01B3/0078 C01B2202/02 C01B2202/06 C01B2202/34 C01B2202/36 C04B35/62645 C04B35/62839 C04B35/62889 C04B2235/3826 C04B2235/526 C04B2235/5264 C04B2235/5288 C04B2235/5409 C04B2235/5436 C09K3/1409 C09K3/1436 C09K3/1445 C09K3/1454 H01M4/242 H01M4/383 H01M4/58 H01M4/587 Y02E60/325 Y10T428/2984 Y02P70/56 C01B32/152 C01B32/16 H01M8/04216

European: B82Y30/00 B82Y40/00 C01B3/00D2C C01B3/00D2H C01B31/02B2 C01B31/02B4B C04B35/626A16 C04B35/628B8R C04B35/628M C09K3/14B C09K3/14C C09K3/14C2 C09K3/14D H01M4/24B H01M4/58 H01M8/04C6D M01B202/02 M01B202/06 M01B202/34 M01B202/36 M04B235/38D18 M04B235/52D10 M04B235/52D8 M04B235/52J2 M04B235/54B M04B235/54D4 T01M4/38B T01M4/587 T01M8/04C6D Y02E60/12D Y02E60/32F2 Y02E60/50

US: 428/402.2 428/402.200P



Family:

Publication number	Publication date	Application number	Application date
AU2003299458 AA	20040513	AU20030299458	20030409
AU2003299458 AH	20040513	AU20030299458	20030409
US2006165988 AA	20060727	US20030510482	20030409
WO04037714 A2	20040506	WO2003US10822	20030409
WO04037714 A3	20040902	WO2003US10822	20030409

Priority:

US20020370732P 20020409 US20030510482 20030409 WO2003US10822 20030409
US20050510482 20050419

Probable Assignee: MASSACHUSETTS INST OF TECHNOLOGY

Assignee(s): (std): MASSACHUSETTS INST TECHNOLOGY ; CHIANG YET MING ; VANDER SANDE JOHN B

Assignee(s): MASSACHUSETTS INST ; MASSACHUSETTS INST OF TECHNOLOGY ; MASSACHUSETTS INSTITUTE OF TECHNOLOGY ; NAVY SECRETARY OF UNITED STATES OF AMERICA OFFICE ; NAVY SECRETARY OF UNITED STATES OF AMERICA OFFICE OF NAVAL RESEARCH

Inventor(s): (std): CHIANG YET MING ; VANDER SANDE JOHN B ; SANDE JOHN B VANDER

Inventor(s): JOHN B VANDER SANDE ; YET MING CHIANG ; VANDER SANDE JOHN

Agent(s): STEPTOE AND JOHNSON 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 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: NANOPOROUS CARBIDE DERIVED CARBON WITH TUNABLE PORE SIZE

Abstract: The present invention provides a method for producing a nanoporous carbide-derived carbon composition with a tunable pore structure and a narrow pore size. Also provided are compositions prepared by the method.

Classifications:

International (ipc 8-9): B82B3/00 C01B31/00 C01B31/02 C01B31/36

H01G9/00 H01G9/058 (Advanced/Invention);

H01M4/58 (Advanced/Non-invention);

C01B (Subclass/Invention)

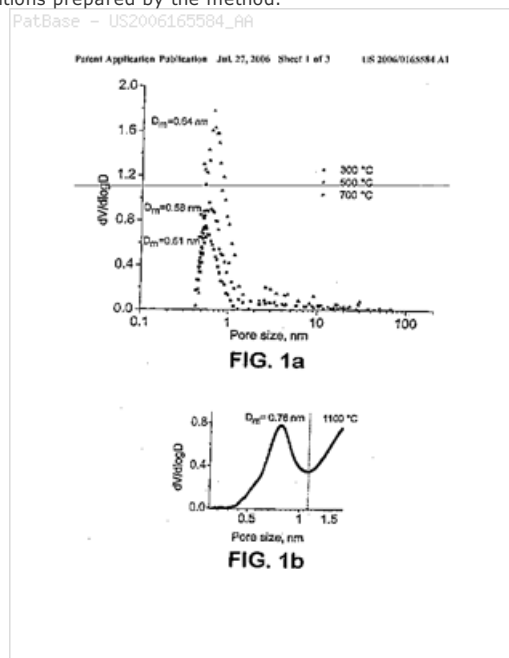
International (ipc 1-7): C01B3/00 C01B31/02

CPC: C01B32/00 B01J20/28088 B01J20/20 B01J20/2808

European: B01J20/20 B01J20/28F12B B01J20/28F16 C01B31/00

US: 423/324 423/414 423/440 423/445.00B 423/445.00BP 423/445.00RP

423/445B 423/445R 977/734 977/734S



Family:

Publication number	Publication date	Application number	Application date
AU2004257183 AA	20050127	AU20040257183	20040702
CA2530806 AA	20051222	CA20042530806	20040702
EP1667932 A2	20060614	EP20040756600	20040702
EP1667932 A4	20071031	EP20040756600	20040702
JP2007531678 T2	20071108	JP20060518802T	20040702
JP4646911 B2	20110309	JP20060518802T	20040702
US2006165584 AA	20060727	US20040561768	20040702
US2012093709 AA	20120419	US20110331184	20111220
US8137650 BB	20120320	US20040561768	20040702
WO05007566 A2	20050127	WO2004US21382	20040702
WO05007566 A3	20050630	WO2004US21382	20040702

Priority:

US20030484840P 20030703 US20040561768 20040702 WO2004US21382 20040702
US20060561768 20060323 US20110331184 20111220

Probable Assignee: DREXEL UNIV

Assignee(s): (std): BARSOUM MICHAEL W ; BARSOUM MICHEL W ; GOGOTSI YURY ; UNIV DREXEL

Assignee(s): NAVY SECRETARY OF UNITED STATES OF AMERICA ; DREXEL UNIV ; DREXEL UNIVERSITY

Inventor(s): (std): BARSOUM MICHAEL W ; BARSOUM MICHEL W ; GOGOTSI YURY ; MICHEL W BARSOUM ; YURY GOGOTSI

Agent(s): FB RICE; FB RICE PTY LTD; BORDEN LADNER GERVAIS LLP; LICATLA AND TYRRELL PC; WOODCOCK WASHBURN 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 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 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: MIXED REACTANT MOLECULAR SCREEN FUEL CELL

Abstract: In one aspect, the present invention provides a fuel cell having a first membrane selective to a fuel, a second membrane selective to an oxidant, and a mixed reactant flow provided to the screens. The invention further includes an anode, a cathode and a semi-permeable electrolyte fluidly separating the same.

Classifications:

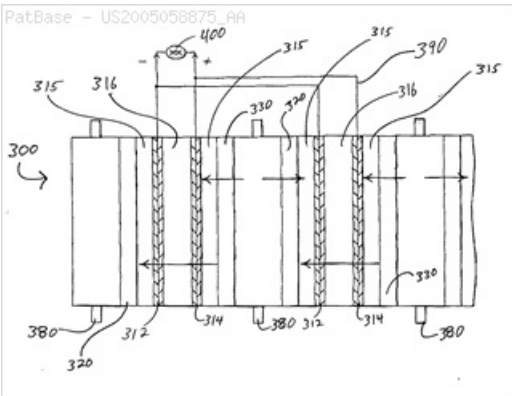
International (IPC 8-9): H01M4/86 H01M8/02 H01M8/04
H01M8/06 (Advanced/Invention);
H01M16/00 H01M8/16 (Advanced/Non-invention);
H01M4/86 H01M8/02 H01M8/04 H01M8/06 (Core/Invention);
H01M16/00 H01M8/16 (Core/Non-invention)

International (IPC 1-7): H01M8/02

CPC: Y02T90/32 H01M4/8657 H01M4/8605 H01M8/0232 H01M8/0236
H01M8/0239 H01M8/0245 H01M8/04089 H01M8/04291 H01M8/0612
H01M8/065 H01M8/0656 H01M8/0687 H01M8/16 H01M16/003
H01M2250/20 H01M2300/0082 Y02E60/527

European: H01M4/86B H01M4/86K2 H01M8/02C4F H01M8/04C2
H01M8/06B2 H01M8/06B4 H01M8/06C H01M8/06C8 H01M8/16
T01M16/00F T01M250/20 T01M300/00B8C T01M8/02C4A T01M8/02C4D
T01M8/02C4K2 T01M8/04F T01M8/06B2 T01M8/06B6 T01M8/16

US: 429/13 429/34 429/456 429/456P 429/513 429/513S



Family:

Publication number	Publication date	Application number	Application date
US2005058875 AA	20050317	US20040909275	20040730

Priority:

US20030491413P 20030730 US20030524475P 20031124 US20040909275 20040730

Probable Assignee: JEROME ALLAN

Assignee(s): JEROME ALLAN

Inventor(s): (std) JEROME ALLAN

Agent(s): JONATHAN F YATES LIELL AND MCNEIL ATTORNEYS PC

Title: Method of producing ion state carbon and synthesizing diamond, fullerene diamond, fullerene and carbon nano tube

Abstract: A process for generating ion-state carbon and synthesizing diamond, fullerene and carbon nanotubes features the reaction between halohydrocarbon and metallic carbide in sealed reactor at 250-1200 deg.C. It has very low cost.

Classifications:

International (IPC 8-9): C01B31/02 C01B31/06 (Advanced/Invention);

C01B31/00 (Core/Invention)

International (IPC 1-7): C01B31/02 C01B31/06

Family:

Publication number	Publication date	Application number	Application date
 CN1590288 A	20050309	CN20031024799	20030903

Priority:

CN20031024799 20030903

Probable Assignee:

XIE YONGGUI

Assignee(s): (std):

XIE YONGGUI

Inventor(s): (std):

XIE YONGGUI

Inventor(s):

YONGGUI XIE

Title: TRANSITION METAL ACETYLIDE COMPOUND, NANO-POWDER AND METHOD FOR PRODUCING A TRANSITION METAL ACETYLIDE COMPOUND

Abstract: An anhydrous chloride with a formula of MCl_2 (M-Fe, Co or Ni) is dissolved into an anhydrous acetonitrile solvent to form a chloride-acetonitrile solution. Then, calcium carbide minute powders are added and dispersed in the chloride-acetonitrile solution at a molar quantity equal to or smaller by 1-30 mol percent than the molar quantity of the anhydrous chloride to form a reactive solution. Then, the reactive solution is heated at a predetermined temperature to chemically react the anhydrous chloride with the calcium carbide minute powders in the reactive solution to form a transition metal acetylide compound having an $M-C_2$ -M bond, a tetragonal structure, and a formula of MC_2 (herein, M-Fe, Co or Ni).

Classifications:

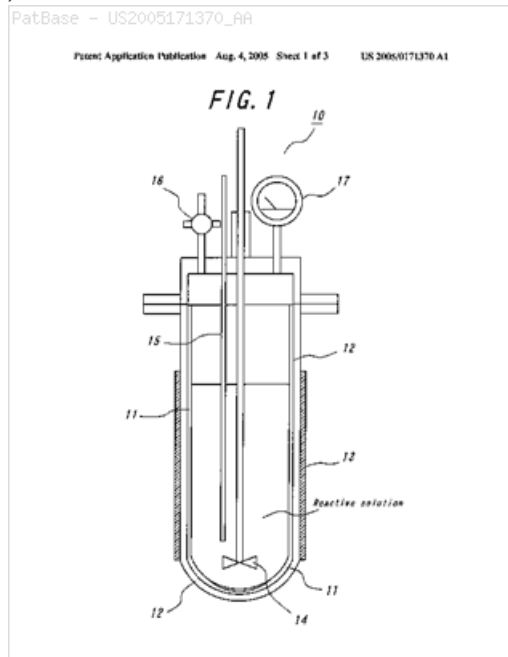
International (IPC 8-9): C01B31/00 C01B31/30 C07F15/00 C07F15/02 C07F15/04 C07F15/06 (Advanced/Invention); C01B31/00 C07F15/00 (Core/Invention)

International (IPC 1-7): C01B31/30 C07F15/02 C07F15/04 C07F15/06

CPC: C07F15/02 C07F15/04

European: C07F15/02 C07F15/04

US: 423/414 556/140 977/DIG.1



Family:

Publication number	Publication date	Application number	Application date
JP2005219939 A2	20050818	JP20040026797	20040203
JP4126376 B2	20080730	JP20040026797	20040203
US2005171370 AA	20050804	US20040944037	20040920
US7025945 BB	20060411	US20040944037	20040920

Priority:

JP20040026797 20040203

Probable Assignee: NAT INST NATURAL SCIENCES

Assignee(s): (std): INTER UNIV RES INST CORP ; NATIONAL INSTITUTES OF NATURAL SCIENCES ; NAT INST NATURAL SCIENCES ; KEK HIGH ENERGY ACCELERATOR

Assignee(s): INTER UNIV RESEARCH INST NATIONAL INSTITUTES OF NATURAL SCIENCE CORP ; INTER UNIV RESEARCH INST NATIONAL INSTITUTES OF NATURAL SCIENCES CORP ; INTER UNIV RESEARCH INST ; INTER UNIV RESEARCH INST NA CORP ; INTER UNIV RESEARCH INST NATIONAL INST OF NATURAL SCIENCES CORP ; INTER UNIV RESEARCH INST NATIONAL INSTITUTES ; INTER UNIV RESEARCH INST NATIONAL INSTITUTES OF NA

Inventor(s): (std): KOSUGI KENTARO ; NISHI NOBUYUKI

Agent(s): SUGIMURA KOSAKU; OLIFF AND BERRIDGE PLC

Title: METHOD OF MAKING THE POROUS CARBON MATERIAL AND POROUS CARBON MATERIALS PRODUCED BY THE METHOD

Abstract: A method for making the microporous carbon with modified pore size distribution and advanced sorption behaviour. The carbon is derived from metal or metalloid carbides. The method employs the use of oxidant in reaction medium that during the carbide conversion into carbon widens small micropores, which otherwise would be hardly accessed by sorbing molecules or ions in practical applications. The microporous carbon obtained is free of impurities and possesses extremely narrow pore size distribution.

Classifications:

International (IPC 8-9): A61K33/44 B32B5/16 C01B31/00 C01B31/02 C01B31/10 C01B31/12 C01B32/00 C01B32/05 (Advanced/Invention); A61K33/44 B32B5/16 C01B31/00 (Core/Invention)

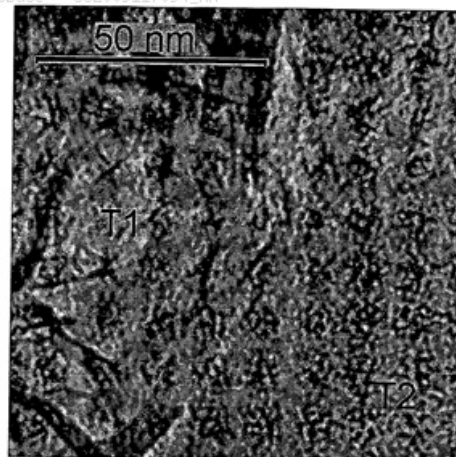
International (IPC 1-7): C01B31/02 C01B31/08 C01B31/10 C01B31/12

CPC: Y10T428/24942 B01J20/2808 B01J20/20 B01J20/28088 B01J20/28092 C04B35/52 C04B38/0022 C04B2111/00801 C04B2111/0081 C04B2111/00853 C04B2235/3817 C04B2235/3826 C04B2235/3843 C04B2235/46 Y10T428/249961 C01B32/00

European: B01J20/20 B01J20/28F12B B01J20/28F16 B01J20/28F16D C01B31/00 C04B35/52 C04B38/00C M04B111/00T50B M04B111/00T52 M04B111/00T57 M04B235/38D M04B235/38D18 M04B235/38D28B M04B235/46

US: 423/445.00R 423/445.00RS 423/445R 424/125 424/125P 428/212 428/220 428/310.5 977/900 977/900S

PatBase - US2009117094_AA



Family:

Publication number	Publication date	Application number	Application date
EE05546 B1	20120615	EE20050000009	20050418
EE05563 B1	20120815	EE20040000091	20040601
EE200400091 A	20060215	EE20040000091	20040601
EE200500009 A	20061215	EE20050000009	20050418
EP1751056 A1	20070214	EP20050747278	20050531
US2009117094 AA	20090507	US20050628153	20050531
US7803345 BB	20100928	US20050628153	20050531
WO05118471 A1	20051215	WO2005EE00007	20050531

Priority:

EE20040000091 20040601 EE20040000091 20040601 EE20050000009 20050418
EE20050000009 20050418 WO2005EE00007 20050531

Probable Assignee: OUE SKELETON TECHNOLOGIES GROUP

Assignee(s): (std): TARTU TEHNOLOOGIAD OUE ; LEIS JAAN ; LAETT MARKO ; KUURA HELLE ; LATT MARKO ; ARULEPP MATI ; HLR DEV OU

Assignee(s): HLR DEVELOPMENT OU ; CARBONEE OU ; TARTU TEHNOLOOGIAD OU ; OU SKELETON TECHNOLOGIES ; OUE SKELETON TECHNOLOGIES GROUP

Inventor(s): (std): KUURA HELLE ; LAETT MARKO ; LATT MARKO ; LEIS JAAN ; ARULEPP MATI

Inventor(s): HELLE KUURA ; JAAN LEIS ; MARKO LAETT ; MATI ARULEPP

Agent(s): BIRCH STEWART KOLASCH AND BIRCH 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 GW HR HU ID IE IL IN IS IT JP KE KG KM KP KR KZ LC LI LK LR LS LT LU LV 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

US20070932558 20071031 US20070932020 20071031 US20100906789 20101018
US20110084290 20110411

Probable Assignee: CLEAN TECHNOLOGIES INT CORP

Assignee(s): (std): CLEAN TECHNOLOGIES INT CO ; CLEAN TECHNOLOGIES INT CORP ; CLEAN TECHNOLOGY INT CORP ;
WAGNER ANTHONY S

Assignee(s): CLEAN TECHNOLOGY INT ; CLEAN TECHNOLOGIES INT

Inventor(s): (std): WAGNER ANTHONY S

Inventor(s): WAGNER ANTHONY

Agent(s): MISCHUNG RALF; CULBERTSON GROUP PC; RUSSELL D; CULBERTSON RUSSELL D ET AL; CULBERTSON
RUSSELL D

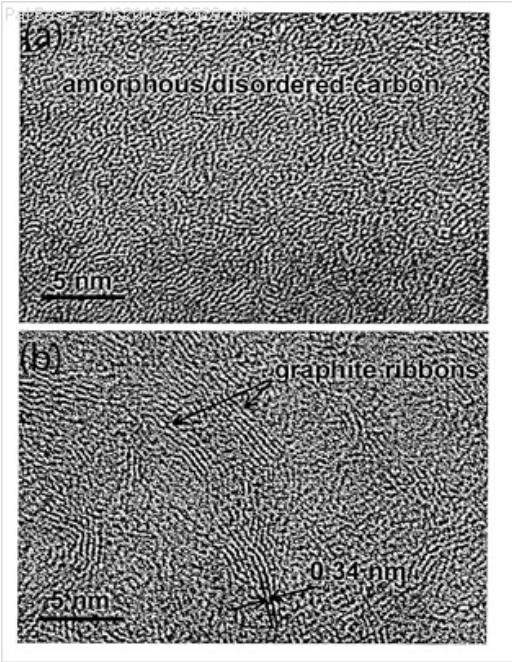
Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE
DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG
KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE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

Title: NANOCELLULAR HIGH SURFACE AREA MATERIAL AND METHODS FOR USE AND PRODUCTION THEREOF

Abstract: Nanocellular high surface area materials of a carbon material with high surface area that is controllable and which exhibits high conductivity, controllable structure and a precisely controllable pore size and methods for production and use of these materials are provided.

Classifications:

International (IPC 8-9): B05D3/02 B29C44/46 B32B3/26 C01B31/02 C10L11/00 C25B11/12 H01G4/06 H01G9/00 H01G9/02 H01G9/058 H01G9/155 H01L51/52 (Advanced/Invention); B05D3/02 B29C44/34 B32B3/26 C01B31/00 C10L11/00 C25B11/00 H01G4/06 H01G9/00 H01G9/02 H01G9/058 H01G9/155 H01L51/50 (Core/Invention)
CPC: Y10T428/249978 H01M4/96
European: H01M4/96 Y02E60/50
US: 361/502 361/502P 423/445.00RS 423/445R 428/315.5 428/315.500S



Family:

Publication number	Publication date	Application number	Application date
CA2604577 AA	20071012	CA20062604577	20060414
JP2008536786 T2	20080911	JP20080506735T	20060414
US2009213529 AA	20090827	US20060911248	20060414
WO06113424 A2	20061026	WO2006US14048	20060414
WO06113424 A3	20070329	WO2006US14048	20060414

Priority:

US20050671290P 20050414 US20060911248 20060414 WO2006US14048 20060414

Probable Assignee: DREXEL UNIV

Assignee(s): (std): CHMIOLA JOHN ; DASH RANJAN ; GOGOTSI YURY ; UNIV DREXEL ; YUSHIN GLEB

Assignee(s): DREXEL UNIV ; DREXEL UNIVERSITY

Inventor(s): (std): CHMIOLA JOHN ; DASH RANJAN ; GOGOTSI YURY ; YUSHIN GLEB ; DASH RAJAN

Agent(s): BORDEN LADNER GERVAIS LLP; WOODCOCK WASHBURN 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 GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC 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

Title: METHOD FOR MANUFACTURING THE NANOPOROUS SKELETONC MATERIAL

Abstract: A method to produce the nanostructured carbon material comprising the steps of synthesis of metal or metalloid oxide (STAGE B) from respective metal or metalloid chloride, synthesis of metal or metalloid carbide (STAGE C) from respective metal or metalloid oxide and synthesis of metal or metalloid chloride (STAGE D) from the solid product wherein the metal or metalloid carbide in STAGE C is synthesized from the respective metal or metalloid oxide produced in STAGE B.

Classifications:

International (IPC 8-9): C01B31/02 (Advanced/Invention);

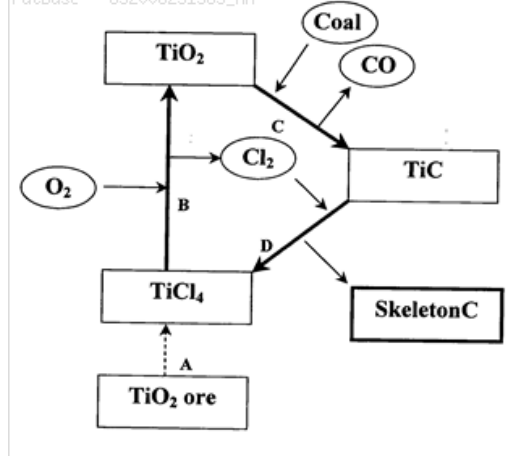
C01B31/00 (Core/Invention)

CPC: C01G23/07 C01B32/05 C01B32/921 C01P2002/72 C01P2006/12

European: C01B31/02 C01B31/30F C01G23/07 M01P2/72 M01P6/12

US: 423/445R

PatBase - US2006251565_AA



Family:

Publication number	Publication date	Application number	Application date
US2006251565 AA	20061109	US20060407202	20060420

Priority:

US20050673788P 20050422 US20060407202 20060420

Probable Assignee: CARBONEE OU

Assignee(s): (std): TARTU TEHNOLOOGIAD OU

Assignee(s): CARBONEE OU

Inventor(s): (std): ARULEPP MATI ; KUURA ANDRES ; KUURA HELLE ; LATT MARKO ; LEIS JAAN

Agent(s): BIRCH STEWART KOLASCH AND BIRCH

Title: METHODS FOR BULK SYNTHESIS OF CARBON NANOTUBES

Abstract: Methods for synthesizing single-wall carbon nanotubes by extracting metals from a carbide by halogen treatment at a temperature ranging between 700 to 1700 degrees centigrade at ambient or low pressure are provided.

Classifications:

International (IPC 8-9): A01N63/00 B82B3/00 C01B31/00 C01B31/02 D01F9/12 (Advanced/Invention);

A01N63/00 B82B3/00 C01B31/00 D01F9/12 (Core/Invention)

CPC: Y10S977/842 C01B32/162 B82Y40/00 B82Y30/00 C01B2202/02 C01B2202/34 C01B2202/36

European: B82Y30/00 B82Y40/00 C01B31/02B4B2 M01B202/02 M01B202/34 M01B202/36

US: 423/445.00BP 423/445B 423/447.1 977/750 977/750S 977/752 977/752S 977/842

Family:

Publication number	Publication date	Application number	Application date
US2008219913 AA	20080911	US20050571104	20050615
US7744843 BB	20100629	US20050571104	20050615
WO06127017 A2	20061130	WO2005US21017	20050615
WO06127017 A3	20070405	WO2005US21017	20050615

Priority:

US20040581411P 20040621 US20050571104 20050615 WO2005US21017 20050615

Probable Assignee: DREXEL UNIV

Assignee(s): (std): UNIV DREXEL ; GOGOTSI YURY

Assignee(s): DREXEL UNIV ; DREXEL UNIVERSITY

Inventor(s): (std): GOGOTSI YURY

Agent(s): WOODCOCK WASHBURN 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 GW HR HU ID IE IL IN IS IT JP KE KG KM KP KR KZ LC LK LR LS LT LU LV 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

Title: PROCESS FOR PRODUCING NANOPOROUS CARBIDE-DERIVED CARBON WITH INCREASED GAS STORAGE CAPABILITY

Abstract: Methods for producing and using nanoporous carbide-derived carbon in applications involving gas storage are provided.

Classifications:

International (IPC 8-9): B01J20/20 C01B31/02

F17C11/00 (Advanced/Invention);

B01J20/20 C01B31/00 F17C11/00 (Core/Invention)

CPC: B01J20/20 B01J20/205 B01J20/28004 B01J20/28016 B01J20/28057

B01J20/2808 B01J20/2809 B01J20/30 B01J20/305 C01B32/05

European: B01J20/20 B01J20/20D B01J20/28B4 B01J20/28D4

B01J20/28F12B B01J20/28F16B B01J20/28F4 B01J20/30 B01J20/30K

C01B31/02

US: 206/0.7 206/0.700P 423/445.00RS 423/445R

Locarno class: 20/67

PatBase - US2009301902_AA

Patent Application Publication Dec. 10, 2009 Sheet 1 of 5 US 2009/0301902 A1

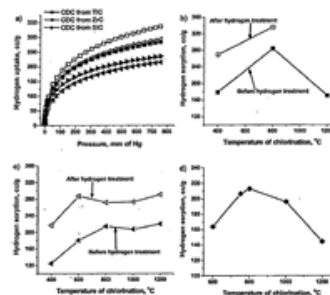


Figure 1

Family:

Publication number	Publication date	Application number	Application date
CA2610069 AA	20071128	CA20062610069	20060601
JP2008542184 T2	20081127	JP20080514813T	20060601
US2009301902 AA	20091210	US20060915953	20060601
WO06130706 A1	20061207	WO2006US21140	20060601

Priority:

US20050686278P 20050601 US20060915953 20060601 WO2006US21140 20060601

Probable Assignee: DREXEL UNIV

Assignee(s): (std): GOGOTSI YURY ; FISHER JOHN E ; DASH RANJAN KUMAR ; TRUSTEES OF UNIV OF ; UNIV DREXEL ; UNIV PENNSYLVANIA ; YUSHIN GLEB

Assignee(s): TRUSTEES OF UNIV OF PENNSYLVANIA ; THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA ; THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA ; DREXEL UNIV ; DREXEL UNIVERSITY ; FISCHER JOHN E ; TRUSTEES OF UNIV PENNSYLVANIA ; TRUSTEES OF UNIV OF PENNSYLVANIA

Inventor(s): (std): DASH RANJAN KUMAR ; FISHER JOHN E ; GOGOTSI YURY ; YUSHIN GLEB

Inventor(s): FISCHER JOHN E

Agent(s): BORDEN LADNER GERVAIS LLP; WOODCOCK WASHBURN 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 GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC 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

Title: PROCESS FOR PRODUCING NANOPOROUS CARBIDE DERIVED CARBON WITH LARGE SPECIFIC SURFACE AREA

Abstract: Processes for the synthesis of high specific surface area nanoporous carbons by reacting select carbides with one or more halogens to produce compositions comprising carbon and halogens and contacting the reacted carbides with a species capable of removing the halogen are provided. Methods for removing halogen impurities from carbon compositions having pores and for modifying the surface terminations of carbon compositions having pores are also provided.

Classifications:

International (IPC 8-9): B01J20/20 B32B5/18 C01B31/02
C01B31/08 (Advanced/Invention);

B01J20/20 B32B5/18 C01B31/00 (Core/Invention)

CPC: Y10T428/24355 B01J20/20 B01J20/28073 B01J20/28076
B01J20/2808 C01B32/05 B01J20/28057

European: B01J20/20 B01J20/28F12B B01J20/28F4 B01J20/28F8D
B01J20/28F8F C01B31/02

US: 423/445.00BS 423/445B 428/141 428/141S 502/402 502/418
502/418S

PatBase - US2009036302_AA

Parent Application Publications Pub. 5, 2009 Sheet 1 of 4 US 2009036302 A1

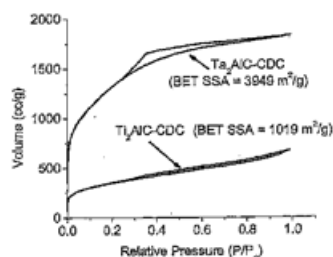


FIGURE 1A

Family:

Publication number	Publication date	Application number	Application date
EP1957405 A1	20080820	EP20060838241	20061121
JP2009517314 T2	20090430	JP20080542427T	20061121
US2009036302 AA	20090205	US20060094501	20061121
WO07062095 A1	20070531	WO2006US45154	20061121

Priority:

US20050739910P 20051123 US20060094501 20061121 WO2006US45154 20061121

Probable Assignee: DREXEL UNIV

Assignee(s): (std): GOGOTSI YURY ; UNIV DREXEL ; YUSHIN GLEB ; HOFFMAN ELIZABETH NOLA ; BARSOUM MICHEL M

Assignee(s): DREXEL UNIV ; DREXEL UNIVERSITY

Inventor(s): (std): BARSOUM MICHEL M ; GOGOTSI YURY ; HOFFMAN ELIZABETH NOLA ; YUSHIN GLEB

Agent(s): DUNLEAVY KEVIN JAMES ET AL; WOODCOCK WASHBURN LLP

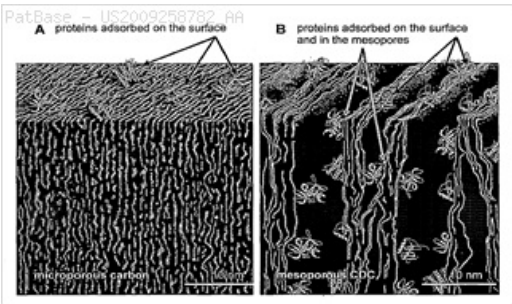
Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL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

Title: MESOPOROUS CARBONS

Abstract: Provided are products, systems, and methods relating to the removal of particles from fluid samples using mesoporous carbon materials.

Classifications:

International (ipc 8-9): A61K33/44 A61P29/00 A61P31/04 A61P31/12 B01J19/08 B01J20/20 B01J20/26 B01J21/18 B32B3/26 C01B31/02 C01B31/08 D01F9/127 (Advanced/Invention); A61K33/44 A61P29/00 A61P31/00 B01J19/08 B01J20/20 B01J20/22 B01J21/00 B32B3/26 C01B31/00 D01F9/12 (Core/Invention)
CPC: A61M1/3486 B01J20/28069 A61M1/3679 B01D15/00 B01J20/20 B01J20/28014 B01J20/2803 B01J20/28057 B01J20/28076 B01J20/28083 Y10T428/249953
European: B01D15/00 B01J20/20 B01J20/28D B01J20/28D20 B01J20/28F12D B01J20/28F4 B01J20/28F8 B01J20/28F8F K61M1/34F6 K61M1/36P
US: 428/304.4 428/304.400S 502/402 502/414 502/414S 502/416 502/416S



Family:

Publication number	Publication date	Application number	Application date
EP1976627 A2	20081008	EP20060845155	20061208
JP2009518277 T2	20090507	JP20080544570T	20061208
US2009258782 AA	20091015	US20060096526	20061208
WO07070455 A2	20070621	WO2006US47129	20061208
WO07070455 A3	20080207	WO2006US47129	20061208

Priority:

US20050749117P 20051209 US20060835644P 20060804 US20060096526 20061208
WO2006US47129 20061208

Probable Assignee: DREXEL UNIV

Assignee(s): (std): GOGOTSI YURY ; MIKHALOVSKY SERGEY VICTORVICH ; LLOYD ANDREW WILLIAM ; UNIV BRIGHTON ; PHILLIPS GARY JAMES ; UNIV BRIGHTON SCHOOL OF PHARMA ; YUSHIN GLEB ; UNIV DREXEL

Assignee(s): UNIVERSITY OF BRIGHTON SCHOOL OF PHARMACY AND BIOMOLECULAR SCIENCES ; BRIGHTON UNIV ; DREXEL UNIV ; DREXEL UNIVERSITY ; OF BRIGHTON UNIV ; NAVY SECRETARY OF UNITED STATES OF AMERICA ; OF BRIGHTON SCHOOL OF PHARMACY AND BIOMOLECULAR SCIENCES UNIV ; UNIVERSITY OF BRIGHTON

Inventor(s): (std): GOGOTSI YURY ; LLOYD ANDREW WILLIAM ; MIKHALOVSKY SERGEY VICTORVICH ; PHILLIPS GARY JAMES ; YUSHIN GLEB

Agent(s): WOODCOCK WASHBURN 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 LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: METHOD OF PRODUCING CARBON MATERIAL

Classifications:

International (IPC 8-9): C01B31/02 (Advanced/Invention);
C01B31/00 (Core/Invention)

International (IPC 1-7): C01B31/02

Family:

Publication number	Publication date	Application number	Application date
 SU1175869 A1	19850830	SU19843687250	19840105

Priority:

SU19843687250 19840105

Probable Assignee: LE T I IM LENSOVETA

Assignee(s): (std): LE T I IM LENSOVETA

Assignee(s): LE REVOLYUTSII T I IM LENSOVETA ; LE REVOLYUTSII T I IMLENSOVETA

Inventor(s): (std): SAMONIN VYACHESLAV V ; IVAKHNYUK GRIGORIJ K ; FEDOROV NIKOLAJ F

Inventor(s): SAMONIN VYACHESLAV V SU ; FEDOROV NIKOLAJ F SU ; IVAKHNYUK GRIGORIJ K SU

Title: DIAMOND COATED SINTERED BODY

Abstract: The present invention provides a diamond coated sintered body characterized by having a diamond film formed by a gas phase synthesis method on the surface of a sintered body obtained from a mixture of tungsten carbide and at least one compound selected from the group consisting of carbide and nitride of silicon or boron and, if necessary, additionally at least one compound selected from the group consisting of carbide, oxide, nitride, carbonitride, carbonate, boride and organic compound of at least one element selected from the group consisting of metals and rare earth elements belonging to Groups Ia, IIa, IIIa, IVa, Va, IIb and IVb of the Mendelejeff's periodic table.

Classifications:

International (IPC 8-9): B22F7/02 B23P15/28 B24D3/04 B24D3/10 B32B7/02 C04B41/50 C04B41/85 C04B41/87 C23C16/26 C23C16/48 (Advanced/Invention);

B22F7/02 B23P15/28 B24D3/04 B32B7/02 C04B41/45 C04B41/85 C04B41/87 C23C16/26 C23C16/48 (Core/Invention)

International (IPC 1-7): B22F7/02 B23B27/20 B23B5/00 B23B9/00 B23P15/28 B23P5/00 B24D3/04 B24D3/10 B32B7/02 B32B9/00 C04B41/85 C04B41/87 C23C16/26 C23C16/48

CPC: Y10S428/936 C04B41/009 B24D3/10 C04B41/5002 C04B41/85 C23C16/26 Y10T428/30

European: B24D3/10 C04B41/00V C04B41/50B2 C04B41/85 C23C16/26

US: 428/408 428/698 428/699 428/701 428/702 428/704 428/936

№№ при- меров	Состав смеси материала основы, %										Время до отсла- ивания алмазно- го покры- тия	
	WC	Si3N4	SiC	SiC	B4C	TiN	Y2O3	Al2O3	ZrO2	MgO		Co
7	15	63					2			1		105
8	30	65					2		2			144
9	30	68					1		1			116
10	45	50					5					108
11	60	30							5	5		85
12	50	35	5				4		6			96
13	62	30					2	3	3			90
1	94										6	2
2		94					3		3			55

Family:

Publication number	Publication date	Application number	Application date
CA2008185 AA	19900720	CA19902008185	19900119
DD296877 A5	19911219	DD19900337160	19900117
EP0379220 A1	19900725	EP19900101105	19900119
JP2275788 A2	19901109	JP19890315935	19891205
KR19900011535 A	19900801	KR19900000482	19900116
KR930010199 B1	19931015	KR19900000482	19900116
RU2018411 C1	19940830	SU19904742938	19900119
US4990403 A	19910205	US19900459626	19900102

Priority:

JP19890011572 19890120

JP19890315935 19891205

Probable Assignee: NGK SPARK PLUG CO LTD

Assignee(s): (std): IDEMITSU PETROCHEMICAL CO ; IDEMITSU PETROKEMIKAL KOMPANI

Assignee(s): NGK SPARK PLUG CO LTD ; IDEMITSU PETROKEMIKAL KOMPANI LIMITED ; IDEMITSU PETROCHEMICAL COMPANY LIMITED JP ; IDEMITSU PETROCHEMICAL CO LTD ; IDEMITSU PETROCHEMICAL COMPANY LIMITED ; IDCAL CO LTD ; IDEMITSU PETROCHEM CO LTD

Inventor(s): (std): ITO TOSIMITI ; ITOH TOSHIMICHI ; ITO TOSHIMICHI

Inventor(s): ITO TOSHIMICHI JP

Designated states: BE CH DE FR GB IT LI NL SE

Title: Production of metal powders by reduction of metal salts in fused bath

Abstract: In a process for the production of a metal by reducing a salt of said metal, an exchange is carried out between a reducing metal and a reducible metal within a fused salt bath under conditions in which the reducible metal in the reduced metal state is immiscible in the bath in the presence of the reducing metal which has previously been dissolved in the bath.

Classifications:

International (IPC 8-9): B22F9/18 B22F9/20 B22F9/24 B22F9/28
C22B34/00 C22B34/12 C22B34/14 C22B34/24 C22B5/00

C22B5/04 (Advanced/Invention);

B22F9/16 C22B34/00 C22B5/00 (Core/Invention)

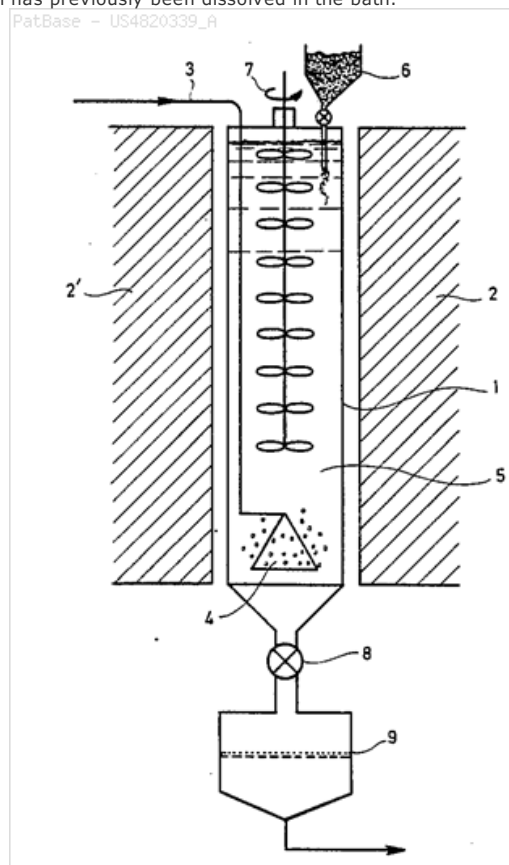
International (IPC 1-7): B22F9/16 C22B21/00 C22B23/00 C22B27/00
C22B34/00 C22B5/00 C22B5/04

CPC: B22F9/18 B22F9/20 B22F9/24 B22F9/28 C22B5/04 C22B34/1272
C22B34/14 C22B34/24

European: B22F9/18 B22F9/20 B22F9/24 B22F9/28 C22B34/12H2B
C22B34/14 C22B34/24 C22B5/04

US: 75/0.5B 75/0.5BB 75/251 75/368 75/617 75/619 75/622 75/84.4
75/84.5

PatBase - US4820339_A



Family:

Publication number	Publication date	Application number	Application date
CA1304943 A1	19920714	CA19870537153	19870514
FR2582019 A1	19861121	FR19850007489	19850517
FR2582019 B1	19870626	FR19850007489	19850517
US4820339 A	19890411	US19870059700	19870609

Priority:

FR19850007489 19850517 CA19870537153 19870514 US19870059700 19870609

Probable Assignee: CEREX

Assignee(s): (std): BIENVENU GERARD ; CEREX ; EXTRAMET SA

Assignee(s): EXTRAMET ; GIRARDOT JEAN CLAUDE ; VAXELAIRE PHILIPPE ; CHALEAT BERNARD ; DUBRUQUE DOMINIQUE

Inventor(s): (std): VAXELAIRE PHILIPPE ; GIRARDOT JEAN CLAUDE ; DUBRUQUE DOMINIQUE ; CHALEAT BERNARD ; BIENVENU GERARD PIERRE ; BIENVENU GERARD

Inventor(s): GERARD PIERRE BIENVENU BERNARD CHALEAT... ; GERARD PIERRE BIENVENU BERNARD CHALEAT DOMINIQUE D

Agent(s): GOUDREAU GAGE DUBUC

Title: NANOPOROUS CARBONACEOUS MEMBRANES AND RELATED METHODS

Abstract: Disclosed are nanoporous carbonaceous membranes and related devices, along with associated methods.

Classifications:

International (IPC 8-9): B01D53/22 B01D67/00 B01D71/02 B01J20/20 B32B3/26 C01B31/02 C23C14/34 C23C16/32

C23C16/34 (Advanced/Invention);

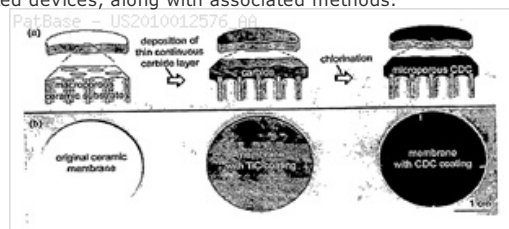
B01D53/22 B01D67/00 B01D71/00 B01J20/20 B32B3/26 C01B31/00 C23C14/34 C23C16/32 C23C16/34 (Core/Invention)

CPC: Y10T428/249921 Y10T428/249978 B01D71/021 B01D53/228

B01D67/0072 B01D67/0093 B01D69/02 B01D69/12 B01D2325/021

European: B01D53/22M B01D67/00M24 B01D67/00R18 B01D69/02 B01D69/12 B01D71/02C L01D325/02B

US: 204/192.15 210/496 427/245 427/249.1 428/221 428/315.5 96/11



Family:

Publication number	Publication date	Application number	Application date
AU2007249780 AA	20071122	AU20070249780	20070511
CA2652037 AA	20081112	CA20072652037	20070511
EP2024070 A1	20090218	EP20070777002	20070511
JP2009536916 T2	20091022	JP20090510994T	20070511
US2010012576 AA	20100121	US20070300399	20070511
WO07133700 A1	20071122	WO2007US11442	20070511

Priority:

US20060799980P 20060512 US20070300399 20070511 WO2007US11442 20070511

Probable Assignee: DREXEL UNIV

Assignee(s): (std): GOGOTSI YURY ; HOFFMAN ELIZABETH NOLA ; YUSHIN GLEB ; UNIV DREXEL ; BARSOUM MICHEL W

Assignee(s): DREXEL UNIV ; DREXEL UNIVERSITY

Inventor(s): (std): GOGOTSI YURY ; HOFFMAN ELIZABETH NOLA ; BARSOUM MICHEL W ; YUSHIN GLEB

Inventor(s): ELIZABETH NOLA HOFFMAN ; GLEB YUSHIN ; MICHEL W BARSOUM ; YURY GOGOTSI

Agent(s): FB RICE; FB RICE PTY LTD; SMART AND BIGGAR; DUNLEAVY KEVIN JAMES; WOODCOCK WASHBURN 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 DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: PROCESS FOR THE CONVERSION OF HYDROCARBONS TO OXYGENATES

Abstract: The present invention provides a process, that has a reduced level of CO₂ emissions, for the conversion of hydrocarbons into alcohol(s) in the presence of a catalyst.

Classifications:

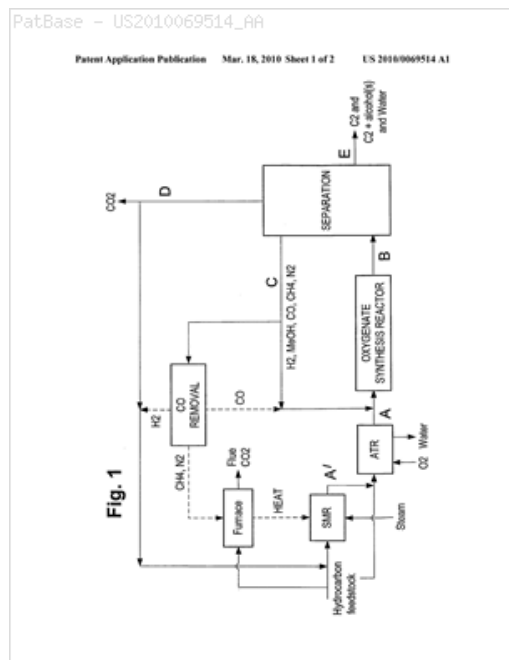
International (IPC 8-9): C07C27/00 C07C29/151 (Advanced/Invention);

C07C29/00 (Core/Invention)

CPC: C07C29/1518

European: C07C29/151B1

US: 518/700 518/702 518/703 518/704 518/704P 518/705



Family:

Publication number	Publication date	Application number	Application date
■ CN101568509 A	20091028	CN200780047760	20071017
■ EP1916233 A1	20080430	EP20060255414	20061020
■ EP2076480 A1	20090708	EP20070824191	20071017
■ US2010069514 AA	20100318	US20070311944	20071017
■ US8299133 BB	20121030	US20070311944	20071017
■ WO08047103 A1	20080424	WO2007GB03940	20071017
■ WO08047103 A8	20091018	WO2007GB03940	20071017

Priority:

EP20060255414 20061020 EP20070824191 20071017 WO2007GB03940 20071017

Probable Assignee: BP PLC

Assignee(s): (std): BP CHEM INT LTD ; GRACEY BENJAMIN PATRICK ; LEE MICHAEL KEITH

Assignee(s): BP CHEMICALS LIMITED ; BP CHEMICALS LTD ; BP PLC

Inventor(s): (std): KEITH LEE MICHAEL : PATRICK GRACEY BENJAMIN : LEE MICHAEL KEITH : GRACEY BENJAMIN PATRICK

Agent(s): DE KEZEL ERIC ET AL; DE KEZEL ERIC; NIXON AND VANDERHYE PC; NIXON AND VANDERHYE; DEKEZEL ERIC

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: CARBIDE DERIVED CARBON, EMITTER FOR COLD CATHODE INCLUDING THE SAME AND ELECTRON EMISSION DEVICE INCLUDING THE EMITTER

Abstract: Provided are carbide derived carbon prepared by thermochemically reacting carbide compounds and a halogen element containing gas and extracting all atoms of the carbide compounds except carbon atoms, wherein the intensity ratios of the graphite G band at 1590 cm⁻¹ to the disordered-induced D band at 1350 cm⁻¹ are in the range of 0.3 through 5 when the carbide derived carbon is analyzed using Raman peak analysis, wherein the BET surface area of the carbide derived carbon is 1000 m²/g or more, wherein a weak peak or wide single peak of the graphite (002) surface is seen at 2theta=25 degrees when the carbide derived carbon is analyzed using X-ray diffractometry, and wherein the electron diffraction pattern of the carbide derived carbon is the halo pattern typical of amorphous carbon when the carbide derived carbon is analyzed using electron microscopy. The emitter has good uniformity and a long lifetime. An emitter can be prepared using a more inexpensive method than that used to manufacture conventional carbon nanotubes.

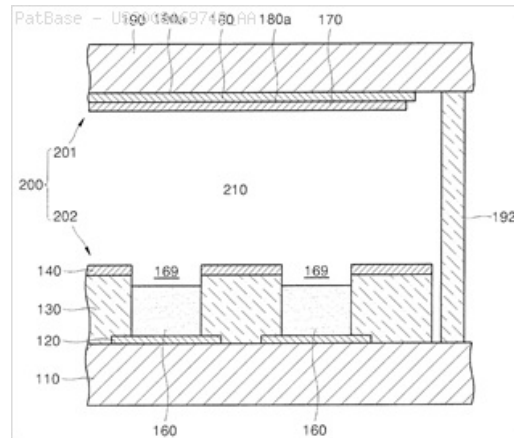
Classifications:

International (IPC 8-9): C01B31/00 C01B31/02 C01B31/04 H01J1/30 H01J1/304 H01J1/62 H01J19/24 H01J21/00 (Advanced/Invention); C01B31/02 H01J1/30 (Advanced/Non-invention); C01B31/00 H01J1/00 H01J1/30 (Core/Invention)

CPC: H01J9/025 H01J1/304 H01J2201/30446 C01B32/05 C01B32/90

European: C01B31/02 H01J1/304 H01J9/02B2 T01J201/304D

US: 313/498 423/461



Family:

Publication number	Publication date	Application number	Application date
■ CN101181990 A	20080521	CN200710167147	20071024
■ EP1916223 A1	20080430	EP20070119133	20071024
■ EP1916223 A8	20080723	EP20070119133	20071024
■ JP2008105922 A2	20080508	JP20070081826	20070327
■ KR20080054165 A	20080617	KR20060126401	20061212
■ RU2006137605 A	20080427	RU20060137605	20061024
■ TW200837009 A	20080916	TW20070135711	20070926
■ US2008169749 AA	20080717	US20070865249	20071001

Priority:

RU20060137605 20061024 KR20060126401 20061212

Probable Assignee: SAMSUNG SDI CO LTD

Assignee(s): (std): IOFFE PHYSICO TECHNICAL INST O ; SAMSUNG SDI CO LTD ; IOFFE PHYSICO TECHNICAL INST O

Assignee(s): IOFFE PHYSICO TECHNICAL INST ; IOFFE PHYSICO TECHNICAL INST OF RUSSIAN ACADEMY OF ; IOFFE PHYSICO TECHNICAL INSTITUTE OF RUSSIAN ACADEMY OF SCIENCES ; IOFFE PHYSICO TECHNICAL INST OF RUSSIAN ACADEMY OF SCIENCES ; IOFFE PHYSICO TECHNICAL INST OF RUSSIAN ACADEMY OF SCIENCES ; IOFFE PHYSICO TECHNICAL INST OF RUSSIAN ACADEMY OF SCIENCE ; IOFFE PHYSICO TECHNICAL INST OF RUSSIAN ACADEMY OF SCIENCES ; IOFFE PHYSICO TECHNICAL INST RUSSIAN ACADEMY OF SCIENCE ; IOFFE PHYSICO TECHNICAL INSTITUTE OF RUSSIAN ACADEMY OF SCIENCE ; SAMSUNG SDI CO ; IOFFE PHYSICO TECHNICAL INSTITUTE OF RUSSIAN

Inventor(s): (std): EFIMOVICH KRAVCHIK ALEXANDER ; FEDOROVICH TERESHCHENKO GENNAD ; GARIFOVICH GABDULLIN PAVEL ; KIM JAE MYUNG ; KIM YOON JIN ; MOON HEE SUNG ; NIKOLAYEVICH DAVYDOV SERGEY ; VASILYEVICH KORABLEV VADIM ; VASILYEVICH SOKOLOV VASILY ; ZANG DONG SIK ; GENNAD CHENKO ; FEDOROVICH TERESHCHENKO GENNADY ; ALEXANDROVNA KUKUSHKINA YULIA

Inventor(s): ALECANDROVNA KUKUSHKINA YULIA ; CHENKO GENNAD

Agent(s): HENGELHAUPT JUERGEN ET AL; KAMEYA YOSHIKI; KANEMOTO TETSUO; STEIN MCEWEN AND BUI LLP

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

Title: METHOD TO MODIFY PORE CHARACTERISTICS OF POROUS CARBON AND POROUS CARBON MATERIALS PRODUCED BY THE METHOD

Abstract: A method to selectively increase in high-density porous carbon materials the pore size of such pores that are too small to be accessible for certain molecules. The method applies to porous carbon materials with a density of at least 0.6 g/cm^3 , with a microporosity of at least $0.45 \text{ cm}^3/\text{g}$ as measured by benzene absorption and with pore size distribution where at least 20 percent of the micropores are of size below 10 Å. Specific surface of the precursor carbon material is typically $>800 \text{ m}^2/\text{g}$. The method further employs the use of such liquid oxidants for which the precursor material will function as a molecular sieve, water being a preferred such oxidant.

Classifications:

International (IPC 8-9): C01B31/00 C01B31/02

C01B31/08 (Advanced/Invention);

C01B31/00 (Core/Invention)

International (IPC 1-7): C01B31/00 C01B31/02 C01B31/08 C01B31/12

CPC: Y02E60/13 H01G11/24 B01J20/2808 B01J20/2809 B01J20/28097

H01G11/34 H01G11/42 C01B32/00 C01B32/30

European: B01J20/28F12B B01J20/28F16B B01J20/28F20B C01B31/00

C01B31/08 H01G11/24 H01G11/34 H01G11/42 H01G9/058

US: 264/44 264/44S 423/445.00R 423/445.00RP 423/445R 423/460

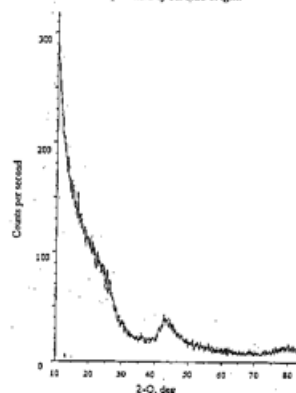
423/460S

PatBase - US2006140846_AA

Patent Application Publication Jan. 29, 2006 Sheet 1 of 5 US 2006/0140846 A1

FIG. 1

Characteristic XRD spectrum by $\text{CuK}\alpha$ -radiation of inventive carbon powders of carbide origin.



Family:

Publication number	Publication date	Application number	Application date
AU2003227665 AA	20041119	AU20030227665	20030423
EP1615851 A1	20060118	EP20030725079	20030423
JP2006513969 T2	20060427	JP20040571024T	20030423
US2006140846 AA	20060629	US20030554137	20030423
WO04094307 A1	20041104	WO2003EP04202	20030423

Priority:

WO2003EP04202 20030423

Probable Assignee: FOC FRANKENBURG OIL CO EST

Assignee(s): (std): ARULEPP MATI ; FOC FRANKENBURG OIL CO ES ; FOC FRANKENBURG OIL COMPANY ES ; PERKSON ANTI ; LEIS JAAN

Assignee(s): FOC FRANKENBURG OIL COMPANY EST ; FOC FRANKENBURG OIL CO EST ; FOC FRANKENBURG OIL CO

Inventor(s): (std): ARULEPP MATI ; LEIS JAAN ; PERKSON ANTI

Inventor(s): ANTI PERKSON ; MATI ARULEPP ; JAAN LEIS

Agent(s): COOPER AND DUNHAM 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 LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NI 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: CARBON NANOTUBE HYBRID SYSTEM USING CARBIDE-DERIVED CARBON, A METHOD OF MAKING THE SAME, AN ELECTRON EMITTER COMPRISING THE SAME, AND AN ELECTRON EMISSION DEVICE COMPRISING THE ELECTRON EMITTER

Abstract: A carbon nanotube hybrid system includes: a carbide-derived carbon prepared by reacting a carbide compound and a halogen group containing gas to extract elements of the carbide compound except carbons; metals supported on the carbide-derived carbon or remaining in the carbide-derived carbon; and carbon sources from which carbon nanotubes are grown from the carbide-derived carbon. A method of preparing the carbon nanotube hybrid system includes preparing the carbide-derived carbon, extracting elements therefrom, and growing carbon nanotubes from the carbide-derived carbon. The carbon nanotube hybrid system has excellent uniformity and a long lifetime. An electron emitter having improved electron emitting properties can be inexpensively prepared using the carbon nanotube hybrid system compared to conventional carbon nanotubes. An electron emission device having excellent electron emitting properties can be prepared using the electron emitter.

Classifications:

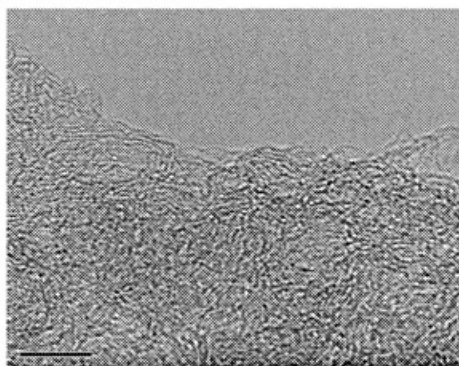
International (IPC 8-9): B01J23/745 B01J27/22 B32B9/00 B82B1/00 B82B3/00 C01B31/02 D01F9/12 H01J1/02 H01J1/30 (Advanced/Invention); B82B3/00 (Advanced/Non-invention); B01J23/745 B01J27/20 B32B9/00 B82B1/00 B82B3/00 C01B31/00 D01F9/12 H01J1/30 (Core/Invention)

CPC: Y10S977/742 Y10T428/30 B82Y30/00 C01B2202/02 H01J1/304 H01J2201/30469 C01B32/162 H01J9/025 B82Y40/00

European: B82Y30/00 B82Y40/00 C01B31/02B4B2 H01J1/304 H01J9/02B2 M01B202/02 T01J201/304D4H

US: 423/447.1 423/447.100S 428/408 428/408P 977/742 977/788 977/788S

PatBase - US2008248310_HH



Family:

Publication number	Publication date	Application number	Application date
■ CN101279732 A	20081008	CN200810091138	20080407
■ EP1977999 A1	20081008	EP20080153934	20080402
■ JP2008255003 A2	20081023	JP20080080005	20080326
■ KR100829759 B1	20080515	KR20070033358	20070404
■ US2008248310 AA	20081009	US20080050437	20080318
■ US7678452 BB	20100316	US20080050437	20080318

Priority:

KR20070033358 20070404

Probable Assignee: SAMSUNG SDI CO LTD

Assignee(s): (std): SAMSUNG SDI CO LTD

Assignee(s): SAMSUNG SDI CO

Inventor(s): (std): KIM JAE MYUNG ; KIM YOON JIN ; MOON HEE SUNG

Agent(s): HENGELHAUPT JUERGEN ET AL; IPD INT PATENT FIRM; KAMEYA YOSHIKI; KANEMOTO TETSUO; STEIN MCEWEN AND BUI LLP; STEIN MCEWEN LLP

Designated states: AL BA DE GB MK RS

Title: METHOD FOR PRODUCING CARBON SURFACE FILMS BY PLASMA EXPOSURE OF A CARBIDE COMPOUND

Abstract: Reactive halogen-ion plasmas, having for example, generating chloride ions, generated from low-pressure halogen gases using a radio-frequency plasma are employed for producing low-friction carbon coatings, such as a pure carbon film, at or near room temperature on a bulk or thin film of a compound, such as titanium carbide.

Classifications:

International (IPC 8-9): C23C16/02 C23C16/32

H05H1/24 (Advanced/Invention);

H05H1/24 (Core/Invention)

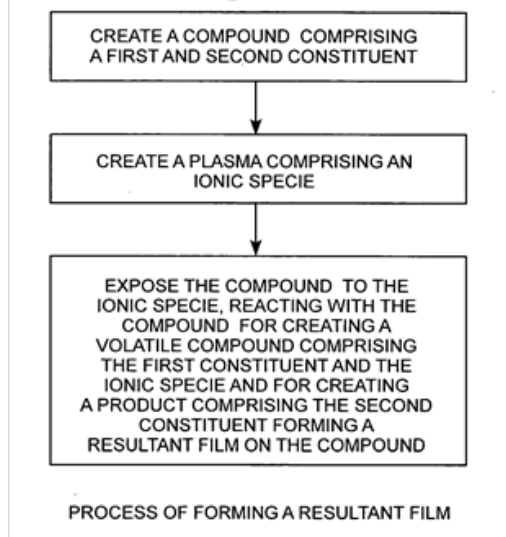
CPC: B81B3/0075 B81C1/0038 B81C2201/0181 C04B35/5607

C04B35/5611 C04B35/5622 C04B35/5626 C04B35/565 C04B2235/96
C04B2235/9692

European: B81B3/00S2W B81C1/00D99 C04B35/565 C04B35/56H
C04B35/56H14 C04B35/56H2 C04B35/56H8 L81C201/01F4 M04B235/96
M04B235/96M6

US: 427/249.1 427/249.8 427/569 427/569P

PatBase - US2006068125_AA



Family:

Publication number	Publication date	Application number	Application date
■ US2006068125 AA	20060330	US20040954455	20040930
■ US7241475 BB	20070710	US20040954455	20040930

Priority:

US20040954455 20040930

Probable Assignee: AEROSPACE CORP

Assignee(s): (std): AEROSPACE CORP ; RADHAKRISHNAN GOURI

Inventor(s): (std): RADHAKRISHNAN GOURI

Agent(s): CAROLE A MULCHINSKI AEROSPACE CORP; DERRICK MICHAEL

Title: NOVEL CATALYST FOR OXYGEN REDUCTION REACTION IN FUEL CELLS

Abstract: A method for making a carbon-metal-nitrogen oxygen reducing cathode catalyst, the method comprising mixing a carbon source with a transitional metal precursor to form a metal precursor loaded carbon substrate; adding a nitrogen precursor compound to the metal precursor loaded carbon substrate to form a carbon-metal-nitrogen precursor; and pyrolyzing the carbon-metal-nitrogen precursor in a closed vessel, thereby forming an oxygen reducing cathode catalyst. The carbon-metal-nitrogen catalyst requires no precious metal such as Pt, and also provides benefits such as controlled deposition of catalytically active nitrogenous compounds that can increase the catalytic activity of the catalyst when compared to gaseous deposition of nitrogen to the surface of the carbon support.

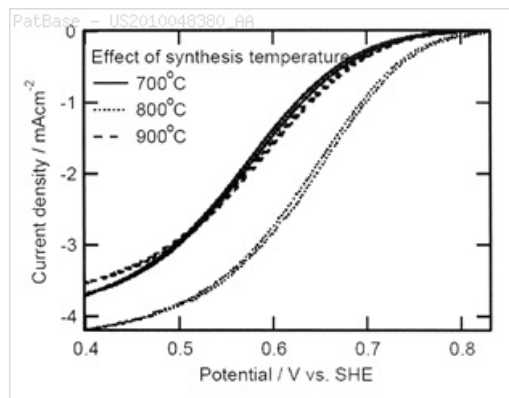
Classifications:

International (IPC 8-9): B01J27/20 B01J37/08 B01J37/34 B05D5/12
H01M4/00 H01M4/86 H01M4/88 H01M4/90 H01M4/92 H01M4/96
H01M8/10 (Advanced/Invention);
B01J27/20 B01J37/00 (Core/Invention)

CPC: H01M4/8652 H01M4/8825 H01M4/8807 H01M4/881 H01M4/90
H01M4/92 H01M4/96 H01M8/1004 H01M2008/1095 Y02P70/56
Y02E60/521

European: H01M4/88B2 H01M4/88B4 H01M4/90 H01M4/92 H01M4/96
H01M8/10B2 T01M8/10P Y02E60/52B

US: 1/1 427/115 427/115P 502/101 502/174 502/174S 502/5 502/5P

**Family:**

Publication number	Publication date	Application number	Application date
US2010048380 AA	20100225	US20090583532	20090821
US2011287174 AA	20111124	US20110068651	20110517
US2013280419 AA	20131024	US20130815102	20130130
US9379388 BB	20160628	US20130815102	20130130

Priority:

US20080090780P 20080821 US20090583532 20090821 US20110068651 20110517
US20130815102 20130130

Probable Assignee: BOARD OF TRUSTEES OF MICHIGAN STATE UNIV

Assignee(s): (std): UNIV MICHIGAN STATE ; RAMANUJAM KOTHANDARAMAN ; CALABRESE BARTON SCOTT A ; NALLATHAMBI VIJAYADURGA

Assignee(s): BOARD OF TRUSTEES OF MICHIGAN STATE UNIV ; BOARD OF TRUSTEES OF MICHIGAN STATE UNIVERSITY

Inventor(s): (std): CALABRESE BARTON SCOTT A ; NALLATHAMBI VIJAYADURGA ; RAMANUJAM KOTHANDARAMAN

Agent(s): HARNESS DICKEY AND PIERCE PLC

Title: VERFAHREN ZUR HERSTELLUNG VON DIAMANTEN UNTER MILDEN SYNTHESBEDINGUNGEN METHOD FOR PRODUCING DIAMONDS UNDER MILD CONDITIONS SYNTHESIS (Machine translation)

Abstract: Source: DE1667532A1 [DE] (Claim 1) 1.) Verfahren zur Herstellung von Diamanten bei normalem oder maessig erhoehtem oder vermindertem Druck und bei Temperaturen bis hinauf zu etwa 1000 o C, dadurch gekennzeichnet, daB Kohlenstoffatome zwecks Herbeifuehrung ihrer gesaettigten, allseits ein fachbindigen Valenzbetaetigung unmittelbar am vorgesehenen Kri- stallisationsort in hoher Konzentration freigesetzt werden, wobei die abzuscheidende Kohlenstoffmenge (mit umweltbedingten Abwei chungen) etwa 0,1 g/cm min betraegt.

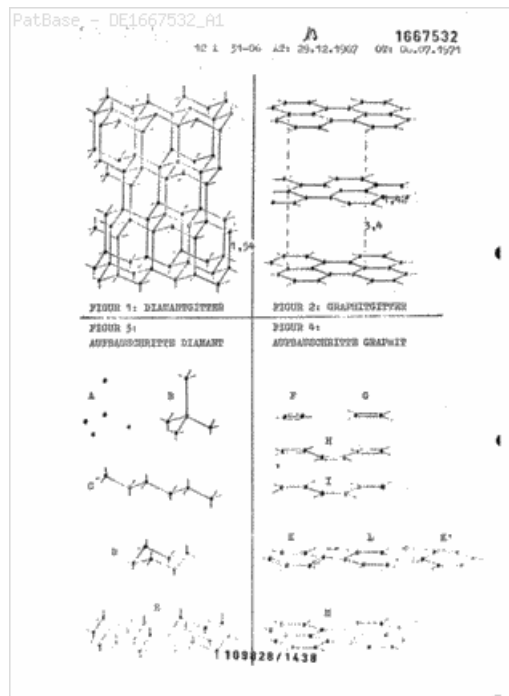
Machine translation: (Claim 1) 1) process for the production of diamonds at normal or moderately elevated or reduced pressure and at temperatures up to about 1000 o C, characterized by the fact that carbon atoms in order Herbeifuehrung its saturated, well-a specialized cohesive Valenzbetaetigung directly at the intended Kri-stallisationsort be released in high concentration, the amount of carbon deposited (investigations with environmental deviation) is about 0.1 g / cm SHALL min.

Classifications:

International (IPC 8-9): C01B31/06 (Advanced/Invention);
C01B31/00 (Core/Invention)

International (IPC 1-7): C01B31/06

CPC: C01B32/25



Family:

Publication number	Publication date	Application number	Application date
DE1667532 A1	19710708	DE19671667532	19671229

Priority:

DE1967G052040 19671229

Probable Assignee:

GREINER HERBERT

Assignee(s): (std):

GREINER HERBERT

Inventor(s): (std):

GREINER HERBERT

Title: OPEN POROUS ELECTRICALLY CONDUCTIVE NANOCOMPOSITE MATERIAL

Abstract: Nanocomposites of conductive, nanoparticulate polymer and electronically active material, in particular PEDOT and LiFePO₄, were found to be significantly better compared to bare and carbon coated LiFePO₄ in carbon black and graphite filled non conducting binder. The conductive polymer containing composite outperformed the other two samples. The performance of PEDOT composite was especially better in the high current regime with capacity retention of 82 percent after 200 cycles. Hence an electrode based on composite made of conductive, nanoparticulate polymer and electronically active material, in particular LiFePO₄ and PEDOT nanostubs, with its higher energy density and increased resistance to harsh charging regimes proved to dramatically extend the high power applicability of materials such as LiFePO₄.

Classifications:

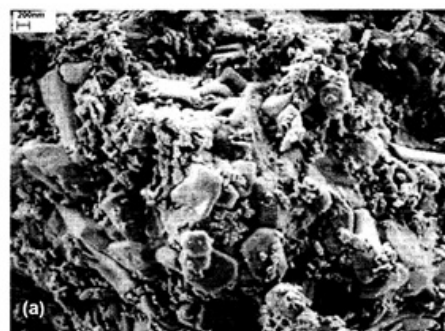
International (IPC 8-9): B05D5/12 B82B B82B1/00 B82B3/00 B82Y40/00 C01B21/06 C09J11/04 C09J11/06 C09J9/02 C25C H01B1/02 H01B1/04 H01B1/12 H01M10/052 H01M10/0525 H01M4/00 H01M4/02 H01M4/04 H01M4/13 H01M4/131 H01M4/133 H01M4/136 H01M4/1391 H01M4/1397 H01M4/26 H01M4/36 H01M4/38 H01M4/48 H01M4/485 H01M4/505 H01M4/525 H01M4/58 H01M4/583 H01M4/587 H01M4/60 H01M4/62 (Advanced/Invention); B82B3/00 H01M10/0525 H01M4/00 H01M4/36 H01M4/58 H01M4/583 H01M4/62 (Advanced/Non-invention); B05D5/12 H01B1/02 H01B1/04 H01B1/12 H01M4/02 H01M4/04 H01M4/36 H01M4/48 H01M4/52 H01M4/58 H01M4/62 (Core/Invention); C09J11/04 C09J11/06 C09J9/02 H01M10/0525 H01M4/136 H01M4/26 H01M4/36 H01M4/485 H01M4/587 H01M4/62 (Core/Non-invention); B82B C25C (Subclass/Invention)

CPC: H01M4/136 H01M4/366 H01M4/621 H01M4/625 Y02P70/54 H01M4/58

European: H01M10/052 H01M10/0525 H01M4/136 H01M4/505 H01M4/525 H01M4/587 H01M4/58C H01M4/58D H01M4/60 H01M4/60M2 H01M4/60M4 H01M4/60M4B H01M4/62B H01M4/62C Y02E60/12B Y02T10/70B2

US: 252/182.1 252/182.100S 252/504 252/504S 252/506 252/506S 252/516 252/516S 252/518.1 252/518.100S 252/519.34 252/519.340S 427/122 427/122S 427/58 427/58S 429/209 429/209S 429/217 429/217P 429/218.1 429/218.100S 429/221 429/221S 429/223 429/231 429/231.5 429/231.500S 429/231.95 429/231.950P 977/773 977/773S 977/948 977/948S

PatBase - US2010233538_AA



Family:

Publication number	Publication date	Application number	Application date
AU2010200959 AA	20100930	AU20100200959	20100312
AU2010200960 AA	20100930	AU20100200960	20100312
CN101916859 A	20101215	CN201010214081	20100312
CN102064313 A	20110518	CN201010214103	20100312
CN102064313 B	20150902	CN201010214103	20100312
DE602009021963 D1	20140410	DE200960021963T	20090401
DE602009022126 D1	20140417	DE200960022126T	20090401
EP2228854 A1	20100915	EP20090157136	20090401
EP2228854 B1	20140305	EP20090157136	20090401
EP2228855 A1	20100915	EP20090157137	20090401
EP2228855 B1	20140226	EP20090157137	20090401
IL204435 A0	20101230	IL20100204435	20100311
IL204466 A0	20101230	IL20100204466	20100314
JP2010219048 A2	20100930	JP20100056747	20100312
JP2010232174 A2	20101014	JP20100056721	20100312
JP5702073 B2	20150415	JP20100056747	20100312
KR101313350 B1	20131001	KR20100022533	20100312
KR20100103428 A	20100927	KR20100022532	20100312
KR20100103429 A	20100927	KR20100022533	20100312
TW201037884 A	20101016	TW20100107291	20100312
TW201106522 A	20110216	TW20100107292	20100312
TWI458169 B	20141021	TW20100107291	20100312
US2010233538 AA	20100916	US20100722269	20100311
US2010233546 AA	20100916	US20100722281	20100311
US8426061 BB	20130423	US20100722281	20100311
US9761867 BB	20170912	US20100722269	20100311

Priority:

US20090159722P 20090312 EP20090157136 20090401 EP20090157137 20090401
US20100722269 20100311 US20100722281 20100311

Probable Assignee: BELENOS CLEAN POWER HOLDING AG

Assignee(s): (std): FJELLVAG HELMER ; FOTEDAR RAHUL ; KUNDU DIPAN ; NESPER REINHARD ; WOERLE MICHAEL ; METTAN YOANN ; BELENOS CLEAN POWER HOLDING AG

Assignee(s): BELENOS CLEAN POWER HOLDING AGCH

Inventor(s): (std): DIPAN KUNDU ; FJELLVAG HELMER ; FOTEDAR RAHUL ; KUNDU DIPAN ; METTAN YOANN ; NESPER REINHARD ; NESPER REINHARD ; RAHUL FOTEDAR ; REINHARD NESPER ; WOERLE MICHAEL ; YOANN METTAN ; MICHAEL WOERLE ; HELMER FJELLVAG

Inventor(s): REINHARD NESPER

Agent(s): FREEHILLS PATENT AND TRADE MARK ATTORNEYS; FREEHILLS PATENT ATTORNEYS; FPA PATENT ATTORNEYS PTY LTD; HERBERT SMITH FREEHILLS; SPARING ROEHL HENSELER; SURMELY GERARD; GRIFFIN AND SZIPL PC; GRIFFIN AND SZIPL P C; OBLON MCCLELLAND MAIER AND NEUSTADT LLP

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

Title: ACTIVATION OF GRAPHENE BUFFER LAYERS ON SILICON CARBIDE BY ULTRA LOW TEMPERATURE OXIDATION

Abstract: A method of electrically activating a structure having one or more graphene layers formed on a silicon carbide layer includes subjecting the structure to an oxidation process so as to form a silicon oxide layer disposed between the silicon carbide layer and a bottommost of the one or more graphene layers, thereby electrically activating the bottommost graphene layer.

Classifications:

International (IPC 8-9): B32B19/04 C23C16/26 H01L21/02 H01L21/20 H01L21/306 H01L21/31 H01L21/316 H01L21/461 H01L27/12 H01L29/06 H01L29/16 H01L29/161 H01L29/66 H01L51/05 H01L51/30

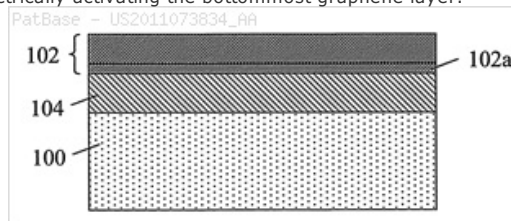
H01L51/40 (Advanced/Invention);

B32B19/04 H01L21/20 H01L21/306 (Core/Non-invention)

CPC: H01L29/16 H01L29/1606 H01L29/1608

European: H01L29/16

US: 257/77 257/9 257/9P 257/E21.09 257/E21.090S 257/E21.24 257/E21.240S 257/E29.168 257/E29.168S 438/479 438/479S 438/765 438/767 438/767S 438/770 438/931



Family:

Publication number	Publication date	Application number	Application date
■ CN102576724 A	20120711	CN201080042505	20100831
■ CN102576724 B	20151125	CN201080042505	20100831
■ DE112010003772 B4	20150528	DE201011003772T	20100831
■ DE112010003772 T5	20121004	DE201011003772T	20100831
■ GB201204308 A0	20120425	GB20120004308	20100831
■ GB2486116 A1	20120606	GB20120004308	20100831
■ GB2486116 B2	20130213	GB20120004308	20100831
■ JP2013504192 T2	20130204	JP20120527301T	20100831
■ JP5270800 B2	20130821	JP20120527301T	20100831
■ TW201120940 A	20110616	TW20100130615	20100910
■ TWI503866 B	20151011	TW20100130615	20100910
■ US2011073834 AA	20110331	US20090566870	20090925
■ US8242030 BB	20120814	US20090566870	20090925
■ WO11036037 A1	20110331	WO2010EP62723	20100831

Priority:

US20090566870 20090925 DE201011003772T 20100831 WO2010EP62723 20100831

Probable Assignee: GLOBALFOUNDRIES INC

Assignee(s): (std): HANNON JAMES B ; HANNON JAMES BOWLER ; IBM UK ; MCFEELY FENTON READ ; IBM ; OIDA SATOSHI ; YURKAS JOHN J ; MCFEELY FENTON R ; YURKAS JOHN JACOB

Assignee(s): IBM UNITED KINGDOM LTD ; INT BUSINESS MACHINES CORP ; GLOBALFOUNDRIES INC ; GLOBALFOUNDRIES US 2 LLC

Inventor(s): (std): BOWLER HANNON JAMES ; HANNON JAMES B ; HANNON JAMES BOWLER ; JACOB YURKAS JOHN ; MCFEELY FENTON R ; MCFEELY FENTON READ ; READ MCFEELY FENTON ; SATOSHI OIDA ; YURKAS JOHN J ; YURKAS JOHN JACOB ; OIDA SATOSHI

Inventor(s): JAMES BOWLER HANNON ; JOHN JACOB YURKAS ; FENTON READ MCFEELY

Agent(s): CANTOR COLBURN LLP; VAZKEN; GASCOYNE BELINDA

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: METHOD FOR ELECTROCHEMICALLY DEPOSITING CARBON FILM ON A SUBSTRATE

Abstract: Dense carbon films are deposited on a conductive substrate by placing the substrate acting as anode in a molten salt electrolyte bath containing a source of carbide ion and applying DC current across the substrate and a counter electrode acting as cathode also placed in the molten salt electrolyte bath. The carbide ions are electrochemically oxidized to deposit a carbon film on the surface of the substrate.

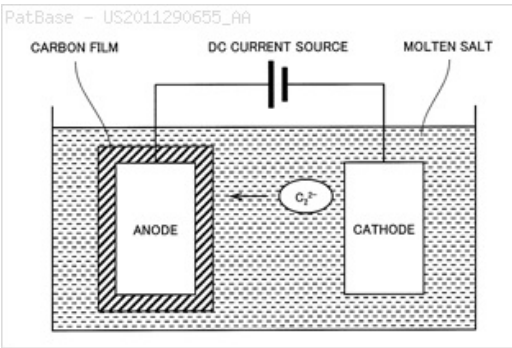
Classifications:

International (IPC 8-9): C25D3/66 C25D9/04 (Advanced/Invention)

CPC: C25D3/66 C25D9/04

European: C25D3/66 C25D9/04

US: 205/230 205/316



Family:

Publication number	Publication date	Application number	Application date
US2011290655 AA	20111201	US20100789848	20100528
US8951401 BB	20150210	US20100789848	20100528

Priority:

US20100789848 20100528

Probable Assignee: DOSHISHA

Assignee(s): (std): AMAHASHI HIROAKI ; DOSHISHA ; MSEP CO LTD I ; SEC CARBON LTD ; KURODA KOUJI ; ITO YASUHIKO ; NISHIKIORI TOKUJIRO ; TOYOTA BOSHOKU KK ; YASUDA NAOHIRO

Assignee(s): I MSEP CO ; I MSEP CO LTD ; I'MSEP CO LTD ; THE DOSHISHA ; SEC CARBON LIMITED ; TOYOTA BOSHOKU KABUSHIKI KAISHA

Inventor(s): (std): AMAHASHI HIROAKI ; ITO YASUHIKO ; KURODA KOUJI ; NISHIKIORI TOKUJIRO ; YASUDA NAOHIRO

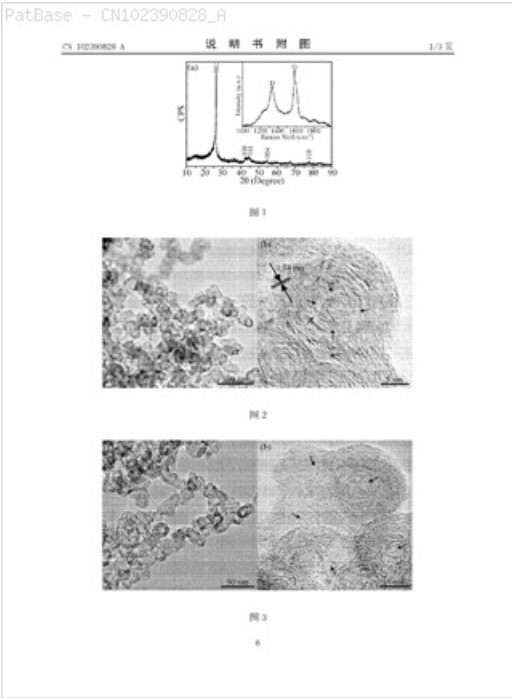
Agent(s): GREENBLUM AND BERNSTEIN PLC

Title: METHOD FOR PREPARING HIGHLY-GRAPHITIZED HOLLOW CARBON NANOCAPSULES BY USING LOW-TEMPERATURE REACTION

Abstract: The invention relates to a method for preparing highly-graphitized hollow carbon nanocapsules by using a low-temperature reaction. The method comprises the following steps of: reacting carbon carbide with aluminum chloride hexahydrate for 2-5h at 250-500 DEG C; or reacting the carbon carbide with cobalt chloride hexahydrate for 2-5h at 250-500 degrees centigrade to obtain solid nanocapsules; then mixing the solid nanocapsules with anhydrous aluminum chloride; and heating to 250-500 DEG C, preserving temperature and reacting for 4-5h. The method disclosed by the invention has the advantages of low reactiontemperature, short reaction time and low cost; and the prepared hollow nanocapsules have the advantages of uniform size, high graphitization degree, high purity and high yield.

Classifications:

International (IPC 8-9): B82Y40/00 C01B31/02 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
■ CN102390828 A	20120328	CN201110219856	20110803
■ CN102390828 B	20130619	CN201110219856	20110803

Priority:

CN201110219856 20110803

Probable Assignee: UNIV SHANDONG

Assignee(s): (std): SHANDONG UNIV ; UNIV SHANDONG

Assignee(s): SHANDONG UNIVERSITY

Inventor(s): (std): BAI YUJUN ; LIU RUI ; LUN NING ; NING LUN ; QI YONGXIN ; RUI LIU ; YONGXIN QI ; YUJUN BAI

Title: METHOD OF MAKING CARBIDE DERIVED CARBON WITH ENHANCED POROSITY AND HIGHER PURITY

Abstract: Purity (chemical composition) and porosity of carbons are important for most of their applications. There are several methods of making porous carbons. Carbide derived carbon represents a method of manufacturing carbon from metal carbides by thermochemical etching of metals and/or metalloids at elevated temperatures. This invention provides a method of manufacturing carbide derived carbon with higher purity. The produced carbons can be used in several applications where higher purity carbons are desired including but not limited to gas chromatography, liquid chromatography, supercapacitors, batteries, fuel cells, hemodiafiltration, enterosorbent, and toxin removal from biological fluids.

Classifications:

International (IPC 8-9): B01J20/30 C01B31/00

C01B31/02 (Advanced/Invention)

CPC: B01J20/20 B01J20/28071 B01J20/282 B01J20/3078 B01J20/3085 B01J20/28057 C01B32/36

US: 423/445.00RP 423/445R 502/418 502/418S

PatBase - US2012148473_AA

Patent Application Publication Jan. 14, 2012 Sheet 1 of 6 US 2012/0148473 A1

	Weight remain, %	Chemical composition, wt %					
		Carbon	Silicon	Chlorine	Titanium	Iron	Others
Sample 1	25.3	54.3756	0.00605	5.29531	0.24329	0.04785	0.04768
Sample 2	25.1	97.3627	0.00286	2.49651	0.00088	0.1082	0.04855
Sample 3	18.4	99.3022	0.00239	0.67128	0.00124	0.00637	0.01541

FIG. 1

Family:

Publication number	Publication date	Application number	Application date
US2012148473 AA	20120614	US20110316715	20111212

Priority:

US20100422880P 20101214 US20110316715 20111212

Probable Assignee: CARBON INC Y

Assignee(s): (std): CARBON INC Y ; KRAMARENKO OLEKSANDR

Assignee(s): Y CARBON INC

Inventor(s): (std): KRAMARENKO OLEKSANDR

Title: PRODUCTION OF ULTRA-HARD PARTICLES

Abstract: The production of an ultra-hard particle composed substantially of carbon as the dominant element is taught. The ultra-hard particle is the product of the reaction of a metal carbide selected from the group consisting of Al_4C_3 and Be_2C with a member selected from the group consisting of $CH_nXAY(4-n)-A$, $C_2H_nXA'Y(6-n')-A'$, $C_2H_nXA''Y(4-n'')-A''$ and X_2 wherein X and Y are different halogens selected from the group consisting of chlorine, bromine, iodine and fluorine, and wherein A is an integer from 0 to 4, A' is an integer from 0 to 6 and A'' is an integer from 0 to 4, and wherein n is an integer from 0 to 4, n' is an integer from 0 to 6 and n'' is an integer from 0 to 4, wherein A, A', A'', n, n' or n'' is the same integer in any particular member selected and wherein $n + A = 4$, $n' + A' = 6$ and $n'' + A'' = 4$.

Classifications:

International (IPC 8-9): C01B31/00 C01B31/02 C01B31/06 (Advanced/Invention);
C01B31/00 (Core/Invention)

International (IPC 1-7): C01B31/00 C01B31/06

CPC: C01B32/05

European: C01B31/02

Family:

Publication number	Publication date	Application number	Application date
EP0081487 A1	19830622	EP19810901985	19810622
EP0081487 A4	19840906	EP19810901985	19810622
JP58501430 T2	19830825	JP19810502412T	19810622
WO8300038 A1	19830106	WO1981US00866	19810622

Priority:

WO1981US00866 19810622

Probable Assignee: TDC TECHNOLOGY DEVELOPMENT CORP

Assignee(s): (std): FRENCH DOUGLAS A ; FRENCH FREDERIC A ; TDC TECHNOLOGY DEV CORP

Assignee(s): TDC TECHNOLOGY DEVELOPMENT CORP

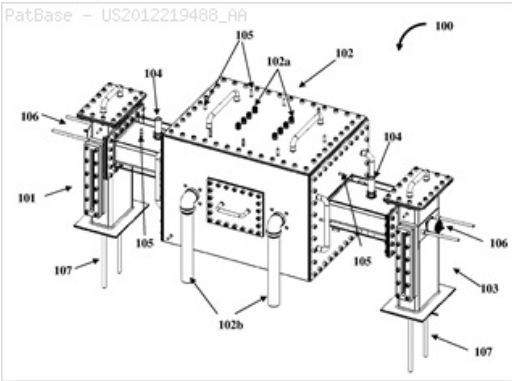
Inventor(s): (std): FRENCH DOUGLAS A ; FRENCH FREDERIC A

Designated states: DE FR GB JP

Title: CONTINUOUS MANUFACTURE OF CARBIDE DERIVED CARBONS

Abstract: A reactor apparatus for continuous manufacturing of porous carbon material by halogenation of carbides is provided. The reactor apparatus comprises a sample loading assembly, a reactor positioned within a metal housing and in closed circuit communication with the sample loading assembly, and a material receiving assembly. The sample loading assembly loads samples of carbides into the reactor. The metal housing maintains an inert atmosphere around the reactor. The reactor defines one or more process paths for transporting samples of carbides through a halogen atmosphere and/or a post-treatment atmosphere for yielding porous carbon material. Process vents, positioned on the reactor and the metal housing, pass inert gases and reactant gases past the samples of carbides at predetermined temperatures and exit process gases through a condenser unit. The condenser unit traps metal halide by-products. The material receiving assembly, in closed circuit communication with the reactor, removes and stores the porous carbon material.

Classifications:
International (IPC 8-9): B01J19/00 C01B31/02 (Advanced/Invention)
CPC: C01B32/00
European: C01B31/00
US: 422/149 422/149S 423/445.00RP 423/445R



Family:

Publication number	Publication date	Application number	Application date
■ US2012219488 AA	20120830	US20120371507	20120213

Priority:
US20110447191P 20110228 US20120371507 20120213

Probable Assignee: CARBON INC Y

Assignee(s): (std): CARBON INC Y ; DASH RANJAN

Assignee(s): Y CARBON INC

Inventor(s): (std): DASH RANJAN

Title: SYNTHETIC METHOD OF CARBIDE-DERIVED CARBON

Abstract: PROBLEM TO BE SOLVED: To synthesize carbide-derived carbon (CDC) in an environment-friendly mode under a mild condition. SOLUTION: The CDC is produced by etching selectively M and A elements in $Mn+1AX$ phase ($n=1, 2$ or 3), wherein M is a transition metal, A is a group A element, and X is carbon. A produced CDC has a turbostratic microstructure, or various kinds of barrel-shaped, ribbon-shaped, onion-shaped or bar-shaped forms. Since this process does not use chlorine gas, it is by far environment-friendly in comparison with a process depending on a conventional technology.

Classifications:

International (IPC 8-9): C01B31/02 (Advanced/Invention)

Family:

Publication number	Publication date	Application number	Application date
 JP2012166980 A2	20120906	JP20110029140	20110214

Priority:

JP20110029140 20110214

Probable Assignee: NAT INST FOR MATERIALS SCIENCE

Assignee(s): (std): NAT INST FOR MATERIALS SCIENCE

Assignee(s): NATIONAL INST FOR MATERIALS SCIENCE ; NATIONAL INSTITUTE FOR MATERIALS SCIENCE

Inventor(s): (std): GRASSO SALVATORE ; HU CHUNFENG ; MRINALINI MISHRA ; SAKKA YOSHIO ; TANAKA HIDEHIKO

Title: PROCESS FOR MANUFACTURING POROUS CARBON MATERIAL

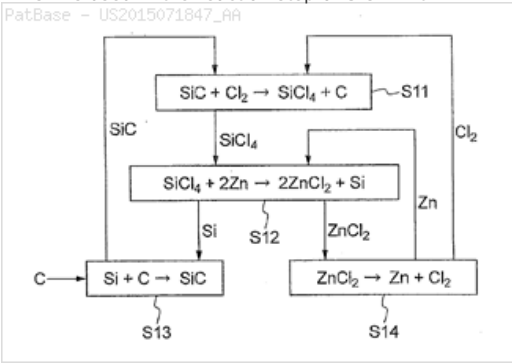
Abstract: This manufacturing process has: a step of performing a heating treatment in a contact state of SiC with Cl₂ to form a porous carbon material; a step of reacting SiCl₄ formed along with the porous carbon material in the foregoing step, with Zn to extract Si; and a step of reacting Si extracted in the foregoing step, with C to form SiC, and the process further has: a step of reducing ZnCl₂ formed by reaction of SiCl₄ with Zn, to extract Zn and Cl₂. These steps are repetitively carried out, SiC extracted by the step of forming SiC is used in the step of forming the porous carbon material, Cl₂ extracted by reduction of ZnCl₂ is used in the step of forming the porous carbon, and Zn extracted by reduction of ZnCl₂ is used in the reaction step of SiCl₄ with Zn.

Classifications:

International (IPC 8-9): C01B31/02 C01B31/10 (Advanced/Invention)

CPC: C01B31/10 C01B31/02 C01B32/05

US: 1/1 423/445R



Family:

Publication number	Publication date	Application number	Application date
CN104203816 A	20141210	CN201380018461	20130327
CN104203816 B	20160203	CN201380018461	20130327
JP2013150941 A1	20151217	JP20140509122T	20130327
JP6011614 B1	20161019	JP20140509122T	20130327
KR20150005913 A	20150115	KR20147027173	20130327
US2015071847 AA	20150312	US20130389992	20130327
US9266740 BB	20160223	US20130389992	20130327
WO13150941 A1	20131010	WO2013JP59064	20130327

Priority:

JP20120083915 20120402 WO2013JP59064 20130327

Probable Assignee: SUMITOMO ELECTRIC IND LTD

Assignee(s): (std): SUMITOMO ELECTRIC IND ; SUMITOMO ELECTRIC INDUSTRIES

Assignee(s): SUMITOMO ELECTRIC IND LTD

Inventor(s): (std): ISHIKAWA SHINJI ; MAJIMA MASATOSHI

Agent(s): MICHAEL A; VENABLE LLP; HASEGAWA YOSHIKI ET AL

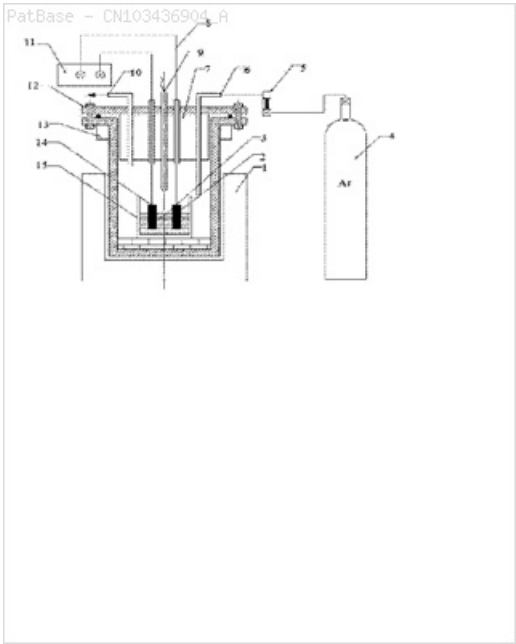
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY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

Title: METHOD FOR PREPARING CARBIDE DERIVED CARBON BY FUSED SALT ELECTROLYSIS METHOD

Abstract: The invention discloses a method for preparing carbide derived carbon by a fused salt electrolysis method. The method mainly comprises the steps that metal carbide serves as a raw material, and is subjected to die pressing sintering to form a metal carbide sheet to serve as an anode; by taking fused salt as an electrolyte, and a high-purity and high-density graphite rod as a cathode, fused salt electrolysis is performed in an electrolysis furnace in an argon atmosphere with the electrolysis temperature of 400-1300 DEG C, the electrolysis voltage of 1.8-3.2V, and the electrolysis time of 2-60h; after the electrolysis, an anode product is taken out, and subjected to water washing, ultrasonic-assisted pickling, water washing and drying treatment; and the carbide derived carbon is prepared. According to the method, the low-cost metal carbide can serve as the raw material for preparing the carbide derived carbon by the fused salt electrolysis method, so that a preparation technology is simplified; the cost is lowered; and the prepared carbide derived carbon serves as an electrode material of a supercapacitor, and has high specific capacity and good cycling stability.

Classifications:

International (IPC 8-9): C01B31/02 C01B32/05
C25B1/00 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
■ CN103436904 A	20131211	CN201310322535	20130729
■ CN103436904 B	20160504	CN201310322535	20130729

Priority:

CN201310322535 20130729

Probable Assignee: UNIV YANSHAN
Assignee(s): (std): UNIV YANSHAN ; YANSHAN UNIV
Inventor(s): (std): ZHANG LEI ; SHAO GUANGJIE ; QIN XIUJUAN

Title: POROUS CARBON AND METHOD OF PREPARING THE SAME

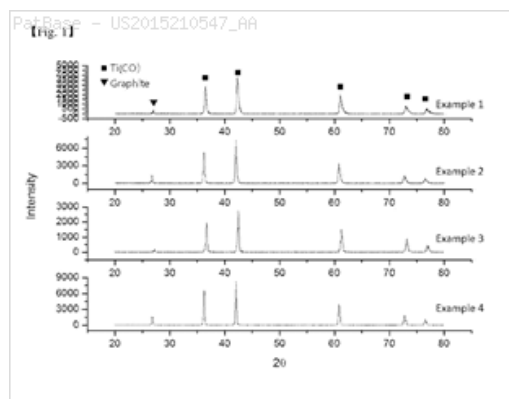
Abstract: This disclosure relates to porous carbon and a method of preparing the same. The porous carbon of the present invention is derived from a carbide compound having a composition comprising metal and oxide. The porous carbon of the present invention comprises both micropores and mesopores, and has large specific surface area, and thus, may be usefully used in various fields.

Classifications:

International (IPC 8-9): B01J35/10 B82B1/00 C01B31/00 C01B31/02 C01B31/08 C01B31/10 C01B32/05 C01B32/336 C01G1/00 C01G23/00 C01G41/00 (Advanced/Invention)

CPC: B01J35/10 C01B32/30 C01B32/336 C01G1/00 C01G23/00 C01G23/002 C01G41/006 C01P2002/72 C01P2006/12 C01P2006/14 C01P2006/16 C01B32/05

US: 423/445R 428/219



Family:

Publication number	Publication date	Application number	Application date
■ CN104507861 A	20150408	CN201380040057	20130724
■ EP2878576 A1	20150603	EP20130822559	20130724
■ EP2878576 A4	20160720	EP20130822559	20130724
■ JP2015526372 T2	20150910	JP20150524179T	20130724
■ JP6122113 B2	20170426	JP20150524179T	20130724
■ KR101442813 B1	20140923	KR20120082714	20120727
■ KR20140015985 A	20140207	KR20120082714	20120727
■ US2015210547 AA	20150730	US20130417279	20130724
■ US9919924 BB	20180320	US20130417279	20130724
■ WO14017834 A1	20140130	WO2013KR06638	20130724

Priority:

KR20120082714 20120727 WO2013KR06638 20130724

Probable Assignee: HANWHA CHEMICAL CORP

Assignee(s): (std): HANWHA CHEMICAL ; HANWHA CHEMICAL CORP ; INDUSTRIAL ACADEMIC COOPERATION GROUP SEOUL NATIONAL UNIV ; SNU R AND DB FOUND ; SNU R AND DB FOUNDATION

Inventor(s): (std): IHM JI SOON ; KANG SHIN HOO ; KIM DONG OK

Agent(s): ALT MICHAEL; LERNER DAVID LITTENBERG KRUMHOLZ AND MENTLIK LLP; YOU ME PATENT AND LAW FIRM

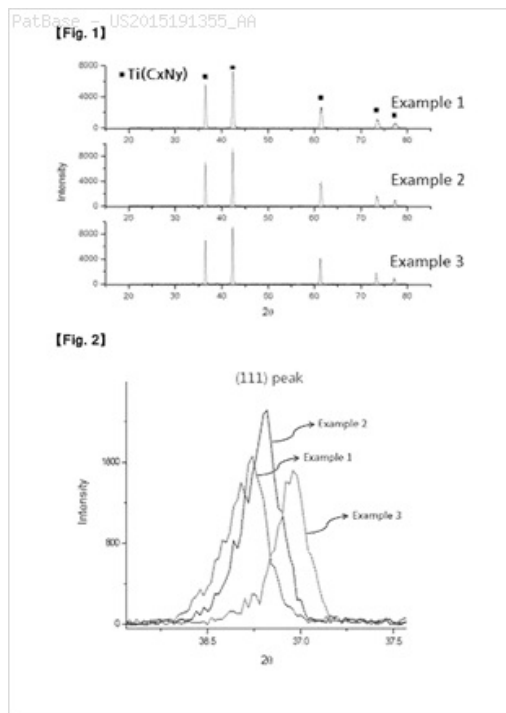
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KZ LA LC LI LK LR LS LT LU LV MA MC MD ME MG MK ML MN MR MT MW MX MY MZ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

Title: POROUS CARBON AND METHOD OF PREPARING THE SAME

Abstract: This disclosure relates to porous carbon and a method of preparing the same. The porous carbon of the present invention is derived from a carbonitride compound having a composition comprising metal and nitrogen. The porous carbon of the present invention comprises both micropores and mesopores, and has a large specific surface area, and thus, may be usefully used in various fields.

Classifications:

International (IPC 8-9): B01J21/18 B01J27/24 B01J35/10 B82B3/00 B82Y10/00 B82Y40/00 C01B31/00 C01B31/02 C01B31/08 C01B31/10 C01B32/05 C01B32/336 C01G23/00 (Advanced/Invention); B01J27/24 (Advanced/Non-invention)
CPC: C01P2006/12 C01P2006/16 B01J20/28066 B01J20/2808 B01J20/28083 B01J35/1057 B82B3/00 B82Y40/00 B01J21/18 B01J27/24 B01J35/1014 B01J35/1019 B01J35/1023 B01J35/1028 B01J35/1061 C01B31/02 C01B32/00 C01B32/30 C01B32/05 B82Y10/00
US: 1/1 423/445R 423/460



Family:

Publication number	Publication date	Application number	Application date
■ CN104507859 A	20150408	CN201380040048	20130724
■ EP2878575 A1	20150603	EP20130822140	20130724
■ EP2878575 A4	20160309	EP20130822140	20130724
■ JP2015526373 T2	20150910	JP20150524181T	20130724
■ JP6072248 B2	20170201	JP20150524181T	20130724
■ KR101412775 B1	20140702	KR20120082717	20120727
■ KR20140015987 A	20140207	KR20120082717	20120727
■ US2015191355 AA	20150709	US20130417311	20130724
■ US9428390 BB	20160830	US20130417311	20130724
■ WO14017836 A1	20140130	WO2013KR06640	20130724

Priority:

KR20120082717 20120727 WO2013KR06640 20130724

Probable Assignee: HANWHA CHEMICAL CORP

Assignee(s): (std): HANWHA CHEMICAL ; HANWHA CHEMICAL CORP ; INDUSTRIAL ACADEMIC COOPERATION GROUP SEOUL NATIONAL UNIV ; SNU R AND DB FOUND ; SNU R AND DB FOUNDATION

Inventor(s): (std): IHM JI SOON ; KANG SHIN HOO ; KIM DONG OK ; SEO MOON SU

Agent(s): ALT MICHAEL; LERNER DAVID LITTENBERG KRUMHOLZ AND MENTLIK LLP; YOU ME PATENT AND LAW FIRM

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 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

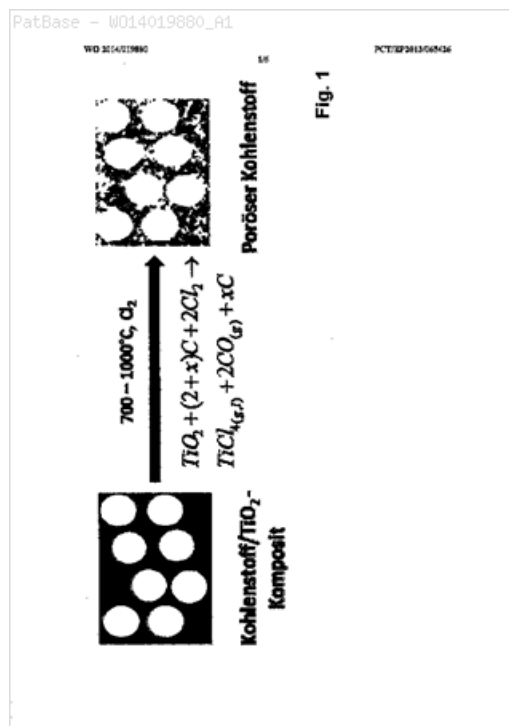
Title: PROCESS FOR PRODUCING POROUS CARBON

Abstract: The invention provides a process for producing porous carbon by embedding inorganic nanoparticles into a carbon-containing matrix and then reacting them with a halogen gas. By virtue of the size of the nanoparticles used, the process according to the invention advantageously enables precise control of the pore size and the pore size distribution of the resulting carbon materials. The porous carbon produced by the process advantageously contains micropores and preferably mesopores of defined size, and finds use in chemistry, medicine and electrical engineering, and is especially suitable as an adsorbent, filtration material and electrode material, for example in lithium batteries.

Classifications:

International (IPC 8-9): B01J20/20 B01J21/18 C01B31/00 C01B31/10 H01M4/1393 H01M4/96 (Advanced/Invention)

CPC: C01P2004/03 C01P2004/04 C01P2004/61 C01P2004/64 C01P2006/12 C01P2006/14 C01P2006/16 C04B2235/3217 C04B2235/3232 C04B2235/3418 C04B2235/5409 C04B2235/5454 C04B2235/549 C04B38/0032 C04B2111/00793 C04B2111/0081 C04B2111/00853 H01M4/587 B82Y30/00 B01J20/06 B01J20/08 B01J20/103 B01J20/20 B01J20/28007 B01J20/28026 B01J20/28066 B01J20/28076 B01J20/28078 B01J20/3078 B01J20/3085 C01B32/00 C04B35/524

**Family:**

Publication number	Publication date	Application number	Application date
DE102012213595 A1	20140515	DE201210213595	20120801
EP2879991 A1	20150610	EP20130741716	20130722
WO14019880 A1	20140206	WO2013EP65426	20130722

Priority:

DE201210213595 20120801 WO2013EP65426 20130722

Probable Assignee: TECH UNIV DRESDEN

Assignee(s): (std): TECH UNIV DRESDEN ; UNIV DRESDEN TECH

Assignee(s): TECHNISCHE UNIV DRESDEN

Inventor(s): (std): OSCHATZ MARTIN ; KASKEL STEFAN ; BORCHARDT LARS

Agent(s): KAILUWEIT AND UHLEMANN PATENTANWAELTE PARTNERSCHAFT MBB; KAILUWEIT AND UHLEMANN PATENTANWAELTE

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

Title: CARBON LAYER DERIVED FROM CARBIDE CERAMICS AND PREPARATION METHOD THEREOF

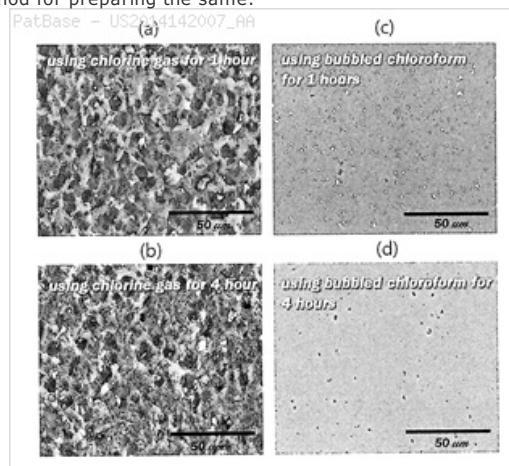
Abstract: Provided is a carbon layer derived from carbide ceramics, wherein metal or non-metal atoms are extracted selectively from the surface of carbide ceramics to form voids, which, in turn, are filled with carbon synthesized by a carbon compound, thereby providing improved roughness and hardness, as well as to a method for preparing the same.

Classifications:

International (IPC 8-9): B23B9/00 C01B31/00 C01B31/02 C04B35/52 C04B41/81 C10M103/02 C10M125/08 C23C16/26 C23C16/44 (Advanced/Invention)

CPC: Y10T428/30 C10M103/02 C04B35/521 C04B2235/3826 C04B2235/963 C10M2201/0613 C10N2230/06 C10N2250/08 C10N2270/00 C10N2280/00 Y10T428/24355

US: 423/291 423/345 423/439 423/440 423/445R 428/141 508/129



Family:

Publication number	Publication date	Application number	Application date
KR20140064389 A	20140528	KR20120131680	20121120
US2014142007 AA	20140522	US20130083511	20131119
US9957456 BB	20180501	US20130083511	20131119

Priority:

KR20120131680 20121120

Probable Assignee: KSM CO LTD

Assignee(s): (std): KSM CO LTD ; UNIV KOREA RES AND BUS FOUND

Assignee(s): KOREA UNIV RESEARCH AND BUSINESS FOUNDATION ; KOREA UNIVERSITY RESEARCH AND BUSINESS FOUNDATION ; KSM CO

Inventor(s): (std): JEONG MIN GUN ; LIM DAE SOON ; YOON SEO HYUN

Agent(s): ALSTON AND BIRD LLP

Title: CARBIDE CERAMICS DERIVED CARBON LAYER AND PREPARATION METHOD THEREOF

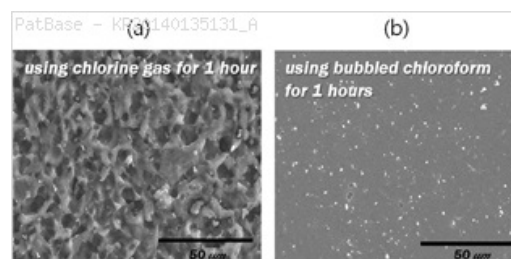
Abstract: The present invention relates to a carbon layer derived from a carbide ceramic and a method of manufacturing the same. The carbon layer derived from a carbide ceramic and a method of manufacturing the same according to the present invention can improve hardness and surface roughness of the carbon layer. In addition, the carbon layer may have a surface with a lowered coefficient of friction. Further, an abrasion rate is reduced so the carbon layer, which improves durability, can be provided. Also, the roughness of the surface is improved so the carbon layer having a smooth surface can be provided. Therefore, when the carbon layer prepared by using the carbon layer derived from a carbide ceramic and a method of manufacturing the same according to the present invention are applied to a component such as machines, etc., the improvement in the harness, the reduction in the coefficient of friction and the reduction in the abrasion rate at a contact part, etc. are possible thus contributing to the overall improvement in a life span or durability of the corresponding machine. By the carbon layer of the present invention, remarkable development in an industry sector in which a carbide ceramic is applied such as the aerospace industry or the fuel cell industry can be expected.

Classifications:

International (IPC 8-9): C04B41/81 C23C16/26

C23C16/44 (Advanced/Invention)

CPC: C23C16/26 C04B41/81 C23C16/44 H01L21/205



Family:

Publication number	Publication date	Application number	Application date
■ KR101472313 B1	20141215	KR20140132689	20141001
■ KR20140135131 A	20141125	KR20140132689	20141001

Priority:

KR20140132689 20141001

Probable Assignee: UNIV KOREA RES AND BUS FOUND

Assignee(s): (std): UNIV KOREA RES AND BUS FOUND

Assignee(s): KOREA UNIV RESEARCH AND BUSINESS FOUNDATION ; KOREA UNIVERSITY RESEARCH AND BUSINESS FOUNDATION

Inventor(s): (std): JEONG MIN GUN ; LIM DAE SOON ; YOON SEO HYUN

Title: VERFAHREN ZUR HERSTELLUNG VON HOCHDRUCKMODIFIKATIONEN DES KOHLENSTOFFS

Classifications:

International (IPC 8-9): B01J3/00 (Advanced/Invention);

B01J3/00 (Core/Invention)

International (IPC 1-7): B01J3/00

Family:

Publication number	Publication date	Application number	Application date
 DD259147 A1	19880817	DD19820245794	19821207

Priority:

DD19820245794 19821207

Probable Assignee: AKAD WISSENSCHAFTEN DDR

Assignee(s): (std): AKAD WISSENSCHAFTEN DDR

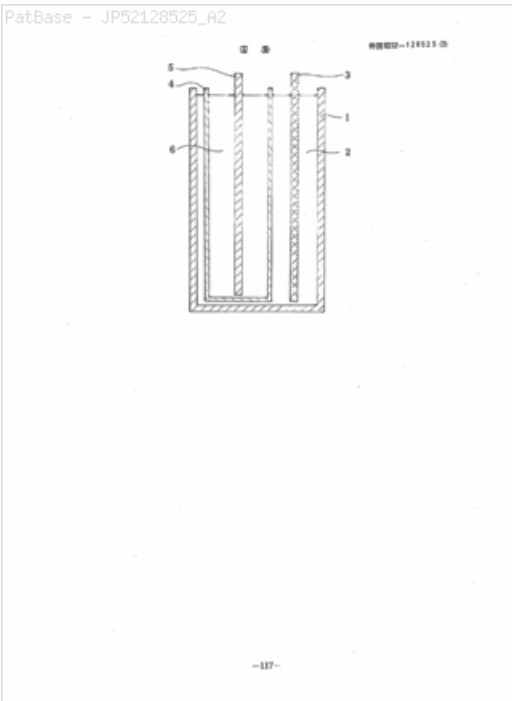
Assignee(s): AKADEMIE DER WISSENSCHAFTEN DER DDR DD

Inventor(s): (std): WOLF ERICH ; RISSE GUENTER ; OPPERMANN HEINRICH ; HENNIG HEINZ ; GROSSE GERALD ; GERLACH UDO

Inventor(s): WOLF ERICH DD ; RISSE GUENTER DD ; OPPERMANN HEINRICH DD ; HENNIG HEINZ DD ; GROSSE GERALD DD ; GERLACH UDO DD

Title: IODINE ALKALINE BATTERY

Classifications:
International (IPC 8-9): H01M6/04 H01M6/24 (Advanced/Invention);
H01M6/04 H01M6/24 (Core/Invention)
International (IPC 1-7): H01M6/04
CPC: Y02E60/12
European: Y02E60/12



Family:

Publication number	Publication date	Application number	Application date
JP52128525 A2	19771028	JP19760044431	19760421

Priority:
JP19760044431 19760421

Probable Assignee: HAYAMIZU KEIZOU
Assignee(s): (std): HAYAMIZU KEIZOU
Inventor(s): (std): HAYAMIZU KEIZOU

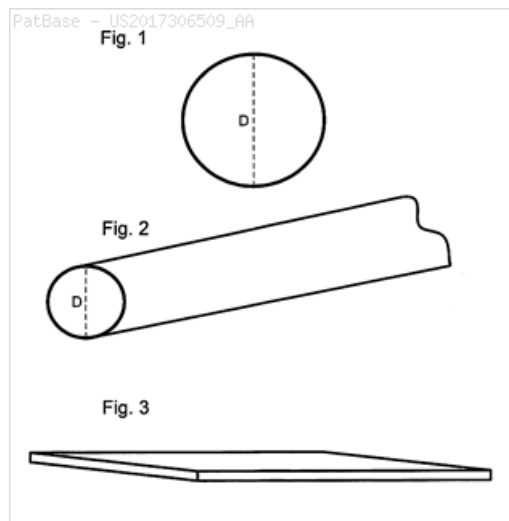
Title: METHODS, APPARATUSES, AND ELECTRODES FOR CARBIDE-TO-CARBON CONVERSION WITH NANOSTRUCTURED CARBIDE CHEMICAL COMPOUNDS

Abstract: Nanostructured carbide chemical compound is used to convert carbide to carbon. A method comprising: providing at least one carbide chemical compound and reducing a metal cation with use of the carbide chemical compound to form elemental carbon, wherein the carbide chemical compound is nanostructured. The nanostructured carbide chemical compound can be in the form of a nanoparticle, a nanowire, a nanotube, a nanofilm, a nanoline. The reactant can be a metal salt. Electrochemical reaction, or reaction in the melt or in solution, can be used to form the carbon. The nanostructured carbide chemical compound can be an electrode.

Classifications:

International (IPC 8-9): B82Y30/00 B82Y40/00 C01B32/15 C25B1/00 C25B11/02 C25B11/04 C25B11/12 (Advanced/Invention)

CPC: C25B1/00 C01B31/0446 C01B32/942 C25B11/04 C25B11/0415 C01B31/06 C01B32/05 C01B32/914 C01P2004/20 C01P2004/64 C01P2006/40



Family:

Publication number	Publication date	Application number	Application date
TW201806854 A	20180301	TW20170113077	20170419
US2017306509 AA	20171026	US20170491715	20170419
WO17184760 A2	20171026	WO2017US28405	20170419
WO17184760 A3	20180104	WO2017US28405	20170419

Priority:

US20160325281P 20160420 US20170491715 20170419

Probable Assignee: WEST VIRGINIA UNIV RESEARCH CORP

Assignee(s): (std): WEST VIRGINIA UNIV RES CORP ; WEST VIRGINIA UNIV RESEARCH CORP

Assignee(s): CL WV HOLDINGS LLC

Inventor(s): (std): RUTT J STEVEN

Agent(s): RUTT J STEVEN 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 KH 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

Title: Process for reducing metal halides by reaction with calcium carbide

Abstract: A metal halide is reduced by reacting it with calcium carbide in a bath in which the calcium carbide is dissolved in a mixture of a halide of at least one alkali metal, specifically sodium, potassium, rubidium and/or cesium, with a halide of at least one alkaline-earth metal, specifically calcium, strontium and/or barium. The desired metal may be one of the aforementioned alkali or alkaline-earth metals, e.g. sodium or magnesium, in which case its halide is one of the constituents of the mixture. Otherwise, a vapor of a halide of the desired metal (e.g. titanium tetrachloride) is bubbled through the bath in order to react with the calcium carbide.

Classifications:

International (IPC 8-9): C21B15/00 C21B15/02 C22B26/00 C22B26/10 C22B26/20 C22B26/22 C22B34/12 C22B34/14 C22B34/20 C22B34/22 C22B34/36 C22B5/02 C22B5/04 C22B5/06 C22B9/10

F27B17/00 (Advanced/Invention);

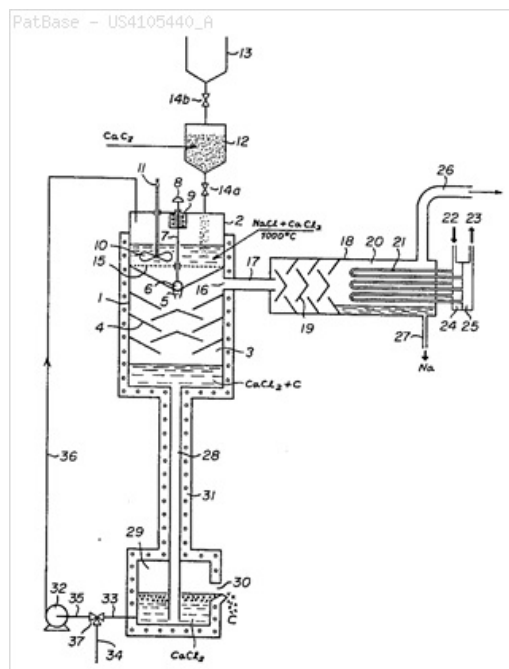
C21B15/00 C22B26/00 C22B34/00 C22B5/00 F27B17/00 (Core/Invention)

International (IPC 1-7): C01B31/00 C01B31/04 C21B15/00 C22B15/00 C22B26/00 C22B26/10 C22B26/20 C22B27/00 C22B29/00 C22B34/00 C22B45/00 C22B5/00 C22B5/02 C22B5/06 C22B5/16 F27B17/00

CPC: C22B5/04 C22B9/106 C22B26/00 C22B34/1281 C22B5/06 Y02P10/212

European: C22B5/04 C22B5/06

US: 75/589



Family:

Publication number	Publication date	Application number	Application date
AU197019604 A1	19710708	AU19700019604	19700904
AU207019604 A1	19710708	AU19700019604	19700904
BE755764 A	19710304		00000000
BE755764 A1	19710304		19700904
CH513981 A	19711015	CH19690013482	19690905
CH528595 A	19720930	CH19700011907	19700807
DE2044402 A1	19710318	DE19702044402	19700902
DE2044402 B2	19780223	DE19702044402	19700902
DE2044402 C3	19781019	DE19702044402	19700902
FR2060987 A5	19710618	FR19700032273	19700904
GB1326933 A	19730815	GB19700042585	19700904
JP51000531 B4	19760108	JP19700077182	19700904
JP53015804 B4	19780527	JP19740122357	19741023
NO130689 B	19741014	NO19700003359	19700902
NO130689 C	19750122	NO19700003359	19700902
US4105440 A	19780808	US19740429704	19740102

Priority:

CH19690013482 19690905 CH19700011907 19700807 US19700069719 19700904

Probable Assignee: BATTELLE MEMORIAL INSTITUTE

Assignee(s): (std): BATTELLE MEMORIAL INST ; BATTELLE MEMORIAL INSTITUTE

Assignee(s): BATTELLE MEMORIAL INSTIT ; BATTELLE MEMORIAL INSTITUTE 7 ROUTE DE BRIZE CAROU ; BATTELLE MEMORIAL INSTITUTE CAROUGE GENF SCHWEIZ ; BATTELLE MEMORIAL INSTITUTE 7 ROUTE DE BRIZE CAROUGE GENEVE SUISSE ; BATTELLE MEMORIAL INST 7 ROUTE DE BRIZE CAROUGE GENEVE SUISSE ; BATTELLE MEMORIAL INST CAROUGE GENF SCHWEIZ ; BATTELLE MEMORIAL INST CH

Inventor(s): (std): GERARD BIENVENU ; CLAUDE GENTAZ ; GENTAZ CLAUDE ; BIENVENU GERARD ; GENTAZ C ; BIENVENU G

Inventor(s): BIENVENU G FR ; GERARD BIENVENU AND CLAUDE GENTAZ ; GENTAZ CLAUDE GRAND LANCY GENF SCHWEIZ ; BIENVENU GERARD ANNEMASSE FRANKREICH ; GENTAZ C CH

Title: PRODUCTION OF ULTRA-HARD PARTICLES

Abstract: The production of an ultra-hard particle composed substantially of carbon as the dominant element is taught. The ultra-hard particle is the product of the reaction of a metal carbide selected from the group consisting of Al_4C_3 and Be_2C with a member selected from the group consisting of $CH_nXAY(4-n)-A'$, $C_2H_nXA'Y(6-n')-A'$, $C_2H_nXA''Y(4-n'')-A''$ and X_2 wherein X and Y are different halogens selected from the group consisting of chlorine, bromine, iodine and fluorine, and wherein A is an integer from 0 to 4, A' is an integer from 0 to 6 and A'' is an integer from 0 to 4, and wherein n is an integer from 0 to 4, n' is an integer from 0 to 6 and n'' is an integer from 0 to 4, wherein A, A', A'', n, n' or n'' is the same integer in any particular member selected and wherein $n+A=4$, $n'+A'=6$ and $n''+A''=4$.

Classifications:

International (IPC 8-9): C01B31/02 (Advanced/Invention);

C01B31/00 (Core/Invention)

International (IPC 1-7): C01B31/00

CPC: C01B32/05

European: C01B31/02

US: 423/445 423/445R 423/446 423/466 423/491 423/493 423/496 423/497 423/499.4 423/505 51/307

Family:

Publication number	Publication date	Application number	Application date
■ US4275050 A	19810623	US19790092485	19791108
■ US4352787 A	19821005	US19810275655	19810622

Priority:

US19790092485 19791108 US19810275655 19810622

Probable Assignee: TDC TECHNOLOGY DEV CORP

Assignee(s): (std): TDC TECHNOLOGY DEV CORP

Assignee(s): TDC TECHNOLOGY DEVELOPMENT CORP

Inventor(s): (std): FRENCH FREDERIC A ; FRENCH DOUGLAS A