

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO	
RAD: 14-185631- -5	FECHA: 2015-12-17 15:05:02
DEP: 2020 DIRECCION DE NUEVAS CREACIONES	EVE: 1 REGISTRO/DEPOSITO/CONCESION/DEPOSITO
TRA: 2 PATENTES DE INVENCION	FOLIOS: 4
ACT: 519 TRASLADOINFORME	

DIRECCIÓN DE NUEVAS CREACIONES

2020
Bogotá, D.C.,

Abogado(a)/Señor(a)
FELIPE EDUARDO FIGUEROA CARDOZO

Asunto: Radicación: 14-185631- -5
Trámite: 2
Evento: 1
Actuación: 519
Oficio: 15302
Folios: 4

Patente de Invención	X			Patente de Modelo de Utilidad	
Vía Nacional	X				
Vía PCT (Fase Nacional)		Capítulo I		Capítulo II	
No. Solicitud Internacional					
Fecha de Presentación Internacional					

Como resultado del examen de fondo realizado, con fundamento en el Artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se comunica:

1. Documentos estudiados

Descripción:	Rad. N° 14-185631-00000-0000	25/agosto/2014
Reivindicaciones:	Rad. N° 14-185631-00000-0000	25/agosto/2014
Dibujos:	Rad. N° 14-185631-00000-0000	25/agosto/2014

2. Objeto de la invención

De acuerdo con lo establecido en el numeral 1.2.2.2 del Capítulo Primero del Título X de la Circular Única para efectos del examen de patentabilidad, se tendrá en cuenta la tasa pagada por el solicitante al momento de comenzar el examen para las reivindicaciones adicionales; esto es que cuando la solicitud contenga más de diez (10) reivindicaciones y no se haya pagado la tasa complementaria, sólo se estudiarán las cubiertas por la tasa pagada. Por lo tanto, se estudiaran las reivindicaciones 1 a 5.

Título de la solicitud: “Dispositivo para depósito en ángulo oblicuo de materiales a escala nano y micrométrica mediante técnicas PVD” (Pág. 1 del radicado 14-185631-00000-0000).

El problema planteado en esta solicitud consiste en la necesidad de diseñar un dispositivo para recubrimientos superficiales en forma de películas delgadas que permita variar el ángulo de aporte del material depositado.

Para resolver este problema técnico, la solicitud en estudio proporciona un dispositivo para controlar el ángulo de crecimiento de un material aportante evaporado sobre la superficie de un sustrato sin necesidad de emplear una máquina que funcione a partir de servo-motores, con el objetivo de depositar materiales en forma de película delgada a un determinado ángulo oblicuo en procesos de recubrimiento de superficies tales como el PVD.

El objeto de la presente solicitud se relaciona con la Clasificación Internacional de Patentes (CIP): C 23 C 14/56.

3. De la solicitud de patente

Reivindicaciones (Art 30 D 486, Art 22 PCT)

El capítulo reivindicatorio no es claro porque:

- En la reivindicación 4 se reconoce un resultado a alcanzar donde menciona “...*las probetas de laboratorio (7) son los sustratos al cual se varían el ángulo a oblicuo para depositar el recubrimiento de PVD*” puesto que la reivindicación incluiría no sólo la solución propuesta por el solicitante, sino todas las alternativas presentes o futuras que lleguen a ese resultado. Se sugiere reemplazarlo por las características esenciales, estructurales o funcionales, que contribuyen a la obtención de ese efecto.
- En la reivindicación 1 se menciona una “*planta semi-industrial (6) Magnetrón Sputtering Intercovamex V4*”, lo cual no es permitido, ya que hace referencia a una marca y/o a un dispositivo ya conocido en el estado de la técnica. Se sugiere eliminar dicha referencia.
- se reconoce una falta de concisión entre las reivindicaciones 1 y 3 donde mencionan: “...*con un engranaje conducido de geometría especial (1.6)*”. puesto que busca proteger la misma materia. Se sugiere hacer la corrección necesaria.
- La materia objeto de la reivindicación 4 no hace parte de las características técnicas que diferencien la invención del estado de la técnica y se considera como un elemento ajeno a la invención. Se sugiere caracterizar la invención por sus componentes técnicos estructurales.
- Las expresiones “*acoplado*” en las reivindicaciones 1, “*geometría especial*” en la reivindicación 3; “*diámetro mayor*”, “*diámetro menor*” en la reivindicación 1; “*varían el ángulo α oblicuo*”, “*extremo alargado delgado*”, “*extremo cuadrado ancho*” en la reivindicación 1, sugieren de forma imprecisa que la protección se extiende a otras posibles variaciones o modificaciones, por lo tanto, no son claras ya que no definen la materia a proteger. Se sugiere sustituir dichas expresiones por términos concretos.

Descripción (Art 28 D 486)

- El componente (2.1) no se encuentra en las figuras allegadas. Se sugiere allegar una figura en explosivo que permita visualizar todas y cada una de las partes de la invención.
- Las figuras de la solicitud no ayudan a mejorar la comprensión de la solicitud, se le solicita que en éstas vayan todos los elementos constitutivos debidamente enumerados, de tal manera que dicha numeración no se repita, sin ningún tipo de cotas, lecturas explicativas o escalas y cada figura debe estar descrita completamente en el capítulo descriptivo. También se sugiere mejorar la calidad visual de las figuras debido al tamaño de las mismas y de la letra de los elementos que lo componen.

Específicamente las figuras 4, 20 y 21 manejan una escala de grises la cual no permite distinguir cada uno de los componentes en ellas presentes. Adicionalmente se allegan figuras del estado de la técnica que crean confusión con la materia que se busca proteger en las reivindicaciones. Por lo tanto se le sugiere hacer las correcciones respectivas.

4. Determinación del Estado de la Técnica

El estado de la técnica se determinó con base en la fecha de presentación de la solicitud de patente nacional: agosto 25 de 2014, y consultadas la bases de datos a las cuales tiene acceso esta oficina no se encontró documento alguno que anticipe el carácter de la invención.

5. Conclusión

Los requisitos de patentabilidad de la actual reivindicación independiente 1, al igual que sus reivindicaciones dependientes, no se encuentran afectadas. Sin embargo, se requiere que la sociedad solicitante haga las correcciones o aclaraciones necesarias a las objeciones realizadas en el numeral 4 del presente requerimiento para continuar su trámite.

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta (60) días contados a partir del día siguiente de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Se invita al solicitante se sirva indicar, si así lo considera, su renuncia al término faltante de sesenta (60) días para dar respuesta a este requerimiento y presentarla por escrito.

Finalmente, se le recuerda al solicitante que si como respuesta a este requerimiento llegara a modificar el capítulo reivindicatorio y éste contenga más de diez (10) reivindicaciones, no pagará la tasa de modificación voluntaria pero sí la correspondiente al pago por reivindicación adicional.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única No. 10 de 2001.



JOSÉ LUIS SALAZAR LÓPEZ
Director de Nuevas Creaciones (c)

El anterior requerimiento fue notificado por fijación en lista, de fecha 2015-12-22

Elaboró: Harold Sneyder Vega Russi
Revisó: Rosa Patricia Tellez Chavarro

Search history

Search 1: PN=(US6045667 OR US6238533 OR US6485616 OR US6488824 OR US7226643 OR US8597797 OR CN103590003 OR EP2355126 OR EP2548992) (Results 9)
Search 2: device and Vapor Phase Deposition (Results 633)
Search 3: 1 and 2 (Results 0)
Search 4: device of tube and device and Vapor Phase Deposition (Results 0)
Search 5: device and tube and device and Vapor Phase (Results 979)
Search 6: 2 and 5 (Results 44)
Search 7: Vapor deposition apparatus (Results 3133)
Search 8: 5 and 7 (Results 12)
Search 9: Vapor deposition apparatus and oblique angle micrometer scale materials (Results 0)
Search 10: Vapor deposition apparatus and oblique angle (Results 3)
Search 11: 1 or 10 (Results 12)
Search 12: Rotary drum and Vapor Phase Deposition (Results 1)
Search 13: device and Rotary drum and Vapor Phase Deposition (Results 0)
Search 14: apparatus and Rotary drum and Vapor Phase Deposition (Results 0)
Search 15: VAPOR DEPOSITION PROCESS AND APPARATUS (Results 1061)
Search 16: 7 and 15 (Results 172)
Search 17: vapor deposition process and apparatus and oblique angle (Results 1)

Title: Rotary drum

Abstract: Source: US4595177A A rotary drum comprises a hollow cylindrical outer member, a coaxial hub, and a plurality of spokes pivotally connected to the outer member and to the hub, all the spokes being aligned at the same **oblique angle** to the radius at the respective connections to the hub. Thermal expansion of the outer member relative to the spokes is accommodated by rotation of the outer member relative to the hub and a consequent change in the **oblique angle**, so minimizing thermally induced stresses in the spokes. The drum may be used in the production of a metal by deposition from the vapor phase onto the outer surface of the drum.

Classifications:

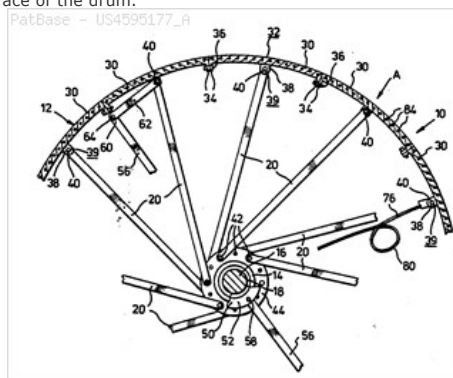
International (IPC 8-9): C23C14/22 C23C14/50 C23C14/54 (Advanced/Invention); C23C14/22 C23C14/50 C23C14/54 (Core/Invention)

International (IPC 1-7): B22D11/00 C22C1/00 C23C14/22 C23C14/50 C23C14/54 C23C16/06 F16C13/00

CPC: C23C14/505 C23C14/541

European: C23C14/50B C23C14/54B

US: 118/665 118/724 118/725 118/730 164/423 164/46 266/248 427/10 427/250 427/9 432/251



Family:

Publication number	Publication date	Application number	Application date
CA1238819 A1	19880705	CA19840465283	19841012
DE3475818 D1	19890202	DE19843475818	19841015
EP0138608 A2	19850424	EP19840307051	19841015
EP0138608 A3	19860319	EP19840307051	19841015
EP0138608 B1	19881228	EP19840307051	19841015
GB2147973 A1	19850522	GB19840025270	19841005
GB2147973 B2	19860618	GB19840025270	19841005
GB8327444 A0	19831116	GB19830027444	19831013
GB8328858 A0	19831130	GB19830028858	19831028
GB8425270 A0	19841114	GB19840025270	19841005
JP60106963 A2	19850612	JP19840215054	19841013
US4595177 A	19860617	US19840658707	19841009
US4620984 A	19861104	US19840658705	19841009

Priority:

GB19830027444 19831013 GB19830028858 19831028 CA19840465283 19841012

Probable Assignee: UNITED KINGDOM ATOMIC ENERGY AUTHORITY

Assignee(s): (std): ATOMIC ENERGY AUTHORITY UK

Assignee(s): DONE KENNETH CW ; HODDINOTT DUDLEY S ; UK ATOMIC ENERGY AUTHORITY ; UNITED KINGDOM ATOMIC ENERGY AUTHORITY

Inventor(s): (std): DONE KENNETH C W ; DONE KENNETH CHARLES WILLIAM ; HODDINOTT DR DUDLEY STUART ; HODDINOTT DUDLEY S ; HODDINOTT DUDLEY STUART ; KENISU CHIYAARUZU UIIRIAMU DOON ; DATSUDORII SUCHIYUAATO HODEINO

Inventor(s): DATSUDORII SUCHIYUAATO HODEINOTSUTO ; KENNETH CHARLES WILLIAM DONE ; DONE KENNETH CW ; DR DUDLEY STUART HODDINOTT

Designated states: CH DE FR IT LI SE

Title: APPARATUS FOR FILLING APERTURES IN A FILM LAYER ON A SEMICONDUCTOR STRUCTURE

Abstract: Source: US2002089027A The present invention pertains to a carrier layer and a contact enabled by the carrier layer which enables the fabrication of aluminum (including aluminum alloys and other conductive materials having a similar melting point) electrical contacts in multilayer integrated circuit vias, through holes, or trenches having an aspect ratio greater than one. In fact, the structure has been shown to enable such contact fabrication in vias, through holes, and trenches having aspect ratios as high as at least 5:1, and should be capable of filling apertures having aspect ratios up to about 12:1. The carrier layer, in addition to permitting the formation of a conductive contact at high aspect ratio, provides a diffusion barrier which prevents the aluminum from migrating into surrounding substrate material which operates in conjunction with the electrical contact. The carrier layer preferably comprises a layer formed by ionizing the flux of sputter deposition material, partially reacting the flux with a gas, and depositing the resulting material on a substrate.

Classifications:

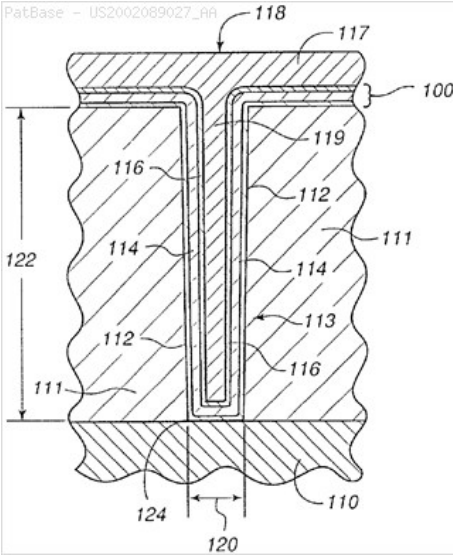
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International (IPC 1-7): C23C14/06 C23C14/14 C23C14/32 C23C14/34 C23C14/35 C23C14/56 C23C16/00 C23C16/44 H01J37/34 H01J37/32 H01L21/203 H01L21/283 H01L21/285 H01L21/3105 H01L21/3205 H01L21/4763 H01L21/60 H01L21/76 H01L21/768 H01L23/48 H01L23/485 H01L23/52 H01L23/532 H01L27/095 H01L27/95 H01L29/40

CP: H01L2924/0002 H01L21/2855 H01L21/76841 C23C14/0036 C23C14/046 C23C14/0641 C23C14/14 C23C14/32 C23C14/345 C23C14/35 C23C14/358 C23C14/568 H01J37/321 H01J37/34 H01J23/32 H01L21/76843 H01L21/76855 H01L21/76876 H01L21/76882 H01L23/53233 H01L21/76846 H01L21/28518 H01L21/76877 H01L23/485 H01L23/5226 H01L23/53223 H01L23/53238

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US: 118/719 118/726 204/192.12 204/192.15 204/192.17 204/192.170S 204/298.06 204/298.060S 204/298.08 204/298.25 257/471 257/471P 257/734 257/734S 257/750 257/751 257/754 257/758 257/763 257/764 257/767 257/768 257/770 257/773 257/774 257/E21.165 257/E21.165S 257/E21.169 257/E21.584 257/E21.585 257/E21.585S 257/E21.588 257/E21.588S 257/E23.019 257/E23.019S 257/E23.145 257/E23.145S 257/E23.16 257/E23.160S 438/627 438/643 438/648 438/649 438/653 438/654 438/655 438/656 438/660 438/661 438/675 438/685 438/687 438/688



Family:

Publication number	Publication date	Application number	Application date
EP0758148 A2	19970212	EP19960305722	19960802
EP0758148 A3	19990818	EP19960305722	19960802
EP0799903 A2	19971008	EP19960305733	19960802
EP0799903 A3	19991117	EP19960305733	19960802
EP0818817 A2	19980114	EP19970304944	19970707
EP0818817 A3	19981028	EP19970304944	19970707
JP10070093 A2	19980310	JP19970203776	19970714
JP2001358091 A2	20011226	JP20010113150	19960807
JP2001358091 A2	20011226	JP20010113150	20010411
JP2008261059 A2	20081030	JP20080183118	20080714
JP3193875 B2	20010730	JP19960208636	19960807
JP9120991 A2	19970506	JP19960208643	19960807
JP9162293 A2	19970620	JP19960208636	19960807
KR100442023 B1	20041025	KR19960032822	19960807
KR100489916 B1	20050915	KR19960032821	19960807
KR100512155 B1	20050905	KR20040074509	20040917
KR19970013059 A	19970329	KR19960032821	19960807
KR19970072101 A	19971107	KR19960032822	19960807
SG96540 A1	20030616	SG19970002339	19970701
TW378363 B	20000101	TW19950111782	19951107
TW402778 B	20000821	TW19970108852	19970625
US2002089027 AA	20020711	US20020092664	20020306
US5962923 A	19991005	US19950511825	19950807
US6045666 A	20000404	US19970977007	19971124
US6136095 A	20001024	US19970939741	19971006
US6217721 BA	20010417	US19960628835	19960405
US6238533 BA	20010529	US19970951990	19971016
US6313027 BA	20011106	US19970944140	19971006

Priority:

US19950511825 19950807	US19960628835 19960405	US19960679547 19960712
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US19970977007 19971124	JP20010113150 19960807	JP19960208636 19960807

Probable Assignee: APPLIED MATERIALS INC

Assignee(s): (std): APPLIED MATERIALS INC

Assignee(s): FORSTER JOHN ; XU ZHENG ; YAO TSE YONG

Inventor(s): (std): CHEN FUSEN ; FORSTER JOHN ; FUSEN CHIEN ; GONGDA YAO ; JIEIMU NURUMAN ; JIYON FUOOSUTAA ; JOHN FOSTER ; KENNY KING TAI NGAN ; NGAN KENNY K T ; NGAN KENNY KING TAI ; NULMAN JAIM ; PETER SATITPUNWAYCHA ; SATITPUNWAYCHA PETER ; TSUEEYAN YAU ; XU ZHENG ; YAO GONG DA ; YAO GONGDA ; YAO TSE YONG ; ZEN SUU ; ZHENG XU

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

Title: Process and system for the treatment of substrates using ions from a low-voltage arc discharge

Abstract: Source: US6045667A A process and system for the treatment of substrates using ions from a low-voltage arc discharge. Before coating with an anti-wear layer, the substrates are etched by ion bombardment in order to enhance the adhesion of the anti-wear layer, and the layer which is growing is influenced during the coating by ion bombardment in order to improve the elastic behavior of brittle hard-material layers. The process increases the capacity of the plasma of a low-voltage arc discharge to penetrate the three-dimensional structures of tools, machine parts and items of practical use, and thus effects more uniform treatment by the ion bombardment and therefore better layer properties in indentations. A prerequisite is a hollow substrate arrangement in which the discharge is not prevented from spreading to the substrates. The process, and the system suitable therefore, can be combined with many PVD coating sources, for example with arc sources, cathodic sputtering sources, or a low-voltage arc source.

Classifications:

International (IPC 8-9): C23C14/02 C23C14/06 C23C14/08 C23C14/24 C23C14/30 C23C14/32 C23C14/34 C23C16/50 C23F4/00 H01L21/302 H01L21/3065 H01L21/31 H05H1/48 H05H1/50 (Advanced/Invention);

C23C14/02 C23C14/06 C23C14/08 C23C14/24 C23C14/28 C23C14/32 C23C14/34 C23C16/50 C23F4/00 H01L21/02 H05H1/24 (Core/Invention)

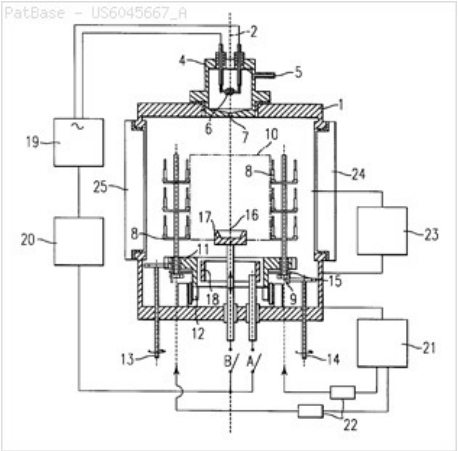
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CPC: C23C14/022 C23C14/0623 C23C14/0641 C23C14/081 C23C14/32 C23C14/345 C23C14/3478 H01J37/32055

European: C23C14/02A2 C23C14/06D C23C14/06F C23C14/08D C23C14/32

C23C14/34C4 C23C14/34G2 H01J37/32M4 M23C14/34D4 T01J237/323G

US: 204/192.12 204/192.16 204/192.32 204/192.34 204/192.38 204/298.07 204/298.15 204/298.16 204/298.17 204/298.31 204/298.36 204/298.41



Family:

Publication number	Publication date	Application number	Application date
AT343660 E	20061115	AT19980110926T	19980615
DE19725930 A1	19981224	DE19971025930	19970616
DE19725930 C2	20020718	DE19971025930	19970616
EP0885981 A2	19981223	EP19980110926	19980615
EP0885981 A3	20010725	EP19980110926	19980615
EP0885981 B1	20061025	EP19980110926	19980615
JP11124668 A2	19990511	JP19980167441	19980615
JP4619464 B2	20110126	JP19980167441	19980615
US6045667 A	20000404	US19980097636	19980616

Priority:

DE19971005930 19970616 DE19971025930 19970616

Probable Assignee: DR EBERHARD MOLL GMBH

Assignee(s): (std): EBERHARD MOLL GMBH DR

Assignee(s): GUEH ANLAGEN GMBH ; DR EBERHARD MOLL GMBH ; DR EBERHARD MOLL GMBH 13435 BERLIN DE

Inventor(s): (std): MOLL EBERHARD DR ; MOLL EBERHARD

Inventor(s): MOLL EBERHARD DR 10711 BERLIN DE

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

Title: Sputtering apparatus and process for high rate coatings

Abstract: Source: US6365010B A sputtering apparatus and method for high rate deposition of electrically insulating and semiconducting coatings with substantially uniform stoichiometry. Vertically mounted, dual rotatable cylindrical magnetrons with associated vacuum pumps form semi-isolated sputtering modules, which can be independently controlled for the sequential deposition of layers of similar or different materials. Constant voltage operation of AC power with an optional reactive gas flow feedback loop maintains constant coating stoichiometry during small changes in pumping speed caused by substrate motion. The coating method is extremely stable over long periods (days) of operation, with the film stoichiometry being selectable by the voltage control point. The apparatus may take the form of a circular arrangement of modules for batch coating of wafer-like substrates, or the modules may be arranged linearly for the coating of large planar substrates.

Classifications:

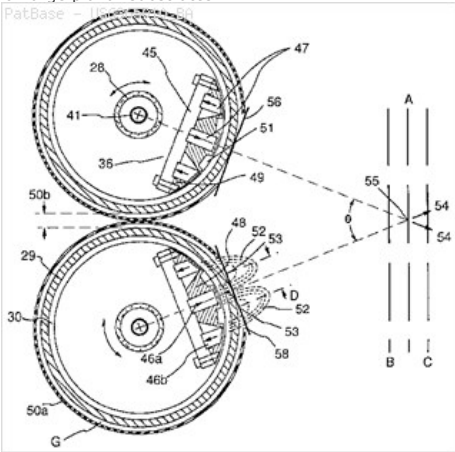
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International (IPC 1-7): C23C14/34 C23C14/35 G11B5/84

CPC: C23C14/35 C23C14/352 C23C14/568 H01J37/3405

European: C23C14/35 C23C14/35D C23C14/56F H01J37/34M2

US: 204/192.12 204/192.22 204/298.07 204/298.09 204/298.11 204/298.12 204/298.15 204/298.2 204/298.21 204/298.22 204/298.26 204/298.28



Family:

Publication number	Publication date	Application number	Application date
JP2002529600 T2	20020910	JP20000581268T	19990916
US6365010 BA	20020402	US19990397445	19990916
US6488824 BA	20021203	US20000616489	20000714
WO0028104 A1	20000518	WO1999US21631	19990916

Priority:

US19980107386P 19981106 WO1999US21631 19990916 US19990397445 19990916

US20000616489 20000714

Probable Assignee: WINSKY TECHNOLOGY LTD

Assignee(s): (std): HOLLARS DENNIS ; SCIVAC ; RAYCOM TECHNOLOGIES INC

Assignee(s): PRECI SOC D ; SCIVAC INC ; SILICON VALLEY BANK ; PRECIS DESIGN CORP ; SHERWOOD PARTNERS LLC ; WINSKY TECHNOLOGY LTD ; MIASOLE ; MIASOLE WAS PRECIS DESIGN CORP ; PINNACLE VENTURES LLC ; AGILITY CAPITAL LLC ; AGILLITY CAPITAL LLC ; AGILLITY CAPITAL LLC SUITE B ; ERAGEN BIOSCIENCES INC

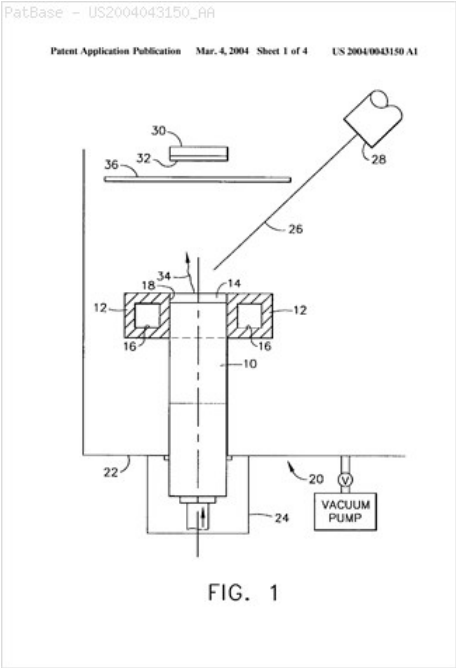
Inventor(s): (std): HOLLARS DENNIS ; HOLLARS DENNIS R ; PETERSEN CARL T ; ROSENBLUM MARTIN P

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

Title: VAPOR DEPOSITION PROCESS AND APPARATUS THEREFOR

Abstract: Source: US2004043150A A process and apparatus for depositing a ceramic coating on a component. The process involves a technique for evaporating an evaporation source containing multiple different oxide compounds, at least one of the oxide compounds having a vapor pressure that is higher than the remaining oxide compounds, to depositing a coating of the multiple oxide compounds. A high energy beam is projected onto the evaporation source to melt and form a vapor cloud of the oxide compounds of the evaporation source, while preventing the vapor cloud from contacting and condensing on the component during an initial phase in which the relative amount of the one oxide compound in the vapor cloud is greater than its relative amount in the evaporation source. During a subsequent phase in which the relative amount of the one oxide compound in the vapor cloud has decreased to something approximately equal to its relative amount in the evaporation source, the vapor cloud is allowed to contact and condense on the component to form the coating.

Classifications:
International (IPC 8-9): C23C14/08 C23C14/28 C23C14/30 C23C14/54 C23C14/56 C23C16/00 C23C16/48 C23C16/52 C23C28/00 C23F1/00 H01J37/305 H01L21/306 (Advanced/Invention); C23C14/08 C23C14/28 C23C14/54 C23C16/00 C23C28/00 (Core/Invention)
International (IPC 1-7): C08J7/18 C23C14/30 C23C16/00 H01J37/305
CPC: H01J37/3053 H01J2237/3132 C23C28/321 C23C28/3215 C23C28/325 C23C28/345 C23C28/3455 C23C14/083 C23C14/548 C23C16/52 C23C14/08 C23C14/30 C23C14/564
European: C23C14/08 C23C14/08H C23C14/30 C23C14/54F C23C14/56D H01J37/305B T01J237/31J
US: 118/688 118/708 118/715 118/722 118/723 118/723.0EB 118/723.0FE 118/723EB 118/723FE 118/723VE 118/726 156/345.39 427/255.31 427/255.32 427/255.36 427/551 427/595 427/596 427/597



Family:

Publication number	Publication date	Application number	Application date
EP1177327 A2	20020206	EP20000991839	20000803
EP1177327 B1	20120613	EP20000991839	20000803
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UA72742 C2	20010917	UA20014002222	20000803
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UA78487 C2	20070410	UA20020086789	20020815
US2004043150 AA	20040304	US20020064887	20020827
US2004211363 AA	20041028	US20040754419	20040108
US2005034669 AA	20050217	US20040709668	20040521
US2013327271 AA	20131212	US20060538908	20061005
US6790486 BB	20040914	US20020064887	20020827
US6983718 BA	20060110	US20000624810	20000724
US7128950 BB	20061031	US20040754419	20040108
US7393416 BB	20080701	US20040709668	20040521
WO0131080 A2	20010503	WO2000US21203	20000803
WO0131080 A3	20011115	WO2000US21203	20000803

Priority:
US19990147232P 19990804 US20000624810 20000724 WO2000US21203 20000803
US20020064887 20020827 US20040709668 20040521 UA20020806789 20020815
US20040754419 20040108 UA20020086789 20020815 US20060538908 20061005

Probable Assignee: GEN ELECTRIC
Assignee(s): (std): EVANS JOHN DOUGLAS SR ; GEN ELECTRIC ; DAROLIA RAMGOPAL ; SPITSBERG IRENE ; MOVCHAN BORIS A
Assignee(s): EVANS JOHN DOUGLAS ; GENERAL ELECTRIC CO ; GENERAL ELECTRIC COMPANY ; BRUCE ROBERT WILLIAM
Inventor(s): (std): DAROLIA RAMGOPAL ; MOVCHAN BORIS A ; SPITSBERG IRENE ; EVANS SR JOHN DOUGLAS ; EVANS JOHN DOUGLAS SR ; EWANJOHN DOUGLAS SENIOR ; EVANS JOHN DOUGLAS ; BRUCE ROBERT WILLIAM ; MOVCHAN BORYS OLEXIIIOVYCH
Inventor(s): MOVCHAN BORIS ; SR JOHN DOUGLAS ; EVANS
Agent(s): GRAY THOMAS; HARTMAN AND HARTMAN PC; DOMENICA NS; DAVID L; GARY M; DOMENICA N S; ANDES WILLIAM SCOTT; HARTMAN GARY M; HARTMAN DOMENICA NS; WILLIAM SCOTT
Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT JP LU MC NL PT SE SG UA

Title: System and method for coating substrates with improved capacity and uniformity

Abstract: Source: US6485616B A system and method for coating substrates. The coating process includes an improved capacity and uniformity through the addition of a second motion component in which the substrates move in a closed path. A major portion of the path is linear and the configuration of the coating machine is such that all substrates follow the same trajectory with respect to the machine during the coating process, resulting in a coating which is substantially the same for all substrates.

Classifications:

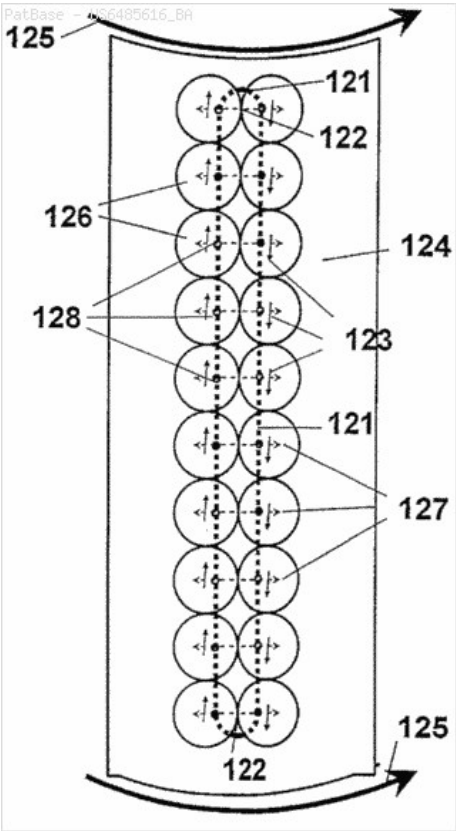
International (IPC 8-9): C23C14/50 (Advanced/Invention);
C23C14/50 (Core/Invention)

International (IPC 1-7): C23C14/34 C23C16/00

CPC: C23C14/505

European: C23C14/50B

US: 118/728 118/729 118/730 204/192.12 204/298.15 204/298.27 204/298.28
204/298.29 427/248.1 427/255.5



Family:

Publication number	Publication date	Application number	Application date
US6485616 BA	20021126	US19990473980	19991229

Priority:

US19990473980 19991229

Probable Assignee: DEPOSITION SCIENCES INC

Assignee(s): (std): DEPOSITION SCIENCES INC

Assignee(s): WELLS FARGO FOOTHILL INC ; US BANK NATIONAL ASSOCIATION ; WELLS FARGO FOOTHILL INC AGENT AS ; BANK OF AMERICA NA ADMINISTRATIVE AGENT AND COLLAT ; BANK OF AMERICA NA ADMINISTRATIVE AGENT AND COLLATERAL AGENT AS ; CIT LENDING SERVICES CORP

Inventor(s): (std): GRAY ROBERT ; HOWARD BILL

Title: THERMAL CRACKING CHEMICAL VAPOR DEPOSITION METHOD FOR SYNTHESIZING NANO-CARBON MATERIAL

Abstract: Source: US2003138561A A thermal cracking chemical vapor deposition method for synthesizing a nano-carbon material is provided. The method includes steps of (a) providing a substrate, (b) spreading a catalyst on the substrate, (c) putting the substrate into a reactor, (d) introducing a carbon containing material, and (e) heating the carbon containing material, thereby the carbon containing material being cracked to provide a carbon source for forming the nano-carbon material on the substrate.

Classifications:

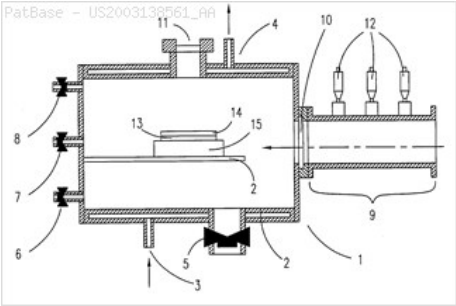
International (IPC 8-9): B82B3/00 C01B31/02 C23C16/00 C23C16/26 C30B25/02 C30B25/18 H05H1/24 (Advanced/Invention); C01B31/00 C30B25/02 C30B25/18 (Core/Invention)

International (IPC 1-7): C23C16/00

CPC: B82Y30/00 B82Y40/00 C01B31/0233 C30B25/02 C30B25/18

European: B82Y30/00 B82Y40/00 C01B31/02B4B2 C30B25/02 C30B25/18

US: 204/192.1 427/240 427/249.1 427/249.100P 427/255.28 427/255.280S 427/282 427/577 427/595 427/595S



Family:

Publication number	Publication date	Application number	Application date
TWI236505 B	20050721	TW20020100409	20020114
US2003138561 AA	20030724	US20030341887	20030113
US7226643 BB	20070605	US20030341887	20030113

Priority:

TW20020100409 20020114

Probable Assignee: NATIONAL SCIENCE COUNCIL

Assignee(s): (std): JUANG ZHEN YU ; KUO TENG FANG ; LIN I NAN ; TSAI CHUEN HORNG ; NAT SCIENCE COUNCIL ; NATIONAL SCIENCE COUNCIL

Inventor(s): (std): GUO TENG FANG ; JUANG JEN YU ; JUANG ZHEN YU ; KUO TENG FANG ; LIN I NAN ; LIN YU NAN ; TSAI CHUEN HORNG ; TSAI CHUEN HUNG

Agent(s): COZEN; MICHAEL B

Title: METHOD FOR OPERATING A PULSED ARC SOURCE

Abstract: Source: US2007000772A This invention relates to an arc-based method for the deposition of insulating layers and to an arc-based method for low-temperature coating processes, in which an electric arc discharge, ignited and applied on the surface of a target in an arc source, is simultaneously fed a direct current and a pulsed or alternating current. The invention further relates to an arc source in which the target is connected to a power supply unit that encompasses either a minimum of one pulsed high-current power supply **18**, **18'** and an additional power supply **13'**, **18'**, or a power supply **21**, **21'**, **22** designed with switchable combinatorial circuitry.

Classifications:

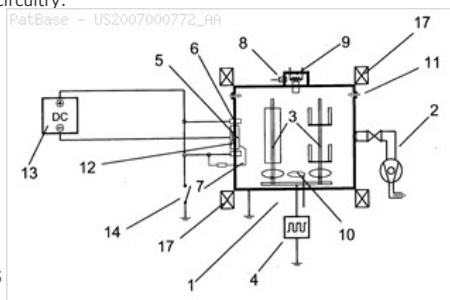
International (IPC 8-9): B05B5/00 B23B27/14 B32B15/01 C23C14/00 C23C14/02 C23C14/06 C23C14/08 C23C14/22 C23C14/24 C23C14/28 C23C14/32 C23C14/35 C23C16/515 C23C28/04 F01D25/00 F01D5/28 F02C7/00 H01J37/00 H01J37/32 H01J37/34 H02M3/28 H02M7/06 H02M7/10 H02M7/5387 H02M9/04 H05H1/24 H05H1/34 H05H1/42 H05H1/46 H05H1/48 (Advanced/Invention); C23C14/06 C23C14/24 C23C14/28 C23C14/32 F01D5/28 H01J37/32 (Advanced/Non-invention); B05B5/00 B32B15/01 C23C14/00 C23C14/06 C23C14/08 C23C14/22 C23C14/24 C23C14/28 C23C14/32 C23C14/35 C23C16/50 F01D25/00 F01D5/28 F02C7/00 H01J37/00 H01J37/32 H02M3/24 H02M7/06 H02M9/00 H05H1/24 H05H1/26 H05H1/46 (Core/Invention); C23C14/06 C23C14/28 H01J37/32 (Core/Non-invention)

International (IPC 1-7): C23C14/32

CPC: H01J37/32091 H01J37/32174 H02M7/10 F05D2230/313 H01J37/3444 H01J37/32055 H01J37/34 C23C14/083 C23C14/024 C23C14/0641 C23C14/08 C23C14/081 C23C14/325 F01D5/288

European: C23C14/02B C23C14/06F C23C14/08 C23C14/08D C23C14/08H C23C14/32A F01D5/28F H01J37/32G H01J37/32H1B H01J37/32M4 H01J37/32M8B H01J37/32M8J H01J37/34 H01J37/34O10 H02M7/10 R05B230/313 T01J237/323D6 T01J237/323G T01J237/36C10

US: 204/192.12 204/192.120P 204/192.38 204/192.380P 204/192.380S 204/298.02 204/298.020S 204/298.06 204/298.060S 204/298.08 204/298.16 204/298.160S 204/298.23 204/298.41 204/298.410S 315/111.21 315/111.210P 315/247 315/282 363/124 363/125 427/576 427/576S 428/469 428/469P



Family:

Publication number	Publication date	Application number	Application date
AT527392 E	20111015	AT20060700563T	20060119
BRPI0609127 A2	20100223	BR2006PI09127	20060301
BRPI0609466 A2	20100413	BR2006PI09466	20060301
BRPI0609673 A2	20100420	BR2006PI09673	20060119
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CA2601729 AA	20070917	CA20062601729	20060301
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CN101175867 A	20080507	CN200680009395	20060119
CN101175867 B	20121114	CN200680009395	20060119
CN101263575 A	20080910	CN200680009506	20060301
CN104201082 A	20141210	CN201410309313	20060301
EP1863947 A1	20071212	EP20060700563	20060119
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EP2355126 A3	20111019	EP20100011124	20060119
EP2447978 A2	20120502	EP20110009905	20060301
EP2447978 A3	20121205	EP20110009905	20060301
ES2374832 T3	20120222	ES20060700563T	20060119
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ES2539017 T3	20150625	ES20060705363T	20060301
HK1123626 A3	20090619	HK20090100993	20090204
IN262282 B	20140815	IN2007DN06146	20070807
JP2008533310 T2	20080821	JP20080502210T	20060119
JP2008533311 T2	20080821	JP20080502215T	20060301
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JP2008533687 T2	20080821	JP20080502214T	20060301
JP2013079452 A2	20130502	JP20120270287	20121211
JP2014029862 A2	20140213	JP20130185669	20130906
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KR20080012260 A	20080211	KR20077021830	20070921
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KR20130041389 A	20130424	KR20137008553	20060301
MX2007011703 A1	20080310	MX20070011703	20070921
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PT1863947 T	20111215	PT20060700563T	20060119
PT1864313 T	20130221	PT20060705364T	20060301
PT1864314 T	20120712	PT20060705365T	20060301
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SG193819 A1	20131030	SG20130006429	20060301

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US2007000772 AA	20070104	US20050102337	20050408
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US2008173536 AA	20080724	US20060908542	20060301
US2008193782 AA	20080814	US20060908563	20060119
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US7455755 BB	20081125	US20060817443	20060320
US7943017 BB	20110517	US20060908542	20060301
WO06099754 A1	20060928	WO2006CH00042	20060119
WO06099758 A2	20060928	WO2006CH00123	20060301
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WO06099759 A3	20080410	WO2006CH00124	20060301
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WO06099760 A3	20071206	WO2006CH00125	20060301

Priority:

CH20050051805	20050324	CH20050000518	20050324	CH20050000129	20050803
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WO2006CH00124	20060301	WO2006CH00124	20060320	WO2006CH00123	20060301
WO2006CH00125	20060301	EP20060700563	20060119	EP20060705363	20060301
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Probable Assignee: OERLIKON TRADING TRUBBACH AG

Assignee(s):	(std):	DERFLINGER VOLKER ; GSTOEHL OLIVER ; KALSS WOLFGANG ; LENDI DANIEL ; RAMM JUERGEN ; REITER ANDREAS ; RAMM JURGEN ; OERLIKON TRADING TRUEBBACH AG ; OERLIKON TRADING AS TRUBBACH ; OERLIKON TRADING AG ; OERLIKON SURFACE SOLUTIONS TRUEBBACH AG ; UNAXIS BALZERS AG ; WIDRIG BENO ; TUYMER GERHARD
Assignee(s):		UNAXIS BALZERS LTD ; OERLIKON TRADING AG TRUBBACH ; OERLIKON TRADING TRUBBACH AS ; OERLIKON TRADING TRUEBBACH AGHAUPTSTRASSECH-9477TRUBBACHCH ; OERLIKON TRADING TRUBBACH AG ; OERLIKON TRADING AG TRUEBBACH ; OC OERLIKON BALZERS AG ; OERLIKON SURFACE SOLUTIONS TRUBBACH AG
Inventor(s):	(std):	ANDREAS REITER ; BENO WIDRIG ; DANIEL LENDI ; GERHARD TUYMER ; JUERGEN RAMM ; KALSS WOLFGANG ; OLIVER GSTOEHL ; RAMM DR JUERGEN ; RAMM JUERGEN ; RAMM JURGEN ; RETTER ANDREAS ; VOLKER DERFILINGER ; WOLFGANG KALSS ; TUYMER GERHARD ; REITER ANDREAS ; LENDI DANIEL ; GSTOEHL OLIVER ; WIDRIG BENNO ; WIDRIG BENO ; DERFLINGER VOLKER
Inventor(s):		JURGEN RAMM ; WIDRIG BENOCH ; DIE ERFINDERNENNUNG LIEGT NOCH NICHT VOR ; VOLKER DERFLINGER ; REITER ANDREASAT ; RAMM JUERGENCH ; LENDI DANIELCH ; DERFLINGER VOLKERAT
Agent(s):		WEGMANN URS; RUEFENACHT PHILIPP MICHAEL; PEARNE AND GORDON LLP; NOTARO AND MICHALOS; NOTARO AND MICHALOS PC; NATORO MICHALOS AND ZACCARIA PC
Designated states:		AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: CHROMIUM NITRIDE ION-PLATING COATING AND ITS PRODUCTION METHOD, AS WELL AS PISTON RING USED FOR INTERNAL COMBUSTION ENGINE

Abstract: Source: US2010295251A [Task] The chromium nitride ion-plating coating has a property that it is hard but is liable to peel off. Year by year, the required level of wear resistance and scuffing resistance becomes higher in a diesel engine. The property of a coating is improved to enhance the wear resistance and scuffing resistance and also to improve resistance against peeling off. [Means for Solution] (1) Composition is mainly composed of chromium, nitrogen, and carbon, and the concentration of carbon relative to the total concentration of the main components is from 4 to 8 percent by weight. (2) The crystal structure is that texture of the CrN (111) plane orientation is from 0.4 to 2.0 in terms of a CrN (111) structural coefficient. (3) Vickers hardness is from Hv 1600 to Hv 2000.

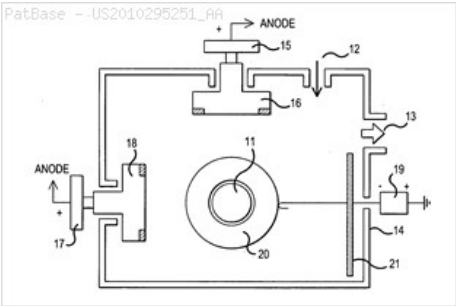
Classifications:

International (IPC 8-9): B32B15/04 B32B3/10 C23C14/00 C23C14/06 C23C14/24 C23C14/32 C23C14/34 C23C26/00 C23C30/00 F02F5/00 F16J9/26 (Advanced/Invention); C23C14/00 C23C14/06 C23C14/32 C23C14/34 C23C26/00 C23C30/00 F02F5/00 (Core/Invention)

CPC: C23C14/0036 C23C14/0073 C23C14/0084 C23C14/0641 C23C14/0664 C23C14/325 C23C26/00 C23C30/00 F16J9/26

European: C23C14/00F2 C23C14/00F2L C23C14/00F2N C23C14/06F C23C14/06G C23C14/32A C23C26/00 C23C30/00 F16J9/26

US: 277/434 277/440 277/442 277/443 277/443P 427/523 427/530 427/530S 427/531 428/141 428/141S 428/615 428/621 428/627 428/689 428/698 428/699



Family:

Publication number	Publication date	Application number	Application date
CN101680078 A	20100324	CN200780042368	20071112
CN101680078 B	20120530	CN200780042368	20071112
EP2119807 A1	20091118	EP20070831648	20071112
EP2119807 A4	20100811	EP20070831648	20071112
JP5319295 B1	20131016	JP20080544127T	20071112
JP5319295 B2	20131016	JP20080544127T	20071112
US2010295251 AA	20101125	US20070514679	20071112
US8597797 BB	20131203	US20070514679	20071112
WO08059791 A1	20080522	WO2007JP71918	20071112

Priority:
JP20060308077 20061114 WO2007JP71918 20071112 JP20080544127 20071112

Probable Assignee: RIKEN KK

Assignee(s): (std): RIKEN KK ; SEKIYA TAKUMA ; SHIMA YUJI ; UEDA TERUSHIGE ; INOUE SHIGEO

Assignee(s): KABUSHIKI KAISHA RIKEN

Inventor(s): (std): INOUE SHIGEO ; SEKIYA TAKUMA ; SHIMA YUJI ; UEDA TERUSHIGE ; YUJI SHIMA ; TERUSHIGE UEDA ; TAKUMA SEKIYA ; SHIGEO INOUE

Agent(s): STROBEL WOLFGANG; BIRCH STEWART KOLASCH AND BIRCH; BIRCH STEWART KOLASCH AND BIRCH LLP; MURAI TAKUO

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: HIGH THROUGHPUT PHYSICAL **VAPOR DEPOSITION APPARATUS** AND METHOD FOR MANUFACTURE OF SOLID STATE BATTERIES

Abstract: Source: US2012055633A An apparatus for formation of element(s) of an electrochemical cell using a complete process. The apparatus includes a first work piece configured to a transfer device, a source of material in fluid form, a reaction region operably coupled to the source of material and a second work piece configured within a vicinity of the reaction region. The apparatus also has an energy source configured to the reaction region to subject a portion of the material to energy to substantially evaporate the portion of the material within a time period and cause deposition of a gaseous species derived from the evaporated material onto a surface region of the second work piece to form a thickness of material for a component of the solid state electrochemical device and a vacuum chamber to maintain at least the first and second work pieces, the reaction region, and the material within a vacuum environment.

Classifications:

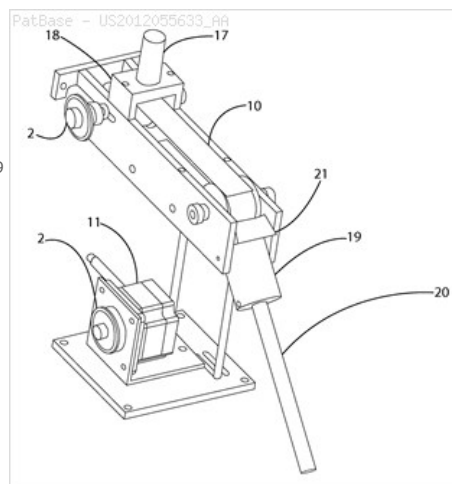
International (IPC 8-9): C23C16/448 C23C16/52 C23C16/56 C23F1/08

H01M4/04 (Advanced/Invention)

CPC: H01M4/0423 H01M4/04 C23C14/246 H01M4/0402 H01M4/0407 H01M10/0472 H01M10/052 H01M2008/1095 Y02T10/7011

European: C23C14/24B H01M4/04 H01M4/04B H01M4/04B6 T01M10/04N T01M10/052 T01M8/10P Y02T10/70B2

US: 118/688 118/688S 118/697 118/697S 118/712 118/712S 118/719 118/720 118/720S 118/723R 118/726 118/726S 156/345.1 156/345.100S 156/345.31 156/345.39 156/345.390P 156/345.4 156/345.400S 156/345.54 204/298.31



Family:

Publication number	Publication date	Application number	Application date
US2012055633 AA	20120308	US20110292368	20111109
US2013220546 AA	20130829	US20130854899	20130401

Priority:

US20110292368 20111109 US20130854899 20130401

Probable Assignee: SAKTI3 INC

Assignee(s): (std): CHUNG MYOUNGDO ; KIM HYONCHEOL ; LANGLOIS MARC ; SAKTI 3 INC ; SAKTI3 INC ; SASTRY ANN MARIE

Inventor(s): (std): CHUNG MYOUNGDO ; KIM HYONCHEOL ; LANGLOIS MARC ; SASTRY ANN MARIE

Title: VACUUM DEPOSITION APPARATUS

Abstract: Source: US2013020195A Disclosed is a vacuum deposition apparatus which suppresses mutual interference of magnetic fields generated by multiple magnetic-field applying mechanisms for evaporation sources. The vacuum deposition apparatus includes a deposition chamber; a magnetic-field applying mechanism of sputtering evaporation source disposed in the deposition chamber; a magnetic-field applying mechanism of arc evaporation source disposed in the same deposition chamber; and magnetic-field shielding units arranged so as to cover partially or entirely at least one of these magnetic-field applying mechanisms for evaporation sources (preferably the magnetic-field applying mechanism of sputtering evaporation source). Portions (portions to face a target material upon dosing) of openable units of magnetic-field shielding units are preferably made from a non-magnetic material.

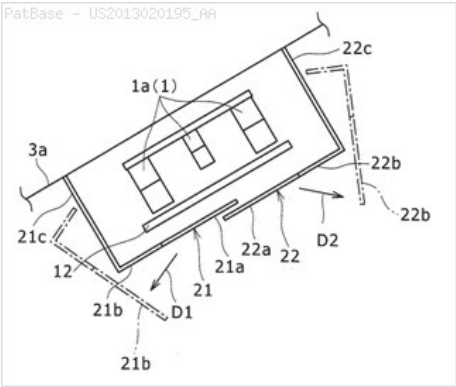
Classifications:

International (IPC 8-9): C23C14/22 C23C14/32 C23C14/34 C23C14/35 C23C14/50 H01J37/00 H01J37/32 H01L21/203 (Advanced/Invention); H01J37/34 (Advanced/Non-invention)

CPC: H01J37/3447 C23C14/3492 C23C14/325 C23C14/352 C23C14/505 H01J37/32055

H01J37/3402 H01J2237/0264

US: 204/298.11 204/298.16



Family:

Publication number	Publication date	Application number	Application date
EP2548992 A1	20130123	EP20120004988	20120705
JP2013023744 A2	20130204	JP20110161264	20110722
JP5764002 B2	20150812	JP20110161264	20110722
KR101430809 B1	20140818	KR20120079046	20120720
KR20130011963 A	20130130	KR20120079046	20120720
US2013020195 AA	20130124	US20120543330	20120706
US9017534 BB	20150428	US20120543330	20120706

Priority:

JP20110161264 20110722

Probable Assignee: KOBE STEEL LTD

Assignee(s): (std): HIROTA SATOSHI ; KOBE STEEL LTD ; YAMAMOTO KENJI

Assignee(s): KOBE SEIKO SHO KK ; KABUSHIKI KAISHA KOBE SEIKO SHO ; KABUSHIKI KAISHA KOBE SEIKO SHO (KOBE STEEL, LTD.) ; KABUSHIKI KAISHA KOBE SEIKO SHO KOBE STEEL LTD ; KOBE SEIKO SHO KOBE STEEL LTD KK

Inventor(s): (std): HIROTA SATOSHI ; YAMAMOTO KENJI

Agent(s): Müller-Boré &, Partner Patentanwälte; OBLON MCCLELLAND MAIER AND NEUSTADT LLP

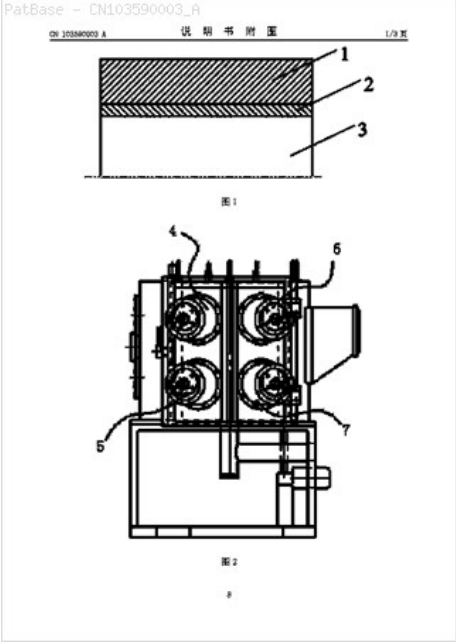
Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Title: METHOD FOR PREPARING HARD DAMPING COATING ON SURFACE OF ROTATING MACHINERY BLADE THROUGH PVD (PHYSICAL VAPOR DEPOSITION)

Abstract: Source: CN103590003A The invention provides a method for preparing a hard damping coating on the surface of a rotating machinery blade through PVD (physical vapor deposition), and belongs to the technical field of materials. The method comprises steps as follows: 1), the rotating machinery blade is taken as a matrix and cleaned by ultrasonic waves; 2), the rotating machinery blade is cleaned by nitrogen after dried by air; 3), a nitrogen matrix is placed in a vacuum chamber of a filter arc ion plating machine for vacuum pumping; 4), argon is fed, negative bias is applied to the matrix, and the surface of the matrix is cleaned by ions produced by glow discharge among electrodes; 5), argon is fed after vacuum pumping, the matrix is preheated to the temperature of 100-150 DEG C, the filter arc ion plating machine is started, and a titanium coating is deposited on the surface of the matrix; and 6), multiple cathodes are symmetrically started for magnetically filtering vacuum arc, an Ni60Cr33.74Al14.5Y1.8 alloy coating is deposited, and the hard damping coating is formed on the surface of the matrix. The method for preparing the hard damping coating on the surface of the rotating machinery blade through PVD has the characteristics that the blade application range is wide, the coating materials are rich and various, the temperature in the preparation process is low, the coating is uniform, environmental pollutants such as dust, waste gas and the like don't exist, the equipment cost is low, the production efficiency is high and the like.

Classifications:

International (IPC 8-9): C23C14/02 C23C14/16 C23C14/46 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN103590003 A	20140219	CN201310561018	20131113

Priority:
CN201310561018 20131113

Probable Assignee: UNIV NORTHEASTERN

Assignee(s): (std): TOHOKU UNIV ; UNIV NORTHEASTERN

Assignee(s): NORTHEASTERN UNIV

Inventor(s): (std): BA DECHUN ; DU GUANGYU ; HAN QINGKAI ; SUN WEI