

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
22 November 2007 (22.11.2007)

PCT

(10) International Publication Number
WO 2007/133520 A3

(51) International Patent Classification:

A61L 31/16 (2006.01) A61L 31/10 (2006.01)
A61L 31/08 (2006.01) A61L 31/12 (2006.01)

(21) International Application Number:

PCT/US2007/011058

(22) International Filing Date: 7 May 2007 (07.05.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

11/433,898 12 May 2006 (12.05.2006) US

(71) Applicant (for all designated States except US): **BOSTON SCIENTIFIC LIMITED** [IE/—]; (Barbados Home Office), P.O. Box 1317, Seaston House, Hastings, Christ Church (BB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ATANASOSKA, Liliana** [US/US]; 5209 Windsor Avenue, Edina, MN 55436 (US). **WARNER, Robert** [US/US]; 1665 Lamp-light Drive, Woodbury, MN 55125 (US). **GUNDERSON, Rick** [US/US]; 17778 82nd Avenue North, Maple Grove, MN 55311 (US). **WEBER, Jan** [NL/US]; 18112 89th Place North, Maple Grove, MN 55311 (US). **SCHEWE, Scott** [US/US]; 6300 Duck Lake Road, Eden Prairie, MN 55346 (US).

(74) Agents: **STERN, Gidon, D.** et al.; Jones Day, 222 East 41st Street, New York, NY 10017-6702 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

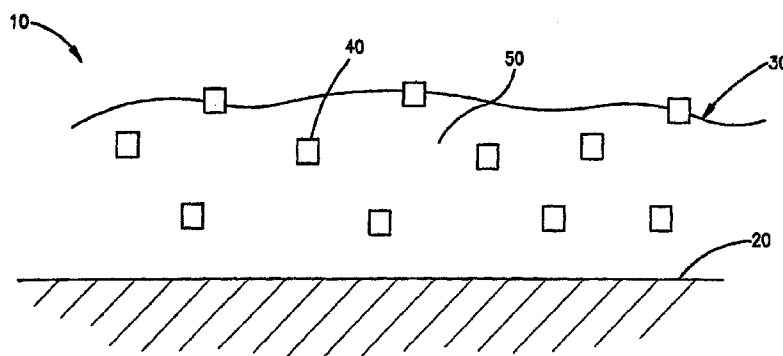
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
24 January 2008

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: STENT COATING COMPRISING TITANIUM OXIDE OR IRIIDIUM OXIDE AND A THERAPEUTIC AGENT



(57) Abstract: The invention relates generally to an implantable medical device for delivering a therapeutic agent to the body tissue of a patient, and a method for making such a medical device. In particular, the invention pertains to an implantable medical device, such as an intravascular stent, having a coating comprising an inorganic or ceramic oxide, such as titanium oxide, and a therapeutic agent.



WO 2007/133520 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/011058

A. CLASSIFICATION OF SUBJECT MATTER INV. A61L31/16 A61L31/08 A61L31/10 A61L31/12		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) A61L		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, COMPENDEX, MEDLINE, EMBASE, BIOSIS, CHEM ABS Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/159805 A1 (WEBER JAN [US] ET AL) 21 July 2005 (2005-07-21) paragraphs [0016], [0018], [0019], [0022], [0031], [0043], [0044]; figure 1	1-30
X	----- US 2004/039438 A1 (ALT ECKHARD [DE]) 26 February 2004 (2004-02-26) paragraphs [0009], [0011], [0012], [0023], [0028], [0036], [0037]; figure 2 ----- -/--	1-30
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents :		
A document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family	
Date of the actual completion of the international search	Date of mailing of the international search report	
21 November 2007	04/12/2007	
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Pilling, Stephen	

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/011058

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 245 104 B1 (ALT ECKHARD [DE]) 12 June 2001 (2001-06-12) column 1, line 39 - line 48 column 3, line 3 - line 58 column 4, line 40 - line 61 column 10, line 23 - column 11, line 36; figure 2	1-30
X	US 6 099 561 A (ALT ECKHARD [DE]) 8 August 2000 (2000-08-08) column 1, line 49 - line 60 column 2, line 40 - line 57 column 7, line 44 - column 8, line 44 column 9, line 66 - column 11, line 29; figures 1A,2	1-30
X	WO 2005/044361 A (MERLIN MD PTE LTD [SG]; GANDHI DEEPAK [SG]; RUDAKOV LEON [US]; O'CONNO) 19 May 2005 (2005-05-19) page 2, line 3 - line 11 page 3, line 26 page 4, line 17 - line 18 page 14, line 22 - line 23 page 15, line 17 - page 16, line 12; figure 1A	1-30
X	WO 2005/082277 A (UNIV STANFORD [US]; DIMITRIOS PANTELIDIS [US]; BRAVMAN JOHN C [US]) 9 September 2005 (2005-09-09) paragraphs [0044], [0048], [0064] - [0078], [0085]; figure 2	1-30
X	US 6 709 379 B1 (BRANDAU WOLFGANG [DE] ET AL) 23 March 2004 (2004-03-23) column 2, line 61 - column 3, line 25 column 8, line 18 - line 44; figure 4	1-30
X	US 2006/088567 A1 (WARNER ROBERT [US] ET AL) 27 April 2006 (2006-04-27) paragraphs [0017], [0021], [0024], [0036]; figure 1	1-30
X	US 2006/088566 A1 (PARSONAGE EDWARD [US] ET AL) 27 April 2006 (2006-04-27) paragraphs [0002], [0008], [0011], [0013], [0019]	1-30
X	DATABASE WPI Week 200652 Derwent Publications Ltd., London, GB; AN 2006-508647 XP002459349 & KR 2005 0117361 A (HUMED CO LTD) 14 December 2005 (2005-12-14) abstract	1-30

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2007/011058

Patent document cited in search report	Publication date	Publication date	Patent family member(s)	Publication date
US 2005159805	A1	21-07-2005	EP 1722836 A2 WO 2005072788 A2	22-11-2006 11-08-2005
US 2004039438	A1	26-02-2004	NONE	
US 6245104	B1	12-06-2001	DE 19916315 A1	07-09-2000
US 6099561	A	08-08-2000	NONE	
WO 2005044361	A	19-05-2005	EP 1682210 A1 US 2007067009 A1	26-07-2006 22-03-2007
WO 2005082277	A	09-09-2005	NONE	
US 6709379	B1	23-03-2004	AT 230620 T AU 759091 B2 AU 1378200 A BG 105484 A BR 9914954 A CA 2346857 A1 CN 1325315 A CZ 20011455 A3 DK 1124594 T3 EA 3260 B1 EE 200100241 A WO 0025841 A1 EP 1124594 A1 ES 2189535 T3 HK 1038199 A1 HU 0103759 A2 JP 2003517853 T NO 20012115 A NZ 511190 A PL 348746 A1 PT 1124594 T SK 5592001 A3 TR 200101138 T2	15-01-2003 03-04-2003 22-05-2000 31-01-2002 06-11-2001 11-05-2000 05-12-2001 12-09-2001 24-02-2003 27-02-2003 15-08-2002 11-05-2000 22-08-2001 01-07-2003 15-08-2003 28-02-2002 03-06-2003 01-06-2001 29-08-2003 03-06-2002 30-04-2003 03-12-2001 21-09-2001
US 2006088567	A1	27-04-2006	CA 2586010 A1 EP 1804847 A2 WO 2006049943 A2	11-05-2006 11-07-2007 11-05-2006
US 2006088566	A1	27-04-2006	EP 1809347 A2 WO 2006049942 A2	25-07-2007 11-05-2006
KR 20050117361	A	14-12-2005	NONE	