

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
7 May 2009 (07.05.2009)

(10) International Publication Number  
**WO 2009/059085 A3**

(51) International Patent Classification:

A61L 31/08 (2006.01) A61L 31/14 (2006.01)  
A61L 31/10 (2006.01) A61F 2/90 (2006.01)

(21) International Application Number:

PCT/US2008/081920

(22) International Filing Date:

31 October 2008 (31.10.2008)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

11/934,413 2 November 2007 (02.11.2007) US

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

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SCHEUERMANN, Tosten** [DE/DE]; Viktor-Scheffel-Str. 20, 80803 Munich (DE). **KUHLING, Michael** [DE/DE]; Herzogstr 96, 80796 Munich (DE).

(74) Agents: **GAGEL, John J.** et al.; Fish & Richardson P.C., P.O. Box 1022, Minneapolis, MN 55440-1022 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, 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, ST, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, 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 (Art. 21(3))

[Continued on next page]

(54) Title: NANO-PATTERNED IMPLANT SURFACES

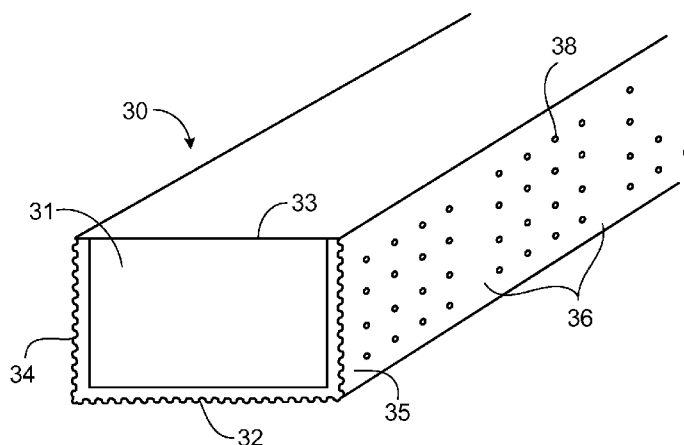


FIG. 3

(57) Abstract: A bioerodible endoprosthesis erodes to a desirable geometry that can provide, e.g., improved mechanical properties or degradation characteristics.



WO 2009/059085 A3



---

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

**(88) Date of publication of the international search report:**  
6 May 2010

# INTERNATIONAL SEARCH REPORT

International application No PCT/US2008/081920
---

**A. CLASSIFICATION OF SUBJECT MATTER**

INV. A61L31/08      A61L31/10      A61L31/14      A61F2/90

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 A61F

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, EMBASE, INSPEC, BIOSIS

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/129215 A1 (HELMUS MICHAEL N [US] ET AL) 15 June 2006 (2006-06-15) paragraph [0006] - paragraph [0007] paragraph [0014] paragraph [0018] paragraph [0019] paragraph [0033] paragraph [0073] paragraph [0098] - paragraph [0100] ----- -/--	1-30

Further documents are listed in the continuation of Box C.

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

11 March 2010

Date of mailing of the international search report

19/03/2010

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040,  
 Fax: (+31-70) 340-3016

Authorized officer

Laurent, Antoine

## INTERNATIONAL SEARCH REPORT

International application No

PCT/US2008/081920

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>US 2007/110888 A1 (RADHAKRISHNAN RAJESH [US] ET AL) 17 May 2007 (2007-05-17)</p> <p>paragraph [0010]  paragraph [0012] - paragraph [0016]  paragraph [0030]  paragraph [0045] - paragraph [0047]  paragraph [0079]  paragraph [0103]  paragraph [0111]  paragraph [0127]</p>	<p>1-8,  11-22,  24-26,  28, 30</p>
X,P	<p>WO 2008/061017 A1 (BOSTON SCIENT SCIMED INC [US]; XU YIXIN [US]; SCHEUERMANN TORSTEN [DE]) 22 May 2008 (2008-05-22)  the whole document</p>	<p>1-9,  12-26,  28, 30</p>
A	<p>BRÉTAGNOL F, VALSESIA A, CECCONE G, COLPO, P GILLILAND D: "Surface Functionalization and Patterning Techniques to Design Interfaces for Biomedical and Biosensor Applications"  PLASMA PROCESSES AND POLYMERS, vol. 3, 22 June 2006 (2006-06-22), pages 443-455, XP002572323  cited in the application  the whole document</p>	<p>1-30</p>
A	<p>BRÉTAGNOL F ET AL.: "Functional Micropatterning Surfaces by Combination of Plasma Polymerization and Lift-Off Processes"  PLASMA PROCESSES AND POLYMERS, vol. 3, 14 November 2005 (2005-11-14), pages 30-38, XP002572324  the whole document</p>	<p>1-30</p>
A	<p>SARDELLA E ET AL.: "Plasma-Aided Micro- and Nanopatterning Processes for Biomedical Applications"  PLASMA PROCESSES AND POLYMERS, vol. 3, 28 June 2006 (2006-06-28), pages 456-469, XP002572374  cited in the application  the whole document</p>	<p>1-30</p>
	-/--	

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2008/081920

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2007/112421 A1 (O'BRIEN BARRY [IE]) 17 May 2007 (2007-05-17) paragraph [0003] paragraph [0037] - paragraph [0038] paragraph [0043] paragraph [0044] paragraph [0047] paragraph [0050] paragraph [0060] paragraph [0075] paragraph [0077]  -----	1-30

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2008/081920
---

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006129215 A1	15-06-2006	EP 1819376 A2 WO 2006068838 A2	22-08-2007 29-06-2006
US 2007110888 A1	17-05-2007	EP 1957007 A1 WO 2007058841 A1	20-08-2008 24-05-2007
WO 2008061017 A1	22-05-2008	NONE	
US 2007112421 A1	17-05-2007	EP 1951170 A2 WO 2007058842 A2	06-08-2008 24-05-2007