

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 September 2007 (27.09.2007)

PCT

(10) International Publication Number
WO 2007/108916 A3

(51) International Patent Classification:

A61L 27/34 (2006.01) A61L 29/16 (2006.01)
A61L 27/54 (2006.01) A61L 31/10 (2006.01)
A61L 27/56 (2006.01) A61L 31/14 (2006.01)
A61L 29/08 (2006.01) A61L 31/16 (2006.01)
A61L 29/14 (2006.01)

(21) International Application Number:

PCT/US2007/005509

(22) International Filing Date: 5 March 2007 (05.03.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

11/375,021 15 March 2006 (15.03.2006) US

(71) Applicant (for all designated States except US): **BOSTON SCIENTIFIC SCIMED, INC.** [US/US]; One Scimed Place, Maple Grove, , MN 55311-1566 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **HERRMANN, Robert** [US/US]; 15 Waltham Street B-605, Boston, MA 02118 (US).

(74) Agent: **RINGEL, Douglas, E.**; Kenyon & Kenyon LLP, 1500 K. Street, N.W., Washington, DC 20005 (US).

(81) Designated States (unless otherwise indicated, for every

kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, 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, 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:

27 December 2007

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: DRUG DELIVERY COMPOSITION AND METHODS OF MAKING SAME USING NANOFABRICATION

(57) Abstract: The present invention relates to drug delivery compositions, drug delivery units, drug delivery devices and methods of making the same using nanofabrication processes. The nanofabrication processes are used to make pores in a matrix. Exemplary nanofabrication processes include nanoimprinting, reverse imprinting, nanolithography, and photolithography.



WO 2007/108916 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/005509

| | | | | | |
|--------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| A. CLASSIFICATION OF SUBJECT MATTER | | | | | |
| INV. | A61L27/34 | A61L27/54 | A61L27/56 | A61L29/08 | A61L29/14 |
| | A61L29/16 | A61L31/10 | A61L31/14 | A61L31/16 | |

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, CHEM ABS Data, COMPENDEX, EMBASE, INSPEC, WPI Data, 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 2005/119723 A1 (PEACOCK JAMES C III [US]) 2 June 2005 (2005-06-02) | 1-30 |
| Y | paragraph [0044] paragraph [0071] paragraph [0103] paragraph [0108] paragraph [0124] claims | 10-13, 26, 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 25 October 2007 | Date of mailing of the international search report 02/11/2007 |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------|

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| 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 FEY-LAMPRECHT, F |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/005509

| 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 2006/051392 A1 (HERUTH KENNETH T [US] ET AL) 9 March 2006 (2006-03-09) | 1-30 |
| Y | paragraphs [0007], [0008] paragraph [0025] paragraphs [0031], [0032] paragraphs [0044], [0045] paragraphs [0051] - [0054] figure 5 claims | 10-13, 26, 30 |
| X | WO 00/01322 A (SCHNEIDER USA INC [US]) 13 January 2000 (2000-01-13) claims | 1-30 |
| Y | WO 2004/024300 A (UNIV MICHIGAN [US]; FISSELL WILLIAM H IV [US]; HUMES DAVID H [US]; ROY) 25 March 2004 (2004-03-25) page 5, line 13 - line 26 page 15, line 4 - page 17, line 9 | 10-13, 26, 30 |
| A | WO 01/17577 A (ADVANCED CARDIOVASCULAR SYSTEM [US]) 15 March 2001 (2001-03-15) page 14, line 24 - page 15, line 5 claims | 1-30 |
| A | US 2004/254635 A1 (SHANLEY JOHN F [US] ET AL) 16 December 2004 (2004-12-16) paragraph [0062] paragraphs [0066] - [0068] paragraph [0074] figures | 1-30 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/005509

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|-------------------------------------------|----|---------------------|----------------------------|---------------------|
| US 2005119723 | A1 | 02-06-2005 | EP 1687042 A1 | 09-08-2006 |
| | | | US 2006115512 A1 | 01-06-2006 |
| | | | WO 2005053766 A1 | 16-06-2005 |
| <hr/> | | | | |
| US 2006051392 | A1 | 09-03-2006 | NONE | |
| <hr/> | | | | |
| WO 0001322 | A | 13-01-2000 | CA 2336650 A1 | 13-01-2000 |
| | | | DE 1096902 T1 | 23-05-2002 |
| | | | EP 1096902 A1 | 09-05-2001 |
| | | | ES 2169012 T1 | 01-07-2002 |
| | | | JP 2002519139 T | 02-07-2002 |
| | | | US 6652581 B1 | 25-11-2003 |
| | | | US 2004067301 A1 | 08-04-2004 |
| <hr/> | | | | |
| WO 2004024300 | A | 25-03-2004 | AU 2003272310 A1 | 30-04-2004 |
| | | | CA 2501965 A1 | 25-03-2004 |
| | | | EP 1545749 A1 | 29-06-2005 |
| | | | US 2006213836 A1 | 28-09-2006 |
| | | | US 2004124147 A1 | 01-07-2004 |
| <hr/> | | | | |
| WO 0117577 | A | 15-03-2001 | AU 6941800 A | 10-04-2001 |
| | | | DE 60032912 T2 | 25-10-2007 |
| | | | EP 1214108 A1 | 19-06-2002 |
| | | | US 2002193475 A1 | 19-12-2002 |
| <hr/> | | | | |
| US 2004254635 | A1 | 16-12-2004 | NONE | |
| <hr/> | | | | |