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(54) Title: BIOABSORBABLE DRUG DELIVERY DEVICES

(57) **Abstract:** A bioabsorbable drug delivery device and various methods of making the same. The devices are preferably formed from bioabsorbable materials using low temperature fabrication processes, whereby drugs or other bio-active agents are incorporated into or onto the device and degradation of the drugs or other agents during processing is minimized. Radiopaque markers may also be incorporated into, or onto, the devices. The devices may be generally tubular helical stents comprised of a solid ladder or an open lattice configuration, or a hybrid combination thereof. The tubular helical stents are generally formed from precursor fibers, films or tubes.



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INTERNATIONAL SEARCH REPORT

International application No

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A. CLASSIFICATION OF SUBJECT MATTER

INV. 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 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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	<p>US 2005/021131 A1 (VENKATRAMAN SUBRAMANIAN [SG] ET AL) 27 January 2005 (2005-01-27)</p> <p>page 1, paragraphs 2,12,14 page 2, paragraphs 20,21 page 3, paragraph 44 page 4, paragraph 52 - paragraph 54 page 6, paragraph 90 claims 1,2,14,15,17,37,39,43,47-49,54,55</p> <p>----- -/--</p>	<p>1,2, 10-13 3-9</p>

☒ 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

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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

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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 5 171 812 A (DOMB ABRAHAM J [US]) 15 December 1992 (1992-12-15) column 1, line 6 - line 10 column 1, line 26 - line 38 column 3, line 45 - line 55 column 4, line 26 - line 28 column 5, line 40 - line 46 column 8, line 9 - line 15 example 12 claims 1,5,12</p>	1,10
Y	<p>US 4 553 545 A (MAASS DIERK [CH] ET AL) 19 November 1985 (1985-11-19) column 12, line 45 - line 66 figures 22,23</p>	3,4,8,9
Y	<p>WO 98/41170 A (ENDOTEX INTERVENTIONAL SYS INC [US]) 24 September 1998 (1998-09-24) page 1, line 4 - line 11 page 9, line 26 - page 10, line 20 page 12, line 12 - line 30 claim 1 figures 1,2,5</p>	5-7
A	<p>US 2004/024448 A1 (CHANG JAMES W [US] ET AL) 5 February 2004 (2004-02-05) page 1, paragraph 1 page 2, paragraph 10 page 3, paragraph 19 page 4, paragraph 29</p>	1-13
A	<p>EP 1 555 278 A (INNOCORE TECHNOLOGIES B V [NL]) 20 July 2005 (2005-07-20) page 2, paragraph 1 page 9, paragraph 62 page 10, paragraph 74 claims 1,2,30,31</p>	1-13

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/060237

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search reportcovers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-13

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-13

an implantable drug delivery device comprising a tubular structure formed of a strip cut from the film which is solvent cast

2. claims: 14-17

a method of forming a drug delivery device by co-extruding different bioabsorbable polymer tubes

3. claims: 18-20

a method of forming a drug delivery device by co-mingling different bioabsorbable polymeric fibers

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/060237

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