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(71) Applicant: **BECTON, DICKINSON AND COMPANY** [US/US]; 1 Becton Drive, Mail Code 110, Franklin Lakes, New Jersey 07417-1880 (US).

(72) Inventor: **SHEVGOOR, Siddarth K.**; 7383 Union Creek Way, 11H, Midvale, Utah 84047 (US).

(74) Agents: **HIGHET, David W.** et al.; Becton, Dickinson And Company, 1 Becton Drive, Mail Code 110, Franklin Lakes, New Jersey 07417-1880 (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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,

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Declarations under Rule 4.17:

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

— with international search report (Art. 21(3))
— 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:

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(54) Title: CATHETER TUBING WITH EXTRALUMINAL ANTIMICROBIAL COATING

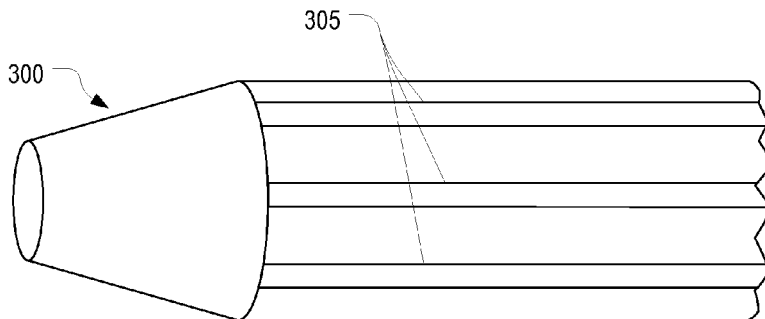


FIG. 3A

(57) Abstract: Various methods can be employed to apply an antimicrobial coating to the outer surface of catheter tubing. The antimicrobial coating minimizes the risk of microbe colonization on the outer surface of the catheter tubing when the catheter tubing is positioned within the vasculature of a patient. A catheter can be manufactured using a pre-treatment process which applies the antimicrobial coating to the catheter tubing prior to applying a lubricant over top of the coating. The lubricant can function to retain the coating on the outer surface and also to limit the diffusion of the antimicrobial agent from the coating.



INTERNATIONAL SEARCH REPORT

International application No
PCT/US2015/025795

A. CLASSIFICATION OF SUBJECT MATTER
 INV. A61L29/06 A61L29/16 A61L29/18 A61M39/08
 ADD.
 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 practicable, 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.
A	US 2010/069854 A1 (OKOH ONAJITE [US] ET AL) 18 March 2010 (2010-03-18) claims 15-24; example 6 -----	1-6
X	US 4 925 668 A (KHAN MOHAMMAD A [US] ET AL) 15 May 1990 (1990-05-15) lines 16-36 - column 5; claims 9-17 -----	1-6
X	US 2010/015200 A1 (MCCLAIN JAMES B [US] ET AL) 21 January 2010 (2010-01-21) paragraphs [0079], [0031], [0393]; claim 4 -----	16,20
X	US 2004/062592 A1 (SHEKALIM AVRAHAM [IL] ET AL) 1 April 2004 (2004-04-01) paragraph [0014]; claims 1-18 -----	16-20
A		7-15

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 application or patent 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
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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
 Schneider, Aurore

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2015/025795

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 all searchable 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 report covers 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.:

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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2015/025795

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 2010069854	A1	18-03-2010	EP 2179750 A2	28-04-2010
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			US 2008206442 A1	28-08-2008
			WO 2004028579 A2	08-04-2004

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-6

A method for applying an antimicrobial coating on catheter tubing, the method comprising:
applying a solution containing a solvent and an antimicrobial agent to a surface of catheter tubing;
allowing the solvent to evaporate to leave behind a coating of the antimicrobial agent on the surface of the catheter tubing; and applying a lubricant overtop the coating, the lubricant limiting the rate of diffusion of the antimicrobial agent from the coating once the surface of the catheter tubing is subject to a fluid.

2. claims: 7-20

A method for applying an antimicrobial coating to catheter tubing in a pattern, the method comprising:
applying an antimicrobial coating over an outer surface of catheter tubing; and passing the catheter tubing through a die to remove a portion of the antimicrobial coating from the outer surface such that a pattern of antimicrobial coating remains on the outer surface after the catheter tubing has passed through the die and a catheter tubing comprising:
an outer surface having a circumference; and
an antimicrobial coating applied to the outer surface in a pattern such that the pattern does not cover the entire circumference of the outer surface.
