

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference DHP67867P.WOP	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/GB2014/051813	International filing date (<i>day/month/year</i>) 12 June 2014 (12-06-2014)	(Earliest) Priority Date (<i>day/month/year</i>) 13 June 2013 (13-06-2013)
Applicant THE NOTTINGHAM TRENT UNIVERSITY		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- the international application in the language in which it was filed
 a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b))

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (See Box No. II)

3. **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- the text is approved as submitted by the applicant
 the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- the text is approved as submitted by the applicant
 the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 2a

- as suggested by the applicant
 as selected by this Authority, because the applicant failed to suggest a figure
 as selected by this Authority, because this figure better characterizes the invention

b. none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2014/051813

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61M1/10 A61F2/00
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)
A61M 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 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 2004/230090 A1 (HEGDE ANANT V [US] ET AL) 18 November 2004 (2004-11-18) dielectric elastomer; paragraphs [0116], [0128] paragraphs [0196] - [0197]; figures 26,27 -----	1-15
A	WO 2004/086946 A2 (PAVAD MEDICAL INC [US]; HEGDE ANANT V [US]; BUCH WALLY S [US]; KARABEY) 14 October 2004 (2004-10-14) the whole document spring 556; figure 5 -----	1
A	US 2008/262341 A1 (BOYDEN EDWARD S [US] ET AL) 23 October 2008 (2008-10-23) dielectric elastomers; paragraphs [0505] - [0506] -----	1
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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 30 September 2014	Date of mailing of the international search report 09/10/2014
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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 Van Veen, Jennifer
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INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2014/051813

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 2012/060355 A1 (TSUCHIKAWA YUTAKA [JP] ET AL) 15 March 2012 (2012-03-15) the whole document -----	8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2014/051813

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 2004230090	A1	18-11-2004	US 2004230090 A1	18-11-2004
			US 2007213579 A1	13-09-2007
			US 2008132749 A1	05-06-2008
			WO 2004078025 A2	16-09-2004

WO 2004086946	A2	14-10-2004	US 2004249236 A1	09-12-2004
			WO 2004086946 A2	14-10-2004

US 2008262341	A1	23-10-2008	US 2008262341 A1	23-10-2008
			WO 2009025849 A1	26-02-2009

US 2012060355	A1	15-03-2012	JP 2012065426 A	29-03-2012
			US 2012060355 A1	15-03-2012
