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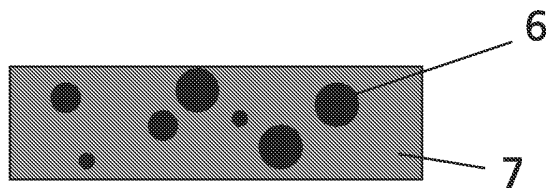
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MULTIPHASE BIOCOMPATIBLE SEMI-PERMEABLE MEMBRANE FOR BIOSENSORS



(57) Abstract: This invention relates to a novel two phase biocompatible semi-permeable membrane for biosensors and more particularly to a homogenous membrane for use in in-vivo sensing of glucose by an enzyme. The membrane comprises of a continuous hydrophilic phase of water swellable polyurethane having discrete particles of polydimethyl siloxane dispersed therein. Furthermore, a membrane having good properties for use as the outer membrane in a biosensor continuous determination of the blood glucose level in vivo, can

be prepared by spraying of a polymer solution in a big number of spraying steps, for example, more than 20 steps.

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2005/054000

A. CLASSIFICATION OF SUBJECT MATTER
B01D69/14 B01D71/54 A61B5/00 C12Q1/00

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)
B01D A61B C12Q G01N

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, PAJ, COMPENDEX, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	<p>US 4 484 987 A (GOUGH ET AL) 27 November 1984 (1984-11-27) cited in the application</p> <p>abstract</p> <p>figure 2 columns 1-5</p> <p style="text-align: center;">----- -/--</p>	<p>1-4, 6-10,12, 16-19, 24-26,31 5,11, 13-15, 17,18, 20-30</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

"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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INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2005/054000

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/217966 A1 (TAPSAK MARK A ET AL) 27 November 2003 (2003-11-27)	1-4,7,8, 10,12, 16,19, 24-26,31
A	abstract figure 3 pages 1-6 example 1	11, 13-15, 23,27-30
Y	----- EP 0 535 898 A (ELI LILLY AND COMPANY) 7 April 1993 (1993-04-07) cited in the application	6,9,17, 18
A	abstract pages 1-4	24-26,31
A	----- US 5 882 494 A (VAN ANTWERP ET AL) 16 March 1999 (1999-03-16) cited in the application the whole document	1-31
A	----- BINDRA D S: "DESIGN AND IN VITRO STUDIES OF A NEEDLE-TYPE GLUCOSE SENSOR FOR SUBCUTANEOUS MONITORING" ANALYTICAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY. COLUMBUS, US, vol. 63, no. 17, 1 September 1991 (1991-09-01), pages 1692-1696, XP000248936 ISSN: 0003-2700 cited in the application the whole document	1-31
A	----- US 5 284 140 A (ALLEN ET AL) 8 February 1994 (1994-02-08) the whole document -----	1-31

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2005/054000

Box 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 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 fee, this Authority did not invite payment of any additional fee.
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.:

1-31, 33

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- 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: 1-31,33

a membrane comprising a continuous phase of one polymer and discrete domains of a second high molecular weight polymer with high oxygen permeability, and where the second high molecular weight polymer has a domain size in the range from about 20 μ m to about 1 nm; an implantable biosensor for measuring the reaction of an analyte and oxygen comprising said membrane

2. claim: 32

a method for placing a layer consisting of two immiscible polymers on a substrate.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2005/054000

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