

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 62125WO003	FOR FURTHER ACTION		See item 4 below
International application No. PCT/US2007/073097	International filing date (<i>day/month/year</i>) 10 July 2007 (10.07.2007)	Priority date (<i>day/month/year</i>) 28 July 2006 (28.07.2006)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant 3M INNOVATIVE PROPERTIES COMPANY			

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 03 February 2009 (03.02.2009)
Facsimile No. +41 22 338 82 70	Authorized officer <p style="text-align: center; font-size: 1.2em;">Philippe Becamel</p> e-mail: pt12.pct@wipo.int

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:
GALLO, Blizabeth A.

3M Center Office of Intellectual Property Counsel Post Office
Box 33427 Saint Paul Minnesota 55133-3427 USA

Date of mailing
(day/month/year) **29 NOVEMBER 2007 (29.11.2007)**

Applicant's or agent's file reference 62125WO003	FOR FURTHER ACTION See paragraph 2 below
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International application No. PCT/US2007/073097	International filing date (day/month/year) 10 JULY 2007 (10.07.2007)	Priority date(day/month/year) 28 JULY 2006 (28.07.2006)
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International Patent Classification (IPC) or both national classification and IPC

A61L 27/50(2006.01)i, A61L 27/34(2006.01)i

Applicant

3M INNOVATIVE PROPERTIES COMPANY

1. This opinion contains indications relating to the following items:
- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application
2. **FURTHER ACTION**
- If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.
- If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.
3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Date of completion of this opinion 29 NOVEMBER 2007 (29.11.2007)	Authorized officer KIM Sang Woo Telephone No. 82-42-481-8384 
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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2007/073097

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established 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))
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:
 - a. type of material
 - a sequence listing
 - table(s) related to the sequence listing
 - b. format of material
 - on paper
 - in electronic form
 - c. time of filing/furnishing
 - contained in the international application as filed.
 - filed together with the international application in electronic form.
 - furnished subsequently to this Authority for the purposes of search.
4. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-12, 14-18, 22, 23	YES
	Claims	13, 19-21	NO
Inventive step (IS)	Claims	1-12, 14-18, 22, 23	YES
	Claims	13, 19-21	NO
Industrial applicability (IA)	Claims	1-23	YES
	Claims	None	NO

2. Citations and explanations :

1. Citations

The following documents cited in the ISR have been considered for the purpose of this written opinion:

D1: LENDLEIN A. et al., Clinical Hemorheology and Microcirculation. 2005, Vol. 32, No. 2, pp. 105-116.

D2: US 5506300 A (WARD, R. S. et al.) 09 April 1996

2. Novelty & Inventive Step

2.1. Claims 13 and 19-21

Claims 13 and 19-21 of the present invention relate to an article comprising a polymeric member including a microstructured surface and a shape memory polymer.

D1 discloses shape memory polymers as stimuli-sensitive implant materials. The polymer comprises a switching crystallizable segment (poly(ϵ -caprolactone)diol) and a soft segment (poly(*n*-butyl acrylate)). (page 113, paragraph 2)

D2 discloses shape memory polymers such as polyester-polyether block copolymer, polyether-polyamides block copolymer, etc. These shape memory polymers are used for biomedical application. (see column 4, line 40 - column 5, line 19)

Since the shape memory polymers of D1 or D2 have microstructured surfaces from the hard and the soft segments of the polymers in nature, all of the technical features of claims 13 and 19-21 are disclosed in D1 or D2. So, claims 13 and 19-21 are anticipated and obvious to a person skilled in the art.

Therefore, claims 13 and 19-21 are not considered to be novel under PCT Article 33(2) and do not fulfill the criteria set forth in PCT Article 33(3).

2.2 Claims 1-12, 14-18, 22 and 23

Claims 1-12, 14-18, 22 and 23 relate to an article comprising a polymeric member including a microstructured surface and a shape memory polymer. The shape memory polymer comprises a copolymer network, comprising a reaction product of a free radically polymerizable siloxane and at least one (metha)acrylate monomer. The (metha)acrylate monomer forms a homopolymer having a glass transition temperature, a melting temperature, or both greater than about 40°C, when it is homopolymerized.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2007/073097

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

While claims 4-7, quoting claim 2, describe a telechelic siloxane, the telechelic siloxane is not written in the cited claim 2. Therefore, claims 4-7 are not clear (PCT Article 6).

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2007/073097

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of :

Box No V.

None of the cited documents teach or fairly suggest an article comprising a shape memory polymer disclosed in the present invention.

Therefore, claims 1-12, 14-18, 22 and 23 appear to be novel and to involve an inventive step in the sense of PCT Article 33(2)-(3).

3. Industrial Applicability

The subject matter of claims 1-23 is considered to be industrially applicable under PCT Article 33(4).