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(71) Applicant: SMITH & NEPHEW, INC. [US/US]; 150  
Minuteman Road, Andover, MA 01810 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): ROSE, John  
[US/US]; 947 Hardwood View Cove, Collierville, TN  
(US). BROWN, Malcolm [GB/GB]; 89 Wrenbeck Drive,  
Otley, Yorkshire (GB). MACAULEY, Nicola [GB/GB];  
14a Swarthdale, Haxby, Yorkshire (GB). HALL, Mike  
[—/GB]; 54 Lancaster Road, Linthorpe, Middlesbrough  
(GB).

(74) Agents: HAINER, JR., Norman, F. et al.; 150 Minute-  
man Road, Andover, MA 01810 (US).

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(54) Title: FIBER REINFORCED COMPOSITE MATERIAL

(57) Abstract: The present disclosure relates to a fiber reinforced composite material. In an embodiment, the composite material includes a PLLA fiber material and a matrix material that does not have the same chemical element composition as the fiber material. Other fiber reinforced composite materials are also disclosed.



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# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2007/086067

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> INV. A61B17/58      A61L31/12      C08J5/04      C08J5/08				
According to International Patent Classification (IPC) or to both national classification and IPC				
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) C08J A61B 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 practical, search terms used) EPO-Internal, WPI Data				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
A	EP 0 299 004 A (MATERIALS CONSULTANTS OY [FI] BIOCON OY [FI]) 18 January 1989 (1989-01-18) the whole document	1-39,42, 43		
A	DE 29 47 985 A1 (VNII ISPYTATEL MED TECH [SU]) 17 September 1981 (1981-09-17) the whole document	1-39,42, 43		
A	DE 28 17 778 A1 (FIRESTONE TIRE & RUBBER CO) 23 November 1978 (1978-11-23) the whole document	1-39,42, 43		
A	WO 2006/114483 A (BIORETEC OY [FI]; TOERMAELAE PERTTI [FI]; HUTTUNEN MIKKO [FI]; ASHAMMA) 2 November 2006 (2006-11-02) the whole document	1-39,42, 43		
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.				
* Special categories of cited documents :				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; vertical-align: top;">                     *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                 </td> <td style="width: 50%; border: none; vertical-align: top;">                     *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.                      *&amp;* document member of the same patent family                 </td> </tr> </table>			*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
*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  <p style="text-align: center; font-size: 1.2em;">6 August 2008</p>		Date of mailing of the international search report  <p style="text-align: center; font-size: 1.2em;">13/08/2008</p>		
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# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2007/086067

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 590 656 A (UNION CARBIDE CHEM PLASTIC [US]; OWENS CORNING FIBERGLAS TECH [US]) 6 April 1994 (1994-04-06) the whole document -----	23-39, 43

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2007/086067

## 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 report covers only those claims for which fees were paid, specifically claims Nos.:  
  
1-39, 42, 43
  
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.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

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

1. claims: 1-22,42

Fiber reinforced composite material comprising a PLLA fiber material and a matrix material that does not have the same chemical element composition as the fiber material  
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2. claims: 23-39,43

Fiber reinforced composite material comprising a matrix, a glass fiber material and a degradation controlling agent  
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3. claim: 40

Fiber reinforced composite material comprising a matrix material, a fiber material and a degradation controlling agent  
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4. claim: 41

Fiber reinforced composite material comprising a matrix material and a glass fiber material having a tensile strength of between 300 and 1200 MPa.  
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5. claim: 44

Fiber reinforced composite material comprising a PLLA fiber material having a molecular weight of between 290 000 and 516 000 g/mol and a matrix material  
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/086067

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