



(51) International Patent Classification:

B29C 70/20 (2006.01) *B29C 47/00* (2006.01)
B29B 9/14 (2006.01) *B32B 5/24* (2006.01)
C08J 5/04 (2006.01)

(21) International Application Number:

PCT/SE2008/051526

(22) International Filing Date:

19 December 2008 (19.12.2008)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0702851-7 21 December 2007 (21.12.2007) SE

(71) Applicant and

(72) Inventor: **BOLDIZAR, Antal** [SE/SE]; Örnvägen 9,
S-511 42 Kinnahult (SE).

(74) Agent: **Valea AB**; Lindholmspiren 5, S-417 56 Göteborg
(SE).

(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, BR, BW, BY, BZ,

CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ,
EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO,
NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG,
SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ,
TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG).

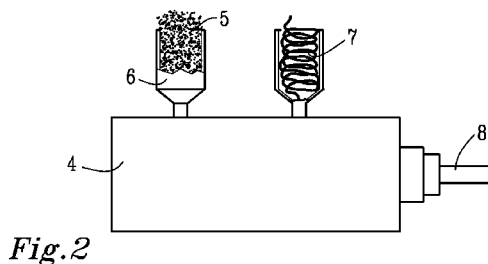
Published:

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

(88) Date of publication of the international search report:

27 August 2009

(54) Title: METHOD OF MAKING A POLYMER / NATURAL FIBER COMPOSITE PELLET AND/OR A COUPLING
AGENT / NATURAL FIBER PELLET AND THE PELLET MADE BY THE METHOD



(57) Abstract: A method of making a polymer / natural fiber composite pellet and/or a coupling agent / natural fiber pellet and the pellet made by the method. The pellet is intended to be used in molded structural composites comprising thermoplastic polymers and fibers. It is produced by carding or combing the natural fibers and to form a sliver or roving therefrom, which is combined with the polymer and/or coupling agent in a melted or dissolved state. The fibers may either be dispersed in the polymer through an extrusion process or be present as an inner core surrounded by an outer sheath of polymer and/or coupling agent.



WO 2009/082350 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2008/051526

A. CLASSIFICATION OF SUBJECT MATTER		
<p>IPC: see extra sheet According to International Patent Classification (IPC) or to both national classification and IPC</p>		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
IPC: B29C, B29B, C08J, B32B		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
SE,DK,FI,NO classes as above		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
EPO-INTERNAL, WPI DATA, PAJ, TXTE		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5595696 A (SCHLARB A. ET AL), 21 January 1997 (21.01.1997), column 2, line 8 - line 64, figure 2 --	1-11
X	WO 0176841 A2 (DSM N.V.), 18 October 2001 (18.10.2001), page 1, line 32 - line 36; page 2, line 11 - line 13; page 3, line 11 - line 12, page 4, line 16 - line 21 --	1,3-8,10-12, 16-18
X	WO 0183598 A2 (OWENS CORNING ET AL), 8 November 2001 (08.11.2001), page 6, line 29 - page 7, line 32; page 13, line 14 - line 15, figures 1-3, claims 1-4,17-22 --	1,3-8,10-12, 16-18
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
<p>* Special categories of cited documents:</p> <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>		
Date of the actual completion of the international search		Date of mailing of the international search report
9 June 2009		11-06-2009
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86		Authorized officer John Sjöberg/Eö Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE2008/051526

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9605347 A1 (SKILLICORN, PAUL, W. ET AL), 22 February 1996 (22.02.1996), page 16, line 8 - page 17, line 12; page 29, line 5 - line 14; page 30, line 24 - page 31, line 6, claim 32	1,3-8,10,11, 13-15,19
Y	--	20
Y	DE 19835983 A1 (J. RETTENMAIER & SÖHNE GMBH + CO), 17 February 2000 (17.02.2000), page 2, line 4 - line 37; page 4, line 2 - line 39	20
X	DE 10349110 B3 (DAIMLERCHRYSLER AG), 9 December 2004 (09.12.2004), paragraphs [0007], [0009], [0013], [0021]	1-20
	-- -----	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2008/051526

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 extra 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 any 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

International application No.
PCT/SE2008/051526

- I) Claims 1 and 2 with relating claims 3-11 directed to a method of making a polymer-natural fibre composite pellet using extrusion.
- II) Claims 1 and 12 with relating claims 3-8, 10, 11 as well as independent claim 16 and relating claims 17 and 18 directed to a method of making a polymer - natural fibre composite pellet by covering the fibre part with the polymer, and a pellet manufactured according to the method.
- III) Independent claims 13 and 19 with relating claims 14, 15 and 20 directed to a method of making a coupling agent - natural fibre composite pellet by covering the fibre part with the coupling agent, and a pellet manufactured according to the method.

International patent classification (IPC)**B29C 70/20** (2006.01)**B29B 9/14** (2006.01)**C08J 5/04** (2006.01)**B29C 47/00** (2006.01)**B32B 5/24** (2006.01)**Download your patent documents at www.prv.se**

The cited patent documents can be downloaded:

- From "Cited documents" found under our online services at www.prv.se (English version)
- From "Anförda dokument" found under "e-tjänster" at www.prv.se (Swedish version)

Use the application number as username. The password is **RRBICIUXUN**.

Paper copies can be ordered at a cost of 50 SEK per copy from PRV InterPat (telephone number 08-782 28 85).

Cited literature, if any, will be enclosed in paper form.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/SE2008/051526

US	5595696	A	21/01/1997	DE	4419579 A	07/12/1995
				EP	0685520 A	06/12/1995

WO	0176841	A2	18/10/2001	AU	8931401 A	23/10/2001
				BR	0110016 A	30/12/2003
				CA	2406263 A	18/10/2001
				EP	1272320 A	08/01/2003
				JP	2003530242 T	14/10/2003
				MX	PA02010188 A	10/03/2003
				NL	1014918 C	16/10/2001

WO	0183598	A2	08/11/2001	AU	5364101 A	12/11/2001
				EP	1287059 A	05/03/2003
				JP	2003531936 T	28/10/2003
				MX	PA02010295 A	25/04/2003

WO	9605347	A1	22/02/1996	NONE		

DE	19835983	A1	17/02/2000	NONE		

DE	10349110	B3	09/12/2004	NONE		
