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Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

Published:

— with international search report (Art. 21(3))
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

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

31 August 2023 (31.08.2023)

(54) Title: COMPOSITE CELLULOSIC PRODUCTS AND PROCESSES FOR MAKING THE SAME.

(57) Abstract: Composite cellulosic products and processes for making the same. In some embodiments, the composite cellulosic product can include a plurality of cellulosic substrates and an at least partially cured binder. Prior to curing, the binder can include a mixture formed by combining magnesium oxide, water, and magnesium chloride. A weight ratio of the magnesium oxide to the magnesium chloride in the binder can be at least 2.2:1 to 8.5:1.



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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. B27N3/00 B27N9/00
ADD. B27N1/00 B27N1/02

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)
B27N C04B

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.
X	US 2015/151449 A1 (BIRKELAND MICHAEL J [US] ET AL) 4 June 2015 (2015-06-04) paragraphs [0007], [0008], [0013], [0027], [0030], [0035], [0039], [0043], [0046], [0055]; claims 1, 3, 14, 15, 18-20; figure 4A -----	1-5, 10, 11, 20
X	DATABASE WPI Week 201772 Thomson Scientific, London, GB; AN 2017-63262Y XP002809346, & CN 107 127 841 A (DAN Z) 5 September 2017 (2017-09-05) abstract -/--	1-5, 10, 11, 20

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 application or patent 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

25 May 2023

Date of mailing of the international search report

24/07/2023

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2022/080606

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	& CN 107 127 841 B (SHI ZHI) 10 April 2020 (2020-04-10) abstract; claims 1,2 page numbers relate to automatic translation numbering; pages 1,4 -----	1-5, 10, 11, 20

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2022/080606

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 all searchable 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.:

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.:
2-5, 10, 11, 20 (completely); 1 (partially)

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

Information on patent family members

International application No

PCT/US2022/080606

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2015151449 A1	04-06-2015	CN 106164207 A	23-11-2016
		US 2015151449 A1	04-06-2015
		WO 2015084766 A1	11-06-2015

CN 107127841 A	05-09-2017	NONE	

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 2-5, 10, 11, 20 (completely); 1 (partially)

Composite cellulosic product and process for making composite cellulosic product.

2. claims: 6-9 (completely); 1 (partially)

Composite cellulosic product with a binder comprising specific inorganic compounds.

3. claims: 12-19 (completely); 1 (partially)

Composite cellulosic product with a binder comprising specific organic compounds.
