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Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

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21 March 2013

(54) Title: NANO CARBON REINFORCED COMPOSITE AND A METHOD OF MANUFACTURING THE SAME

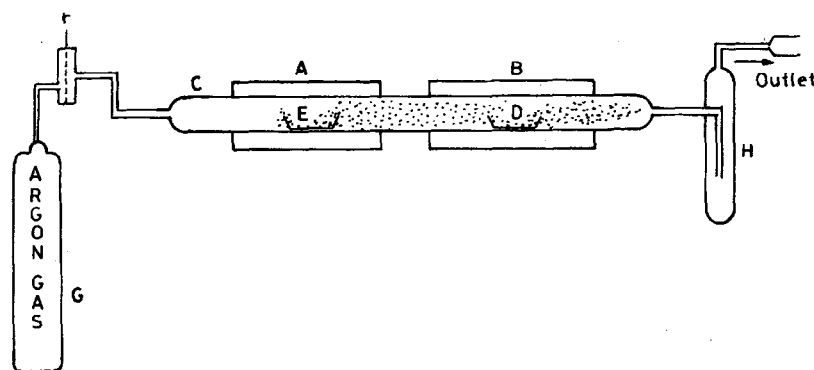


FIG.2

(57) Abstract: The present invention relates to a composite material and method of manufacturing the same. In particular to carbon Nano material reinforced composite comprising of carbon Nano material, calcium Nano scaled material, resin material such as phenolic resin or modified form thereof including epoxy modified phenolic resin, alkyd modified phenolic resin and natural fiber or any modified/ processed form thereof; wherein the carbon Nano material and calcium Nano scaled material are dispersed in the said resin material along with the said natural fiber and / or any modified form thereof. Along with the Nano scaled calcium material, optionally, other Nano scaled material such as Nano zinc oxide, Nano alumina, Nano silica, Nano Iron Oxide, Nano Silver, Nano copper, or Nano Zirconium, or any combination thereof can be used as per the requirement. The composite of the present invention has strength similar to or better than the plywood.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IN2012/000304

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B82Y 30/00 (2012.01)

USPC - 977/700

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)

IPC(8) - B29B 7/90; 15/08; B29C 70/00; B82B 3/00; B82Y 30/00; 40/00; C08K 3/04 (2012.01)

USPC - 252/511; 428/323, 368; 524/495; 977/700, 701, 707, 742

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)

Orbit.com, Google Patents, ProQuest, Google

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2010/0144932 A1 (KWON et al) 10 June 2010 (10.06.2010) entire document	1-3
Y	CN 101735702 A (ZIPING) 16 June 2010 (16.06.2010) entire document	1-3
Y	US 2008/0217807 A1 (LEE et al) 11 September 2008 (11.09.2008) entire document	2
Y	US 2009/0318606 A1 (SHEIKHALESAMI et al) 24 December 2009 (24.12.2009) entire document	3
Y	US 2003/0039816 A1 (WANG et al) 27 February 2003 (27.02.2003) entire document	5, 9, 10
Y	CN 101298534 A (KUNHU et al) 05 November 2008 (05.11.2008) entire document	5, 9, 10
Y	US 5,221,288 A (KAMATA et al) 22 June 1993 (22.06.1993) entire document	5, 9, 10
A	Plastics: Dual-Structure Polymers. Machine Design. February 8, 1996. [retrieved on 2012-11-02]. Retrieved from ProQuest. <URL: http://search.proquest.com/docview/217165626/13A372BFABC7B336883/1?accountid=142944 >. entire document	1-3, 5-10
A	LV et al. Effect of Zeolite 5A on the Crystalline Behavior of Polypropylene (PP) in PP/[beta]-Nucleating Agent System. Polymer Composites. December 2008. [retrieved on 2012-11-02]. Retrieved from ProQuest. <URL: http://search.proquest.com/docview/199157806/13A372E02346347EC9E/1?accountid=142944 >. entire document	1-3, 5-10

☐ Further documents are listed in the continuation of Box C.



* 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

05 November 2012

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IN2012/000304

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.: 4
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:

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 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.:

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.