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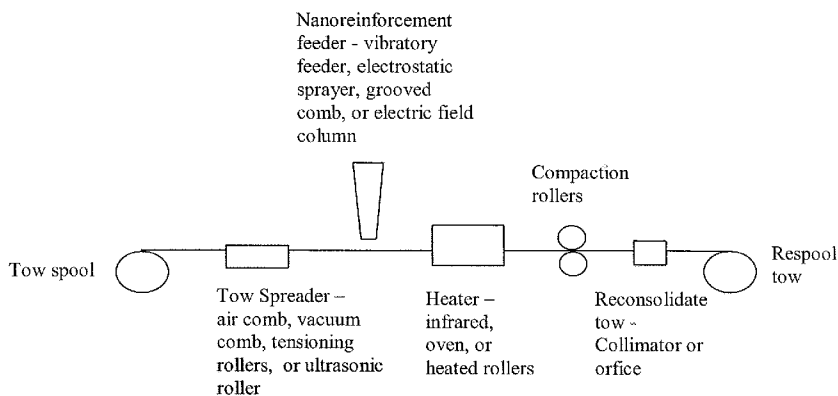
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Declarations under Rule 4.17:

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

[Continued on next page]

(54) Title: MODIFICATION OF REINFORCING FIBER TOWS USED IN COMPOSITE MATERIALS BY USING NANOREINFORCEMENTS



Nanoreinforcement coating process

(57) Abstract: Methods for enhancing the strength and stiffness of fibers, including nanoreinforced fibers and fiber tows, composite materials including the nanoreinforced fibers and tows, and articles of manufacture including the composite materials, are disclosed. The methods involve adhering random or aligned nanoreinforcement materials, such as carbon nanotubes, nanofibers, graphene plates, nanowires, nanoparticles, into or onto a spread carbon tow or yarn to form modified fibers wherein nanoreinforcement is adhered or trapped within the carbon tow. The carbon nanotubes or nanofibers can be aligned. Carbon fiber tows including the modified carbon fibers can be processed or woven for impregnation with a thermoset resin or thermoplastic to form a composite structure. The performance increase of the modified fibers relative to the unmodified fibers can be greater than the weight increase caused by the modification. Increased fiber stiffness and strength can result in a significant weight saving.

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— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER INV. D06M11/74 D06M23/08 B64D45/02 C04B35/83 D06M23/06		
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) D06M B64D 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 practical, 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	DATABASE WPI Week 200415 Derwent Publications Ltd., London, GB; AN 2004-147589 XP002455574 & JP 2003 239171 A (TORAY IND INC) 27 August 2003 (2003-08-27) abstract <p align="center">----- -/--</p>	1-50, 52-67
<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 :		
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 align="center">18 October 2007</p>		Date of mailing of the international search report <p align="center">31/10/2007</p>
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer <p align="center">Fiocco, Marco</p>

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 03/076703 A (HONEYWELL INT INC [US]) 18 September 2003 (2003-09-18)</p> <p>page 6, line 20 - line 25 page 7, line 6 - line 19 page 11, line 9 - line 16 page 12, line 6 - line 7 example</p>	<p>1-6, 12-14, 22,23, 37-50, 52-56, 58-61, 63-66</p>
A	<p>----- GB 2 155 062 A (FIBERITE CORP) 18 September 1985 (1985-09-18) the whole document -----</p>	<p>49-67</p>

INTERNATIONAL SEARCH REPORT

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