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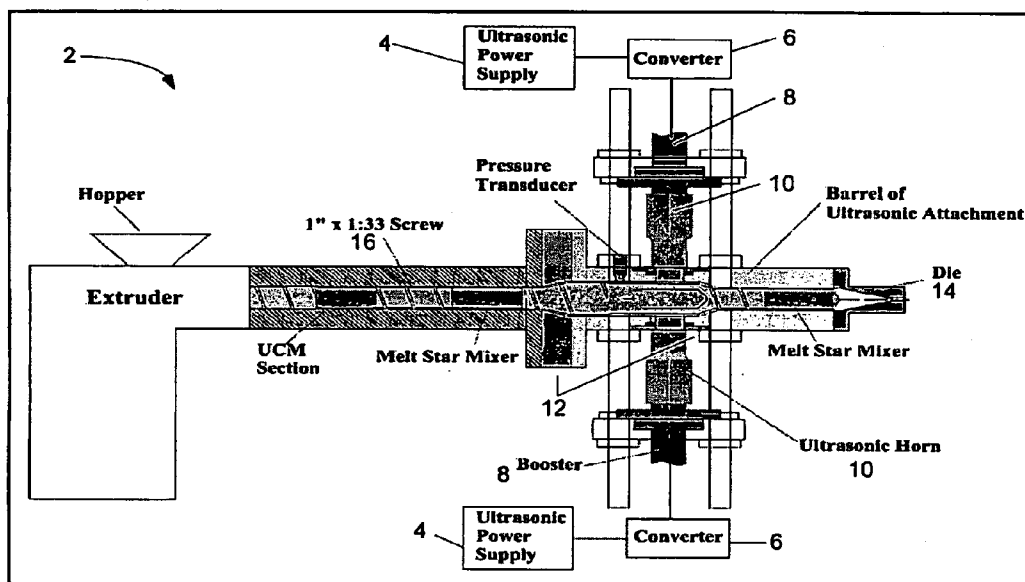
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(54) Title: **ULTRASOUND ASSISTED CONTINUOUS PROCESS FOR DISPERSION OF NANOFIBERS AND NANOTUBES IN POLYMERS**



(57) Abstract: The present invention relates to processes for producing high performance polymer composites via ultrasonic treatment after initial mixing. These high performance polymer composites made from a combination of polymer and nanofibers and/or nanotubes. The ultrasonic treating method of the disclosed allows a more highly dispersed polymer composite mixture which provides increased thermal, mechanical and electrical properties.

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/13196

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B01F 11/00; B28C 5/48; B82B 1/00 (2007.10)

USPC - 366/108; 977/900; 977/902

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)

USPC- 366/108; 977/900; 977/902

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)  
 GOOGLE SCHOLAR, GOOGLE PATENT and WEST (PGPB,USPT,EPAB,JPAB): nanofiber, MWNT, carbon nanotube, fullerene, polymer, ultrasonic, sonication, ultrasound, ultrasonically, dispersion, polyetherimide, thermoplastic rubber, thermoset resin, KHz, twin screw extruder, single screw extruder, continuous mixers

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005/0070657 A1 (ELKOVITCH et al) 31 Mar 2005 (31.03.2005), para [0015], [0127], [0128], [0145], [0160]; claims 1, 38, 41	1-29
Y	HIGGINS, "CARBON NANOFIBER-POLYMER COMPOSITES FOR ELECTRONIC APPLICATIONS" May 2006 Retrieved from the Internet 27 October 2007 < <a href="http://www.ohiolink.edu/etd/send-pdf.cgi/Higgins%20Bernadette%20Ann.pdf/acc_num=akron1143655787">http://www.ohiolink.edu/etd/send-pdf.cgi/Higgins%20Bernadette%20Ann.pdf/acc_num=akron1143655787</a> >; (05.2006), pgs 2, 4 and 9	1-29
Y	US 2003/0124211 A1 (ISAYEV et al.) 03 July 2003 (03.07.2003), abstract, para [0067], [0036], [0047], [0029], [0032], [0045], [0057]	11, 12, 15-18, 21-23
A	US 2006/0041104 A1 (AIT-HADDOU et al) 23 Feb 2006 (23.02.2006), entire document	1-29

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


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