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(54) Title: HIGHLY TRANSPARENT AND CONDUCTIVE CARBON NANOTUBE COATINGS

(57) Abstract: The present invention is directed to carbon nanotube (CNT) transparent conductive coatings and methods of improving the aggregate performance measure of resistance and transmittance by employing the electric field effect, chemical doping, nanotube alignment, and CNT linking via a metal atom, cluster, or nanoparticle.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/63343

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B05D 3/00; H01M 8/10; H01M 4/58 (2008.04)

USPC - 427/444; 429/33; 429/231.8

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: 427/444; 429/33; 429/231.8

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 136/256; 136/252; 427/180 428/209Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WEST, Google Patent, Google Scholar, and Web: nanotube, dopant, conductivity, film, transparency, ohm, volume conductivity, nafion

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 2005/0221016 A1 (GLATKOWSKI et al.) 6 Oct 2005 (06.10.2005); para [0002], [0007], [0008], [0015], [0018]-[0021], [0024], [0025], [0027], [0046], [0069], [0074], [0076]-[0080], [0087], Table 1, Table III, Table IV	1, 2, 6-10, 13, 14, 23, 25, 26, 30-34 and 60-62 3-5, 11, 12, 15-22, 24, 27-29, 39-59 and 63
Y	US 2005/0221141 A1 (HAMPDEN-SMITH et al.) 6 Oct 2005 (06.10.2005); para [0017], [0109], [0173], [0176], [0194], [0199], [0201], [0244] and [0245]	3, 4, 15-18, 39-41 and 46-59
Y	US 2005/0070658 A1 (GHOSH et al.) 31 Mar 2005 (31.03.2005); para [0002], [0007], [0008], [0136], Table 2, Fig 1	5, 11, 12, 43 and 48
Y	US 2005/0208668 A1 (BRUNO et al.) 22 Sep 2005 (22.09.2005); para [0078]-[0081] and [0107]	19 and 22
Y	US 2005/0033015 A1 (PEI) 10 Feb 2005 (10.02.2005); para [0170]	20 and 21
Y	US 2004/0032194 A1 (KOGA et al.) 19 Feb 2004 (19.02.2004); para [0064]	24
Y	US 2004/0197546 A1 (RINZLER et al.) 7 Oct 2004 (07.10.2004); para [0019], [0021] and [0038]-[0040]	27-29
Y	US 2003/0077515 A1 (CHEN et al.) 24 Apr 2003 (24.04.2003); para [0038], [0040], [0050], [0053]-[0057], [0060]-[0062], [0065], [0066], [0083], [0086], [0088], [0089], [0093], [0094], [0103] and [0106]	35-38, 45, 50-53, 56, 58 and 63

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

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"&" document member of the same patent family

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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.
Y	US 6,139,919 A (EKLUND et al.) 31 Oct 2000 (31.10.2000); col 3, ln 7-24	35-38, 54 and 57
Y	US 2004/0023087 A1 (REDMOND) 5 Feb 2004 (05.02.2004); para [0054], [0072], [0073], [0092], [0094], [0095], [0100]	42-44