

Title (en)
FUNCTIONALIZED SINGLE WALLED CARBON NANOTUBES

Title (de)
FUNKTIONALISIERTE EINWANDIGE KOHLENSTOFFNANORÖHRCHEN

Title (fr)
NANOTUBES DE CARBONE A SIMPLE PAROI FONCTIONNALISES

Publication
EP 1776125 A4 20120125 (EN)

Application
EP 05857879 A 20050623

Priority

- US 2005022413 W 20050623
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Abstract (en)
 [origin: WO2006130150A2] Graphitic nanotubes, which includes tubular fullerenes (commonly called "buckytubes") and fibrils, which are functionalized by chemical substitution or by adsorption of functional moieties. More specifically the invention relates to single walled carbon nanotubes having diameters than 5 nanometers which are uniformly or non-uniformly substituted with chemical moieties or upon which certain cyclic compounds are adsorbed and to complex structures comprised of such functionalized nanotubes linked to one another. The invention also relates to methods for introducing functional groups onto the surface of such nanotubes. The invention further relates to uses for functionalized single walled carbon nanotubes.

IPC 8 full level
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Citation (search report)

- [X] WO 9732571 A1 19970912 - HYPERION CATALYSIS INT [US], et al
- [X] WO 9618059 A1 19960613 - HYPERION CATALYSIS INT [US]
- [A] HONGJIE DAI ET AL: "SINGLE-WALL NANOTUBES PRODUCED BY METAL-CATALYZED DISPROPORTIONATION OF CARBON MONOXIDE", CHEMICAL PHYSICS LETTERS, ELSEVIER BV, NL, vol. 260, no. 3/04, 27 September 1996 (1996-09-27), pages 471 - 475, XP000610009, ISSN: 0009-2614, DOI: 10.1016/0009-2614(96)00862-7
- [X] GEMA DE LA TORRE ET AL: "A survey on the functionalization of single-walled nanotubes. The chemical attachment of phthalocyanine moieties; A survey on the functionalization of single-walled nanotubes", NANOTECHNOLOGY, IOP, BRISTOL, GB, vol. 14, no. 7, 1 July 2003 (2003-07-01), pages 765 - 771, XP020067591, ISSN: 0957-4484, DOI: 10.1088/0957-4484/14/7/312
- [A] R.J. CHEN ET AL.: "Noncovalent sidewall functionalization of Single-walled carbon nanotubes for protein immobilization", J. AM. CHEM. SOC., vol. 123, 18 April 2001 (2001-04-18), pages 3838 - 3839, XP002665834
- See references of WO 2006130150A2

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