

Title (en)
CARBON NANOTUBES COMPRISING HYDROXY GROUPS, METHOD FOR THE PRODUCTION THEREOF AND POLYURETHANE POLYMERS COMPRISING SAID CARBON NANOTUBES

Title (de)
HYDROXYGRUPPEN UMFASSENDE KOHLENSTOFFNANORÖHREN, VERFAHREN ZU DEREN HERSTELLUNG UND DIESE KOHLENSTOFFNANORÖHREN UMFASSENDE POLYURETHANPOLYMERE

Title (fr)
NANOTUBES DE CARBONE COMPRENANT DES GROUPES HYDROXY, PROCÉDÉ POUR LEUR PRÉPARATION, ET POLYMÈRES DE POLYURÉTHANNE COMPRENANT CES NANOTUBES DE CARBONE

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Application
EP 10711355 A 20100330

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Abstract (en)
[origin: EP2239290A1] Hydroxy group-containing carbon nanotube, is claimed, where the surface of the carbon nanotube comprises hydroxyalkyl ester groups (aa) and/or (bb) that are covalently bounded on the surface of the carbon nanotube. Hydroxy group-containing carbon nanotube, is claimed, where the surface of the carbon nanotube comprises hydroxyalkyl ester groups of formula ((CNT)-C(=O)-O-CH(R1)-CH(OH)-R2) (aa) and/or ((CNT)-C(=O)-O-CH(R2)-CH(R1)-OH) (bb) that are covalently bounded on the surface of the carbon nanotube. (CNT) : surface of the carbon nanotube; and R1, R2 : H, alkyl or aryl, preferably H, CH 3, C 2H 5, n-propyl, iso-propyl, n-butyl, sec-butyl, iso-butyl, tert-butyl and/or phenyl or -(CH 2) 4-. Independent claims are included for: (1) producing the hydroxy group-containing carbon nanotube, comprising (a) providing carbon nanotubes, whose surfaces are covalently bounded to carboxyl groups, and (b) reacting the obtained carbon nanotubes with an epoxide compound of formula (I); (2) producing carbon nanotubes comprising polyurethane polymers, comprising (a1) providing a dispersion of carbon nanotubes, whose surfaces are covalently bounded to carboxyl groups, (b1) reacting the dispersion obtained from (a1) with (I), and (c1) reacting the dispersion obtained from (b1) with polyisocyanate; and (3) carbon nanotubes comprising polyurethane polymer, where at least a part of the carbon nanotubes is covalently bound to the polyurethane polymer, hydroxyalkyl ester groups and free isocyanate groups of polyurethane polymers are present between the carbon nanotubes and polyurethane polymer whose urethane bonds are covalently bound to the surface of the carbon nanotubes, and the urethane bondings have a structure of formula ((CNT)-C(=O)-O-CH(R1)-CH(R2)-O-C(=O)-NH-(PUR)) (aa1) and/or ((CNT)-C(=O)-O-CH(R2)-CH(R1)-O-C(=O)-NH-(PUR)) (bb1). (PUR) : polyurethane polymer. [Image].

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