

Title (en)  
METHOD FOR THE CHEMODYNAMIC PRODUCTION OF DIAMOND-TYPE CARBON STRUCTURES, DIAMOND-TYPE CARBON STRUCTURES  
AND USES OF DIAMOND-TYPE CARBON STRUCTURES

Title (de)  
VERFAHREN ZUR DYNAMISCH-CHEMISCHEN HERSTELLUNG VON DIAMANTARTIGEN KOHLENSTOFFSTRUKTUREN, DIAMANTARTIGE  
KOHLENSTOFFSTRUKTUREN UND VERWENDUNGEN VON DIAMANTARTIGEN KOHLENSTOFFSTRUKTUREN

Title (fr)  
PROCEDE DE PRODUCTION DYNAMOCHIMIQUE DE STRUCTURES DE CHARBON DU TYPE DIAMANT, STRUCTURES DE CHARBON DU  
TYPE DIAMANT ET UTILISATION DE CELLES-CI

Publication  
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Application  
**EP 00945626 A 20000614**

Priority

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Abstract (en)  
[origin: WO0078674A1] In order to produce diamond-type carbon structures chemodynamically, a hybrid carbon phase is placed into a closed container and caused to chemically react with an energy vector, in order to obtain dispersed, condensed carbon as the reaction product. Said reaction product is exposed to an atomically hydrogen-supported low-temperature plasma so that a phase conversion of carbon into highly pure, cuboid lattice structures is obtained. Diamond-type carbon structures can thus be achieved which have approximately 100 % purity of the cuboid diamond phase. The crystallite sizes lie between 5 nm and 50 nm and the cluster size range lies between 50 nm and 20  $\mu$ m. The particle diameters in the dispersion are between 40 nm and 500 nm. The inventive carbon structures are suitable for treating the surfaces of hard substances, or for use as electric insulators or as heat transfer media. For these applications, the diamond-type carbon structures are added to a suspension, a dispersion, an emulsion, a spray, a paste, a grease, a wax or a lacquer system.

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