

Title (en)

METHOD OF PRODUCING CARBON FIBER REINFORCED CERAMIC MATRIX COMPOSITES

Title (de)

VERFAHREN ZUR HERSTELLUNG VON KOHLEFASERVERSTÄRKTEN KERAMIKMATRIXVERBUNDWERKSTOFFEN

Title (fr)

PROCEDE POUR PRODUIRE DES COMPOSITES MATRICIELS EN CERAMIQUE RENFORCEE DE FIBRES DE CARBONE

Publication

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Application

EP 05746091 A 20050527

Priority

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Abstract (en)

[origin: US2008143005A1] The present invention relates to a method of producing carbon fiber reinforced ceramic matrix composites, the method of producing carbon fiber reinforced ceramic matrix composites according to the present invention is characterized in that the method comprises the steps of: producing a carbon fiber reinforced resin composite that is molded with a mixture in which carbon fibers and polymer precursors containing carbon are mixed; producing a carbon fiber reinforced carbon composite by depositing pyrolytic carbon during a rapid thermal gradient chemical vapor infiltration process while increasing the deposition speed in a direction from the inside to the outside by performing a thermal treatment on said carbon fiber reinforced resin composite at high temperature; and infiltrating liquid-phase silicon into the pores of said carbon fiber reinforced carbon composite. The method of producing carbon fiber reinforced ceramic matrix composites according to the present invention as described above has the effect of improving the properties of carbon fiber reinforced ceramic matrix composites, and it is possible to deposit a pyrolytic carbon layer at a deposition speed 5-10 times faster than other conventional chemical vapor infiltration processes, thereby showing a remarkably improved effect in terms of manufacturing process, time, and cost.

IPC 8 full level

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Cited by

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