Methods For Growing Nanofibers/Nanotubes On High Aspect Ratio Carbon Microstructures

Tech ID: 32728 / UC Case 2005-115-2

BRIEF DESCRIPTION

See patent information below. C-MEMS architecture having carbon structures with high surface areas due to high aspect ratios and nanoscale surface enhancements, and improved systems and methods for producing such structures are provided. Specifically, high aspect ratio carbon structures are microfabricated by pyrolyzing a patterned carbon precursor polymer. Pyrolysing the polymer preferably comprises a multi-step process in an atmosphere of inert and forming gas at high temperatures that trail the glass transition temperature (Tg) for the polymer. The surface area of the carbon microstructures is increases by nanotexturing the surface through oxygen plasma exposure, and by integrating nanoscale structures with the carbon microstructures by exposing the carbon microstructures and a catalyst to hydrocarbon gas. In a preferred embodiment, the carbon microstructures are the source of carbon gas.

FULL DESCRIPTION

SUGGESTED USES

ADVANTAGES

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	7,534,470	05/19/2009	2005-115

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OTHER INFORMATION

CATEGORIZED AS

» **Materials & Chemicals**

» Nanomaterials

RELATED CASES

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