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Chung et al.

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(54) **MICROSTRUCTURED
HIGH-TEMPERATURE HYBRID MATERIAL,
ITS COMPOSITE MATERIAL AND METHOD
OF MAKING**

(58) **Field of Classification Search**
CPC C04B 35/71; C04B 35/78; C04B 35/80;
C04B 35/803; C04B 35/806; C04B 35/83
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See application file for complete search history.

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(21) Appl. No.: **13/769,278**

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composites fabricated by chemical vapour infiltration. Journal of
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(57) **ABSTRACT**

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This invention provides a hybrid material that exhibits
strength, stiffness and ability to resist high temperatures. This
hybrid material essentially consists of component A and com-
ponent B. Component A is selected from the group consisting
of inorganic compounds, oxides, carbides, nitrides, borides,
and combinations thereof. Component B is selected from the
group comprising elemental carbon, inorganic compounds,
oxides, carbides, nitrides, borides, and combinations thereof.
Component B comprises a plurality of units, each of the units
substantially exhibiting a shape, such that this shape substan-
tially exhibits a long dimension and a short dimension, with
the short dimension being in a direction that is essentially
perpendicular to the direction of the long dimension and the
short dimension being in the range from 0.1 nm to 0.5 μm.
Each of the units of component B is substantially in contact
with and substantially bonded to at least one of the units of
component A.

(52) **U.S. Cl.**
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