

Accepted Manuscript

Title: Amorphous fine-diameter SiC-based fiber from a boron-modified polytitanocarbosilane precursor

Authors: Guomei He, Baojie Zhang, Bowei Wang, Danni Xu, Siwei Li, Zhaoju Yu, Jiangxi Chen



PII: S0955-2219(17)30840-3
DOI: <https://doi.org/10.1016/j.jeurceramsoc.2017.12.030>
Reference: JECS 11635

To appear in: *Journal of the European Ceramic Society*

Received date: 10-10-2017
Revised date: 16-12-2017
Accepted date: 16-12-2017

Please cite this article as: He G, Zhang B, Wang B, Xu D, Li S, Yu Z, Chen J, Amorphous fine-diameter SiC-based fiber from a boron-modified polytitanocarbosilane precursor, *Journal of The European Ceramic Society* (2010), <https://doi.org/10.1016/j.jeurceramsoc.2017.12.030>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Amorphous fine-diameter SiC-based fiber from a boron-modified
polytitanocarborosilane precursor**

Guomei He*, Baojie Zhang, Bowei Wang, Danni Xu, Siwei Li, Zhaoju Yu, Jiangxi
Chen

*Key Laboratory of High Performance Ceramic Fibers of Ministry of Education, Department of
Materials Science and Engineering, College of Materials, Xiamen University, 361005, People's
Republic of China. E-mail: gmhe@xmu.edu.cn*

Abstract:

An amorphous SiC-based fiber was successfully prepared by the preceramic polymer route from a boron-modified polytitanocarborosilane. It was found that the addition of titanium and boron had adverse effect on melt-spinning, while the tensile strength of the obtained SiC-based fibers increased with the contents of titanium and boron increasing. It is worth mentioning that the decomposition of Si-C-O phase and the resultant β -SiC crystallization were retarded by the incorporation of titanium and boron into the SiC-based fiber.

Keywords: Amorphous; SiC fiber; Fine-diameter; Preceramic; Polycarborosilane

1. Introduction

Continuous fine-diameter silicon carbide (SiC) fiber has been identified as excellent reinforcements for high temperature ceramic matrix composites, because of

Download English Version:

<https://daneshyari.com/en/article/7898470>

Download Persian Version:

<https://daneshyari.com/article/7898470>

[Daneshyari.com](https://daneshyari.com)