论文

NbCx-C三维网状纤维的氧化特性

徐桂英,李建保,黄 勇等

清华大学新型陶瓷与精细工艺国家重点实验室,清华大学 北京 100084

摘要:

对NbC材料在空气中的氧化特性进行热力学分析，并采用恒温氧化法研究了NbCx(x=0.98)-C 网状纤维在360～650℃范围内的空气中的氧化性能.发现在360℃以下，试样未发生明显地氧 化；在450～500℃恒温氧化后试样中发生C沉积；在600℃恒温氧化25 min后，试样完全氧化 .对其进行了在250～850℃的空气中热重和差热分析结果表明，NbCx-C网状纤维在400℃以后 开始明显地氧化并增重，480℃以后反应增重加速，570℃时增重达最大值，之后体系开始迅 速减重，原因是C继续氧化.据试样的最后失重值计算出其中含C量为20.6 mass%.

关键词： NbCx-C三维网状纤维 氧化性能 热重分析

THREE-DIMENSIONAL NETTED FIBERS

Abstract:

The oxidation character of NbC was studied from a thermoanalytical viewpoint first.The oxidation of NbCx(x＝0.98)-C three dimensio n al (3-D) netted fibers was carried out isothermally at temperatures of 360 to 600 ℃ in air.It was found that no oxidation taken place below 360℃.Amorphous carbo n was precipitated out during isothermal oxidation at 450 and 500℃.The NbCx in sample was oxidized completely after isothermal oxidation at 600℃ for 25 minute s.The thermogravimetry(TG) and differential thermal analysis (DTA) on oxidation of samples was carried out at temperature of 250 to 850℃ at a heating rate of 1 0℃/min.in air.The results indicated that NbCx-C netted fibers were oxidized obv iously above 400℃ in the air.The weight gain increased quickly at 480℃ and rea ched maximum at 570℃,and then decreased quickly.The reason is that carbon is ox idized continuously.According to the weight loss in the end,it was calculated th at the amount of carbon contained in the sample was about 20.6 mass%.

Keywords: NbCx C netted fibber oxidation thermogravimetry

收稿日期 1900-01-01 修回日期 1900-01-01 网络版发布日期 2001-01-25

DOI:

基金项目:

通讯作者: 徐桂英 Email:

作者简介:

参考文献:

本刊中的类似文章

文章评论

反馈人		邮箱地址	
反馈标题		验证码	9468

扩展功能
本文信息
Supporting info
PDF(175KB)
[HTML全文]
参考文献
服务与反馈
把本文推荐给朋友
加入我的书架
加入引用管理器
引用本文
Email Alert
文章反馈
浏览反馈信息
本文关键词相关文章
NbCx-C三维网状纤维
氧化性能
热重分析
本文作者相关文章
徐桂英
李建保
黄勇
PubMed
Article by
Article by
Article by