

Microstructure evolutions and nucleation mechanisms of dynamic recrystallization of a powder metallurgy Ni-based superalloy during hot compression

Guoai He, Feng Liu, Lan Huang, Zaiwang Huang, Liang Jiang



PII: S0921-5093(16)31165-0
DOI: <http://dx.doi.org/10.1016/j.msea.2016.09.083>
Reference: MSA34168

To appear in: *Materials Science & Engineering A*

Received date: 26 August 2016
Revised date: 19 September 2016
Accepted date: 20 September 2016

Cite this article as: Guoai He, Feng Liu, Lan Huang, Zaiwang Huang and Liang Jiang, Microstructure evolutions and nucleation mechanisms of dynamic recrystallization of a powder metallurgy Ni-based superalloy during hot compression, *Materials Science & Engineering A* <http://dx.doi.org/10.1016/j.msea.2016.09.083>

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 galley proof before it is published in its final citable 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.

Microstructure evolutions and nucleation mechanisms of dynamic recrystallization of a powder metallurgy Ni-based superalloy during hot compression

Guoai He^{a,b,c}, Feng Liu^{a,b,c}, Lan Huang^{a,b,c}, Zaiwang Huang^{a,b,c,*}, Liang Jiang^{a,b,c}

^aState Key Laboratory of Powder Metallurgy, Central South University, Changsha 410083, China

^bPowder Metallurgy Research Institute, Central South University, Changsha 410083, China

^cHigh Temperature Materials Research Institute, Central South University, Changsha 410083,

China

*Corresponding author at: Powder Metallurgy Research Institute, Central South University, Changsha 410013, PR China. Tel. & Fax: +86 0731 8883 0938. E-mail: huangzaiwang@csu.edu.cn

Abstract

Dynamic recrystallization (DRX) has been of great concern throughout the manufacturing processes, and it deeply affects in-service performance of powder metallurgy Ni-based disk components. Understanding the underpinning mechanisms of DRX is vital to produce the desired microstructure and mechanical properties of the superalloys. In this article, microstructure evolutions and nucleation mechanisms of DRX of an advanced Ni-based superalloy during hot deformation were studied using high resolution EBSD and TEM. The experimental results show that low angle

Download English Version:

<https://daneshyari.com/en/article/5456699>

Download Persian Version:

<https://daneshyari.com/article/5456699>

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