

Accepted Manuscript

Role of surface finish on interface grain boundary migration in vacuum diffusion bonding

Chao Zhang, Hong Li, Miaoquan Li

PII: S0042-207X(16)30402-X

DOI: [10.1016/j.vacuum.2016.12.021](https://doi.org/10.1016/j.vacuum.2016.12.021)

Reference: VAC 7241

To appear in: *Vacuum*

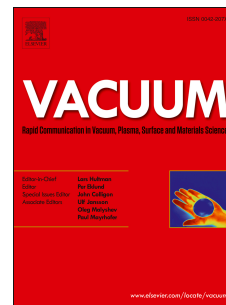
Received Date: 19 August 2016

Revised Date: 29 October 2016

Accepted Date: 5 December 2016

Please cite this article as: Zhang C, Li H, Li M, Role of surface finish on interface grain boundary migration in vacuum diffusion bonding, *Vacuum* (2017), doi: 10.1016/j.vacuum.2016.12.021.

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.



Role of surface finish on interface grain boundary migration in vacuum diffusion bonding

Chao Zhang^{a,b,c,*}, Hong Li^{a,b}, Miaoquan Li^{a,b}

^a School of Material Science and Engineering, Northwestern Polytechnical University,

Xi'an 710072, P.R. China

^b State Key Laboratory of Solidification Processing, Northwestern Polytechnical

University, Xi'an 710072, P.R. China

^c Université de Lyon, INSA-Lyon, LaMCos, UMR CNRS 5259, 20 Avenue des

Sciences, F-69621 Villeurbanne Cedex, France

*Corresponding author email: zc9997242256@gmail.com

Abstract

The objective of this study was to get insight into the role of surface finish on interface grain boundary migration during vacuum diffusion bonding of stainless steel. The results showed that two types of interface grain boundary migration were observed. One was interface grain boundary migration at triple junction; and another was strain induced interface grain boundary migration. Surface finish had an obvious influence on the behavior of interface grain boundary migration. For smoother surface interface grain boundary migration mainly occurred at the triple junctions, while for rougher surface a larger number of strain induced interface grain boundary was produced. The mechanism analysis revealed that the higher surface asperities on the rougher surfaces suffered the load and deform seriously, readily leading to the inhomogeneous local deformation on opposite sides of the interface grain boundary as

Download English Version:

<https://daneshyari.com/en/article/5468257>

Download Persian Version:

<https://daneshyari.com/article/5468257>

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