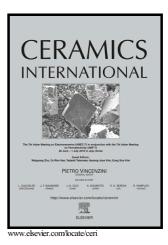
## Author's Accepted Manuscript

The two dimensional microstructure characterization of cemented carbides with an automatic image analysis process

Jinyang Liu, Qingyun Dai, Jian Chen, Shaohua Chen, Hongwei Ji, Wei Dua, Xin Deng, Zhongping Wang, Guangfu Guo, Haipeng Luo



# PII: S0272-8842(17)31690-5 DOI: http://dx.doi.org/10.1016/j.ceramint.2017.08.002 Reference: CERI15956

To appear in: Ceramics International

Received date:2 June 2017Revised date:12 July 2017Accepted date:1 August 2017

Cite this article as: Jinyang Liu, Qingyun Dai, Jian Chen, Shaohua Cher Hongwei Ji, Wei Dua, Xin Deng, Zhongping Wang, Guangfu Guo and Haipeng Luo, The two dimensional microstructure characterization of cemented carbide with an automatic image analysis process, *Ceramics International* http://dx.doi.org/10.1016/j.ceramint.2017.08.002

This is a PDF file of an unedited manuscript that has been accepted fo publication. As a service to our customers we are providing this early version o 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

#### ACCEPTED MANUSCRIPT

### The two dimensional microstructure characterization of cemented carbides with an automatic image analysis process

Jinyang Liu<sup>a</sup>, Qingyun Dai<sup>a</sup>, Jian Chen<sup>b</sup>,\*, Shaohua Chen<sup>b</sup>, Hongwei Ji<sup>b</sup>, Wei Dua<sup>b</sup>, Xin Deng<sup>b,\*</sup>, Zhongping Wang<sup>c</sup>, Guangfu Guo<sup>c</sup>, Haipeng Luo<sup>c</sup>

<sup>a</sup>School of Information Engineering, Guangdong University of Technology, Guangzhou, 510006, China.

<sup>b</sup>School of Electromechanical Engineering, Guangdong University of Technology, Guangzhou, 510006, China.

<sup>c</sup>Heyuan Fuma Cemented Carbide Co., Ltd., Heyuan, 517583, China nanus

jianchen@mail2.gdut.edu.cn

dengxin@gdut.edu.cn

\*Corresponding Authors:

#### Abstract

The traditional two dimensional microstructure characterization of cemented carbide, based on stereology of linear intercept method, requires tedious and subjective manual measurements. In this study, an automatic image analysis procedure with two key techniques, i. e. maximum class square error method and watershed transformation method, has been successfully developed. The image analysis for WC-16Co cemented carbides with this procedure easily acquires consistent microstructure parameters. The analysis for area weighted WC grain size, as well as the subsequent mean free path of Co binder show quite different results compared with the conventional number weighted data. It is found that for both

Download English Version:

# https://daneshyari.com/en/article/5437369

Download Persian Version:

https://daneshyari.com/article/5437369

Daneshyari.com