

Accepted Manuscript

Title: Thermal oxidation induced high electrochemical activity of boron-doped nanocrystalline diamond electrodes

Authors: Jiang Meiyang, Yu Hao, Li Xiao, Lu Shaohua, Hu Xiaojun



PII: S0013-4686(17)32066-2
DOI: <https://doi.org/10.1016/j.electacta.2017.10.008>
Reference: EA 30394

To appear in: *Electrochimica Acta*

Received date: 24-4-2017
Revised date: 11-9-2017
Accepted date: 2-10-2017

Please cite this article as: Meiyang Jiang, Hao Yu, Xiao Li, Shaohua Lu, Xiaojun Hu, Thermal oxidation induced high electrochemical activity of boron-doped nanocrystalline diamond electrodes, *Electrochimica Acta* <https://doi.org/10.1016/j.electacta.2017.10.008>

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.

Thermal oxidation induced high electrochemical activity of boron-doped nanocrystalline diamond electrodes

*Jiang Meiyang, Yu Hao, Li Xiao, Lu Shaohua, Hu Xiaojun **

College of Materials Science and Engineering, Zhejiang University of Technology,
Hangzhou 310014, P.R. China

AUTHOR INFORMATION

Corresponding Author

*E-mail: huxj@zjut.edu.cn, Tel: +86-571-88871522, Fax: +86-571-88871522.

ACKNOWLEDGMENTS

This work was supported by the National Natural Science Foundation of China (Grant Nos. 50972129, 50602039, and 11504325), Natural Science Foundation of Zhejiang Province (LQ15A040004). This work was also supported by the international science technology cooperation program of China (2014DFR51160).

Abstract Thermal oxidation treatment was executed on boron-doped nano-crystalline diamond (B-NCD) films to change both the microstructure and the terminal groups of grains and grain boundaries. Their contributions to the electrochemical activity and electrical properties were investigated. The grain boundaries become narrowing, with ordered graphite phase firstly, and then they become disordered for long time oxidized treatment. This causes

Download English Version:

<https://daneshyari.com/en/article/6605036>

Download Persian Version:

<https://daneshyari.com/article/6605036>

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