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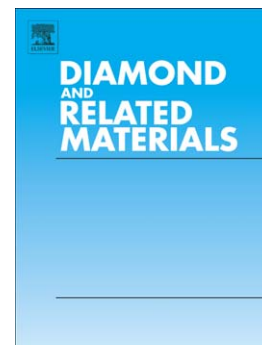
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X-ray photoelectron spectroscopy study of Schottky junctions based on oxygen-/fluorine-terminated (100) diamond

Fengnan Li ^{a, b}, Jingwen Zhang ^a, Xiaoliang Wang ^a, Zhangcheng Liu ^c, Wei Wang ^c, Shuoye Li ^c,
Hong-Xing Wang, ^{c, *}

^a *Key Laboratory for Physical Electronics and Devices of the Ministry of Education, Xi'an Jiaotong University, Xi'an, China 710049*

^b *Shaanxi Key laboratory of Photonics Technology for Information, Xi'an Jiaotong University, Xi'an, China 710049*

^c *Institute of wide band gap semiconductors, Xi'an Jiaotong University, Xi'an, China 710049*

Abstract

In this study, investigation of Schottky junctions based on oxygen-/fluorine-terminated (100) diamond (O-/F-diamond) film has been carried. Both of the O-/F-diamond surfaces have been formed on different areas of one (100) diamond sample by O₂ and CF₄ plasma. Metals of Au, Pd, and Cu have been evaporated on the diamond surfaces to form Schottky junctions, whose barrier heights on O-/F-diamond have been investigated by X-ray photoelectron spectroscopy technique, the results of which indicate that the barrier heights of the metals on O-diamond are about 1.70 eV, and those on F-diamond are about 2.30 eV, respectively.

Keywords:

CVD diamond; fluorine-terminated; Schottky junctions; XPS.

* Corresponding author.

E-mail address: hxwangcn@mail.xjtu.edu.cn

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