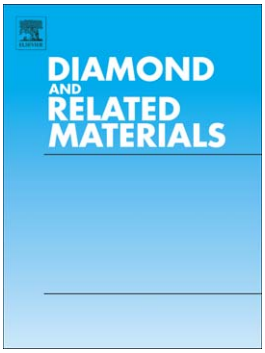

X-ray photoelectron spectroscopy study of schottky junctions based on oxygen -/fluorine-terminated (100) diamond

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

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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 O_2 and CF_4 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.

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