

## Accepted Manuscript

First principle study on the electronic properties and Schottky contact of graphene adsorbed on MoS<sub>2</sub> monolayer under applied out-plane strain

Huynh V. Phuc, Nguyen N. Hieu, Bui D. Hoi, Le T.T. Phuong, Chuong V. Nguyen

PII: S0039-6028(17)30680-5  
DOI: [10.1016/j.susc.2017.10.011](https://doi.org/10.1016/j.susc.2017.10.011)  
Reference: SUSC 21113



To appear in: *Surface Science*

Received date: 13 September 2017  
Revised date: 9 October 2017  
Accepted date: 11 October 2017

Please cite this article as: Huynh V. Phuc, Nguyen N. Hieu, Bui D. Hoi, Le T.T. Phuong, Chuong V. Nguyen, First principle study on the electronic properties and Schottky contact of graphene adsorbed on MoS<sub>2</sub> monolayer under applied out-plane strain, *Surface Science* (2017), doi: [10.1016/j.susc.2017.10.011](https://doi.org/10.1016/j.susc.2017.10.011)

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.

**Highlights**

- Effects of interlayer distance on structural and electronic properties of Graphene/MoS<sub>2</sub> heterointerface is studied using DFT calculations.
- A narrow band gap of 3.6 meV has opened in G/MoS<sub>2</sub> heterointerface, and it can be modulated by the interlayer distance.
- The Schottky barrier and Schottky contact types in the G/MoS<sub>2</sub> heterointerface can be controlled by the interlayer distance.
- The transition from n-type to p-type Schottky contact is occurred at  $d = 2.74 \text{ \AA}$ .
- Our studies may prove to promote the application of ultrathin G/MoS<sub>2</sub> heterointerface in the next-generation nanoelectronic and photonic devices.

Download English Version:

<https://daneshyari.com/en/article/7844877>

Download Persian Version:

<https://daneshyari.com/article/7844877>

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