

CURRICULUM VITAE

Jae Whan Park

Date of birth: 13. DEC. 1981.

Postdoctoral researcher.

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Purpose of research

Electronic structure theory lab. (Prof. Myung Ho Kang)

The objective my research is to investigate atomic and electronic properties for condensed matter systems by using first-principles theory. Research area and main topics are as follows.

Research Area

- Surface and Interface Physics
- Nano and Cluster Physics
- Molecular Dynamics Simulations

Research Topics

- In, Au/Si(111)
- Na, K, Au/graphene/Ni(111)
- C, CO, CO₂/Fe(100)

Research interests

- Metal overlayer on Semiconductor surface

Low dimensional properties, boundary structure, phase transition, growth mechanism.

- Graphene on substrates

Quasifreestanding graphene, intercalation mechanism, electron doping, substrate and strain effect, van der Waals interaction, spin-orbit coupling.

Education

Course	School	Year
Postdoc	BK21, POSTECH Physics	2015-
Ph. D. in Physics	POSTECH (Pohang)	2009-2015
M. S in Physics	POSTECH (Pohang)	2007-2009
B. S. in Physics	Yonsei University (Seoul)	2000-2007
High School	Dae In High School (Inchon)	1997-2000

M. S. (Thesis): First-principles theoretical study of the In Adsorbed Au/Si(111) surface.

Ph. D (Thesis): First-principles study of the Structural and Electronic Properties of the Indium Overlayers on the Si(111) surface.

Awards

- Best Presentation Award, 6th BK21 Young Physicists Workshop, 2012.
- The Excellent Paper Award, Department of Physics, POSTECH, 2013.

Publications

1. J. W. Park and M. H. Kang,
Identification of Metallic Single-Layer Structure of the In/Si(111) surface, (in preparation)
2. J. W. Park and M. H. Kang,
Two-Dimensional Free-Electron Nature of the Indium Thin Films and Overlayers, (in preparation)
3. J. W. Park and M. H. Kang,
Hexagonal indium double layer on Si(111)- $\sqrt{7}\times\sqrt{3}$,
Phys. Rev. B **92**, 045306 (2015). [IF=3.736]
4. Y. S. Park, J. W. Park, H. N. Hwang, K. S. Kim, M. H. Kang, and C. C. Hwang,
Quasi-Free-Standing Graphene Monolayer on a Ni Crystal through Spontaneous Na Intercalation,

Phys. Rev. X 4, 031016 (2014). [IF=9.043]

5. J. W. Park and M. H. Kang,
Effect of the K doping on the quasifree-standing graphene formed on Au/Ni(111):
Density functional calculations,
Phys. Rev. B 89, 195446 (2014). [IF=3.736]
6. J. W. Park and M. H. Kang,
Double-Layer In Structural Model for In/Si(111)- $\sqrt{7}\times\sqrt{3}$ Surface,
Phys. Rev. Lett. 109, 166102 (2012). [IF=7.512]
* Excellent Paper (Department of Physics, POSTECH, 2013)
7. M. H. Kang, S. C. Jung, and J. W. Park,
Density functional study of the Au-Intercalated graphene/Ni(111) surface.
Phys. Rev. B 82, 085409 (2010). [IF=3.736]

Presentations

1. J. W. Park and M. H. Kang,
Effect of Alkali Metal Doping on the Graphene/Ni(111) Surface,
Global Advanced Materials & Surfaces Forum (2015, Dubai, UAE)
2. J. W. Park and M. H. Kang,
Two-dimensional free-electron nature of the indium thin films,
Fall Meeting of Korean Phys. Soc. (2015, Daejeon, Korea).
3. J. W. Park and M. H. Kang,
Indium Double-Layer model for the Hexagonal In/Si(111)-($\sqrt{7}\times\sqrt{3}$) Surface,
Spring Meeting of Korean Phys. Soc. (2015, Daejeon, Korea).
4. J. W. Park and M. H. Kang,
Structural model for the hexagonal In/Si(111)-($\sqrt{7}\times\sqrt{3}$) surface,
Spring Meeting of Korean Phys. Soc. (2014, Daejeon, Korea).
5. J. W. Park and M. H. Kang,
Double-layer origin of the 2D metallic properties of In/Si(111)-($\sqrt{7}\times\sqrt{3}$) surfaces,
The 9th Asian Workshop on Surface Nano-Science, (2013, Muju, Korea).

6. J. W. Park and M. H. Kang,
In double layer model for the In/Si(111)-($\sqrt{7}\times\sqrt{3}$) surface,
The 6th BK21 Young Physicists (2012, Seoul, Korea).
7. J. W. Park and M. H. Kang,
Double-layer In structure for the In/Si(111) -($\sqrt{7}\times\sqrt{3}$) surface,
Fall Meeting of Korean Phys. Soc. (2012, Pyeongchang, Korea).
8. J. W. Park and M. H. Kang,
DFT study of the In adsorbed Si(111)-($\sqrt{7}\times\sqrt{3}$) surfaces,
The 8th Asian Workshop on Surface Nano-Science, (2012, Pyeongchang, Korea).
9. J. W. Park and M. H. Kang,
Effect of K doping on graphene/Au/Ni(111) surface,
Fall Meeting of Korean Phys. Soc. (2011, Busan, Korea).
10. J. W. Park and M. H. Kang,
Electronic structure of hydrogenated graphene on Au/Ni(111) surface,
The 7th Asian Workshop on Surface Nano-Science, (2011, Muju, Korea).
11. J. W. Park and M. H. Kang,
Effects of the Na doping into the graphene/Ni(111) surface,
Fall Meeting of Korean Phys. Soc. (2010, Pyeongchang, Korea).
12. J. W. Park and M. H. Kang,
Effects of the Indium atoms on the Au/Si(111)-($\sqrt{3}\times\sqrt{3}$) surface,
The 6th Asian Workshop on Surface Nano-Science, (2010, Pyeongchang, Korea)
13. J. W. Park, S. C. Jung and M. H. Kang,
Effects of the Au intercalation into the graphene/Ni(111) surface,
Fall Meeting of Korean Phys. Soc. (2009, Changwon, Korea).
14. J. W. Park and M. H. Kang,
Effects of a single In adsorption on the Au/Si(111)- $\sqrt{3}\times\sqrt{3}$ surface,
The 3th BK21 Young Physicists (2009, Daejeon, Korea) [Poster].
15. J. W. Park and M. H. Kang,
Effects of a Single In Adsorption on the Au/Si(111)- $\sqrt{3}\times\sqrt{3}$ Surface,
Fall Meeting of Korean Phys. Soc. (2008, Gwangju, Korea) [Poster].