Jewook Park, Ph.D. *Curriculum Vitae*

Profile

Post-doctoral Research Associate, Scanning Probe Microscopy Group
Center for Nanophase Materials Sciences (CNMS)
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Education

2003–2010	Ph.D. in Physics	Seoul National University, Seoul, Korea
2001–2003	M. A. in Physics	Seoul National University, Seoul, Korea
1997–2001	B. S. in Physics	Seoul National University, Seoul, Korea

Academic and Research Experience

2012–Present	Post-doctoral Research Associate, CNMS, ORNL, (Advisors: Dr. An-Ping Li & Dr. Arthur P. Baddorf)
2012 Summer	Research Fellow, Center for Low Dimensional Electronic Symmetry, Pohang University of Science and Technology (POSTECH) (Advisor: Prof. Han Woong Yeom)
2010–2012	Post-doctoral Research Associate, Center for Atomic Wires and Layer, POSTECH (Advisor: Prof. Han Woong Yeom)
2003–2010	Doctoral Research, Materials and Device Physics Lab, Seoul National University (Advisor: Prof. Kookrin Char)

Research Interests

1. **Low-dimensional System**: Atomic-level characterization of low-dimensional materials such as van der Waals materials, self-assembled atomic wires, and nano islands, using various scanning probe microscopy techniques, for example, scanning tunneling microscopy and spectroscopy (STM/S), atomic force microscopy, spin-polarized STM/S, thermovoltage mapping using STM, cryogenic 4-probe STM, scanning tunneling potentiometry, and so on.
2. **Interface Engineering in Atomic Scale**: Understanding designing, and controlling of interfacial states in low-dimensional heterostructure. Especially, investigating structural, electrical, magnetic, thermal, and transport properties at atomically sharp and coherent boundary of the in-plane heterostructure of two-dimensional materials for novel functionality.

Papers

(Top 5 notable papers)

1. **J. Park***, J. Lee*, L. Liu, C. Durand, C. Park, M. Yoon, B. G. Sumpter, A. P. Baddorf, G. Gu, and A.-P. Li, "Spatially resolved one-dimensional boundary states in graphene-hexagonal boron nitride planar heterostructures", *Nat. Commun.* **5**, 5403(2014) **these authors contributed equally to this work*
2. L. Liu*, **J. Park***, D. A. Siegel, K. F. McCarty, K. W. Clark, W. Deng, L. Basile, J. C. Idrobo, A.-P. Li, and G. Gu, "Heteroepitaxial growth of two-dimensional hexagonal boron nitride templated by graphene edges", *Science* **343** 163 (2014) **these authors contributed equally to this work, cited 78 times*
3. **J. Park**, G. He, R. M. Feenstra, and A.-P. Li, "Atomic-scale mapping of thermoelectric power on graphene: role of defects and boundaries", *Nano Lett.* **13**, 3269 (2013) *highlighted by Nature Nanotechnology (2013)*
4. **J. Park**, S. W. Jung, M.-C. Jung, H. Yamane, N. Kosugi, and H. W. Yeom, "Self-assembled nanowires with giant Rashba split bands", *Phys. Rev. Lett.* **110**, 036801 (2013)
5. **J. Park**, S. Khim, G. S. Jeon, J. S. Kim, K. H. Kim, and K. Char, "Direct observation of two-gap superconductivity in $SrFe_{1.85}Co_{0.15}As_2$ single crystals by scanning tunneling microscopy and spectroscopy", *New J. Phys.* **13**, 033005 (2011)

(Publication list continued)

6. C. Ma, **J. Park**, L. Liu, A. P. Baddorf, G. Gu, and A.-P. Li, "Oxygen-induced superstructures in monolayer hexagonal boron nitride on copper: Effect on the atomic layer stability", *Submitted*
7. I. Soykal, H. Wang, **J. Park**, A.-P. Li, C. Liang, and V. Schwartz, "Highly dispersed buckybowls as model carbocatalysts for C–H bond activation", *J. Mater. Chem. A*, Advance Article, (2015)
8. K. W. Clark, X.-G. Zhang, G. Gu, **J. Park**, G. He, R. M. Feenstra, and A.-P. Li, "Energy gap induced by Friedel oscillations manifested as transport asymmetry at monolayer-bilayer graphene boundaries", *Phys. Rev. X* **4**, 011021 (2014)

9 **J. Park**, K. Nakatsuji, T.-H. Kim, S. K. Song, F. Komori, and H. W. Yeom, "Absence of the Luttinger liquid behavior in Au-Ge wires: a high-resolution scanning tunneling microscopy and spectroscopy study", *Phys. Rev. B* **90** 165410 (2014)

10. **J. Park**, S. Hyun, A. Kim, T. Kim, and K. Char, "Observation of biological samples using a scanning microwave microscope", *Ultramicroscopy* **102**, 101 (2005)
11. J. Lee, **J. Park**, A. Kim, K. Char, S. Park, N. Hur, and S.-W. Cheong, "Phase separation in $La_{5/8}Sr_{3/8}MnO_3$(30%) + $LuMnO_3$(70%) bulk sample studied by scanning microwave microscopy", *Appl. Phys. Lett.* **86**, 012502 (2005)
12. Y.-S. Shin, H.-J. Lee, J. Kim, **J. Park**, and K. Char, "Magnetic domain configuration in cobalt and permalloy micro-structure", *J. Korean Phys. Soc.* **44**, 904 (2004)
13. **J. Park** and A.-P. Li, "Correlation between structural, magnetic, and electrical properties of Co nano islands on

Cu(111) surface", in preparation.
14. **J. Park** and A.-P. Li, "Spin-dependent thermospower mapping using scanning tunneling microscopy", in preparation.
15. **J. Park** and H. W. Yeom, "Diffusive Pb atoms on the Si(111)4×1-In", in preparation.

Presentations

1."STM Study of the correlation between structural, magnetic, and electronic properties of Co nano-islands on Cu(111)", **J. Park**, C. Park, M. Yoon, Z. Gai, A.P. Baddorf, and A.-P. Li, *AVS 62nd International Symposium and Exhibition*, San Jose, CA, USA, 2014.
2. (*Invited*) "Spatially-resolved one-dimensional interfacial states formed by two-dimensional heteroepitaxy", **J. Park**, *Korean Physics Society Spring Meeting*, Daejeon, Korea, 2014.
3. (*Invited*) "Two-dimensional heteroepitaxial growth of hexagonal boron nitride from graphene edges", **J. Park**, L. Liu, D. A. S., K. F. McCarty, K. W. Clark, W. Deng, L. Basile, J. C. Idrobo, A.-P. Li, and G. Gu, *The 7th workshop for Emergent Materials Research*, Pohang, Korea, 2014.
4. "Coherent one dimensional boundaries in graphene and hexagonal boron nitride heterostructures", **J. Park**, L. Liu, K. W. Clark, W. Deng, D. A. Siegel, K. F. McCarty, G. Gu, and A.-P. Li, *AVS 61s International Symposium and Exhibition*, Baltimore, MD, USA, 2014.
5. "Heterostructures formed by epitaxial growth of two-dimensional hexagonal boron nitride from graphene edges", **J. Park**, L. Liu, D. A. Siegel, K. F. M., K. W. Clark, W. Deng, L. Basile, J. C. Idrobo, A.-P. Li, and G. Gu, *The 2014 International Conference on Nanoscience + Technology (ICN+T)*, Vail, CO, USA, 2014.
6. "Spatially-resolved thermopower of graphene: role of boundary and defects", **J. Park**, G. He, R. M. Feenstra, and A.-P. Li, *American Physical Society March Meeting*, Denver, CO, USA, 2014.
7. "STM mapping of thermoelectric power on graphene across defects and boundaries", **J. Park**, G. He, R. M. Feenstra, and A.-P. Li, *AVS 60th International Symposium and Exhibition*, Long Beach, CA, USA, 2013.
8. "Giant Rashba spin splitting found on Pt-induced nanowire", **J. Park**, S. W. Jung, M.-C. Jung, H. Yamane, N. Kosugi, and H. W. Yeom, *International Conference on Nanoscience + Technology (ICN+T)*, Paris, France, 2012.
9. "Giant Rashba spin-splitting found on self-assembled nanowire", **J. Park**, S. W. Jung, M.-C. Jung, H. Yamane, N. Kosugi, and H. W. Yeom, *Korean Physics Society Spring Meeting*, Daejeon, Korea, 2012.
10. "Direct observation of two-gap superconductivity in $SrFe_{1.85}Co_{0.15}As_2$ single crystals by scanning tunneling microscopy and spectroscopy", **J. Park**, S. Khim, G. S. Jeon, J. S. Kim, K. H. Kim, and K. Char, *American Physical Society March Meeting*, Portland, OR,USA, 2010.
11. "Investigation of tunneling density of state of FSF trilayers", J. H. Kwon, **J. Park**, S. K. Choi, K.Char, P. G. Sangiorgio, and M. R. Beasley, *American Physical Society March Meeting*, Denver, CO, USA, 2007.
12. "Investigation of ferroelectric materials with scanning microwave microscope", **J. Park**, J. H. Cho, S. Lee, and K. Char, *American Physical Society March Meeting*, Baltimore, MD, USA, 2006.
13. "Surface-following scanning for dielectric samples in a scanning microwave microscopy", **J. Park**, A. Kim, J. Lee, J. H. Kong, and K. Char, *Korean Physics Society Fall Meeting*, Jeju, Korea, 2004.
14. "Observation of biological samples by scanning microwave microscopy (SMM)" **J. Park**, S. Hyun, A. Kim, T. Kim, and K. Char, *American Physical Society March Meeting*, Indianapolis, IN, USA, 2002.

Professional Activities

2002–Present	Member, American Physical Society
2001–Present	Member, Korean Physical Society
2013–Present	Member, American Vacuum Society

References

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