

CURRICULUM VITAE

Name, Affiliation and Address

MINWOONG JOE

School of Mechanical Engineering
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Education

Ph. D. in physics, 2009. Seoul National University, Seoul, Korea (with *honor*)

Thesis Title: Patterning by ion-beam sputtering

Thesis Advisor:

Byungnam Kahng (Statistical/Condensed Matter Physics) and Jae-Sung Kim (Surface/Nano Physics)

M.S. in physics, 2003. Seoul National University, Seoul, Korea

B.S. in physics, 2001. Konkuk University, Seoul, Korea

Work Experience

2009–2013 June Postdoctoral Researcher, KIST, Seoul, Korea

2013 July–2014 February Research Professor, Dongguk University, Seoul, Korea

2014 March–2017 February Research Professor, Sungkyunkwan University, Suwon, Korea

2018 February–2018 July Research Affiliate, The University of Texas at Austin, USA

2017 March–Present Senior Researcher, Sungkyunkwan University, Suwon, Korea

Current research

Main field: Atomistic Simulations of 2D Materials, related Growth processes, and Nanomechanics.

Publications

1. "Integral equation approach to correlations in a two-dimensional two-component hard-core plasma", **M. Joe** and J. Yeo, Journal of the Korean Physical Society 49(4) 1514 (2006) (IF = 0.506)
2. "Nanopatterning by dual-ion-beam sputtering", **M. Joe**, C. Choi, B. Kahng, and J.-S. Kim, Appl. Phys. Lett. 91(23) 233115 (2007) (IF = 3.794)
3. "Patterning by ion-beam sputtering", **M. Joe**, C. Choi, B. Kahng, C.Y. Kwak, and J.-S. Kim, Journal of the Korean Physical Society 52 S181 (2008) (IF = 0.506)
4. "Nanopatterning by multiple-ion-beam sputtering", **M. Joe**, J.-H. Kim, B. Kahng, and J.-S. Kim, J. Phys. Condensed Matter 21 224011 (2009) (IF = 2.355)
5. "Pattern evolution on previously rippled Au(001) by crossing ion beam sputtering", J.-H. Kim, **M. Joe**, S.-P. Kim, K.-R. Lee, N.-B. Ha, B. Kahng, and J.-S. Kim, Phys. Rev. B 79 2053 (2009) (IF = 3.767)
6. "Study on the Phase Transition Behavior of Ni Nano-Clusters Using Molecular Dynamics Simulation", **M. Joe**, S.-P. Kim and K.-R. Lee, J. Comput. Theor. Nanosci. 6, 2442-2445 (2009) (IF = 0.673)
7. "Enhancement of Electrocatalytic Activity of Gold Nanoparticles by Sonochemical Treatment", Y.-H. Lee, G. Kim, **M. Joe**, J.-H. Jang, J. Kim, K.-R. Lee, and Y.-U. Kwon, Chem. Comm. 46, 5656 (2010) (IF = 6.378)
8. "One-dimensional pattern of Au nanodots by ion-beam sputtering: formation and mechanism", J.-H. Kim, N.-B. Ha, J.-S. Kim, **M. Joe**, K.-R. Lee, R. Cuerno, Nanotechnology 22:285301 (2011) (IF = 3.842)
9. "Reactive molecular dynamics simulation of early stage of dry oxidation of Si (100) surface", M. A. Pamungkas, **M. Joe**, B.-H. Kim, and K.-R. Lee, Journal of Applied Physics, 110 053513 (2011) (IF = 2.210)
10. "Molecular dynamics simulation study on rough amorphous carbon growth by grazing incidence of energetic carbon atoms", **M. Joe**, M.-W. Moon, J. Oh, K.-H. Lee, and K.-R. Lee, Carbon 50, 404 (2012) (IF = 5.868)
11. "Atomistic simulations of diamond-like carbon growth", **M. Joe**, M.-W. Moon, and K.-R. Lee, Thin Solid Films 521, 239 (2012) (IF = 1.604)
12. "In-situ observation of ion beam-induced nanostructure formation on a Cu(In,Ga)Se₂ Surface", J. Y. Lee, W. K. Seong, **M. Joe**, K.-R. Lee, J.-K. Park, M.-W. Moon, C.-W. Yang, Surf. Interface Anal. 44, 1542 (2012) (IF = 1.220)
13. "Stress reduction of diamond-like carbon by Si incorporation: A molecular dynamics study", X. Li, **M. Joe**, A.-Y. Wang, and K.-R. Lee, Surf. and Coating Tech., 228, S190 (2012) (IF = 1.941)
14. "An ideal polymeric C₆₀ coating on a Si electrode for durable Li-ion batteries", **M. Joe**, Y.-K. Han, and K.-R. Lee, H. Mizuseki, S. Kim Carbon 77, 1140 (2014) (IF = 6.198)

15. "A comprehensive study of piezomagnetic response in CrPS4 monolayer: mechanical, electronic properties and magnetic ordering under strains", **M. Joe**, H. Lee, M. Alyörük, J. Lee, S. Y. Kim, C. Lee, and J. H. Lee J. Phys. Condensed Matter 29 405801 (2017) (IF = 2.355)

Major conferences contributed

1. Nanopatterning on Au(001) by dual-ion-beam sputtering: IBMM08, Dresden, Germany Aug. 31-Sep. 5 (Poster) (2008)
2. Molecular dynamics study of tetrahedral amorphous carbon film growth: ACCMS5, Hanoi, Vietnam Sep. 7 - Sep. 11 (Poster) (2009)
3. Molecular dynamics study of amorphous carbon growth by glancing angle deposition: MRS, Moscone west, Sanfrancisco, Apr. 7 (Oral) (2010)
4. Molecular dynamics study of initial morphology evolution of amorphous carbon by glancing angle deposition: MRS, Moscone west, Sanfrancisco, Apr. 27 (Oral) (2011)
5. Molecular Dynamics Simulation of the Nanostructured Surface and Interface Structure Evolution during Thin Film Growth: ECCOMAS2012, Univ. of Vienna, Vienna, Austria, Sep. 11 (Oral) (2012)
6. Molecular Dynamics Simulation Study of the Growth of a Rough Amorphous Carbon Film by the Grazing Incidence of Energetic Carbon Atoms: Materials Surfaces, The Hume Rothery Lecture Theatre, Univ. of Oxford, UK Nov. 28 (Oral) (2012)
7. Molecular Dynamics Study on Fullerene-Deposited Thin Film on Si Substrate: TMS2013, Henry B. Gonzalez Convention Center, San Antonio, Texas, USA, Mar. 7 (Oral) (2013)
8. Molecular dynamics simulation of graphene friction: the interplay of tip, graphene and substrate: APS 2015, Henry B. Gonzalez Convention Center, San Antonio, Texas, USA, Mar. 3 (Poster) (2015)
9. Atomistic Simulation Studies on the Friction of 2D materials: APS 2016, Baltimore Convention Center, Baltimore, Maryland, USA, Mar. 17 (Poster) (2016)
10. Piezomagnetic response in CrPS4 monolayer: RPGR 2017, Grand Copthorne Waterfront Hotel Singapore, Singapore, Sep. 21 (Poster) (2017)

Awards

1. Graduate student research award, Dept. of Physics and Astronomy, Seoul National University (Feb. 26th, 2009)
2. Kawazoe best poster award, ACCMS5 (Sep. 10th, 2009)
3. The best poster award, APCPST and SPSM 2010 (Jul. 8th, 2010)
4. The best poster award, IEEE-Nano Korea 2010 (Aug. 20th, 2010)
5. The best poster award, 2013 KIST-IMCM Symposim (May. 10th, 2013)

Books

1. Korean translation of “Shapes (by Philip Ball, OUP)”, **M. Joe**, SCIENCEBOOKS (Feb. 2014)

Teaching experience

Teaching assistant at the Seoul National University, Korea

Summer 2008: Selected Topics in Physics; Technical Writing (taught by prof. B. N. Basu)

Summer 2007: Physics II

Summer 2005: Physics Lab I

Autumn 2004: Computational Physics

Spring 2004: Physics I

Autumn 2003: Physics II

Personal

Date of Birth: January 11, 1979

Gender: Male

Nationality: Korean

Marital Status: Married (one daughter)

References available upon request

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"Can you teach me to fly like that?" Jonathan Seagull trembled to conquer another unknown.

"Of course, if you wish to learn."

"I wish. When can we start?"

"We could start now, if you'd like." (from Jonathan Livingston Seagull by Richard Bach)