

# CURRICULUM VITAE

## Sang-Pil Kim, Ph. D.

Mechanical Engineering, Division of Engineering

Brown University, 184 Hope Street, Providence, RI 02912, USA

☎ +1-401-441-2511, E-mail: sang-pil\_kim@brown.edu / sang.pil.kim@gmail.com



### EDUCATION

- 2004-2008     **Ph.D.**, Hanyang University, Seoul, Korea  
Major: Materials Science Engineering  
Dissertation Title: **Computer Simulation of Atomic Scale Behavior at Surface and Interface: From Sputtering to Thin Film Growth**
- 2002-2004     **M.S.**, Hanyang University, Seoul, Korea  
Major: Ceramic Engineering  
Thesis Title: **Atomic Deposition Behavior and Interface Characterization of Co-Al system: Molecular Dynamics Simulation**
- 1998-2002     **B.S.**, Hanyang University, Seoul, Korea  
Major: Ceramic Engineering

### WORK EXPERIENCE

- 2002-2004     Research Trainee, Future Technology Research Division, KIST
- 2005-2006     Research Assistant, Voronoi Diagram Research Center, Hanyang University
- 2006-2008     Research Assistant, Computational Science Center, KIST
- 2002-2008     Research Assistant, Division of Materials Science Engineering, Hanyang University
- 2008-2009     Postdoctoral Research Scientist, Computational Science Center, KIST
- 2009-Present   Postdoctoral Research Associate, Division of Engineering, Brown University

### HONORS AND AWARDS

- 2002.10     **Yang-Song Poster Award**, Annual Meeting of the Korean Ceramic Society
- 2005-2006     **Seoul Science Fellowship**, Seoul Metropolitan Government
- 2008.8     **Young Vacuum Scientist Award**, Annual Conference of the Korean Vacuum Society

## PUBLICATION LISTS

19. **'Pattern evolution on a previously rippled Au(001) by crossing-ion-beam-sputtering'**  
J.-H. Kim, M. Joe, **S.-P. Kim**, N.-B. Ha, K.-R. Lee, B. Kahng and J.-S. Kim  
*Physical Review B*, **79**, 205403 (2009).
18. **'Molecular dynamics simulation study of deposition and annealing behaviors of Al atoms on Cu surface'**  
**S.-P. Kim**, K.-R. Lee, Y.-C. Chung, M. Sahashi and Y. K. Kim  
*Journal of Applied Physics*, **105**, 114312 (2009).
17. **'Molecular Dynamics Study of Redeposition Effect by Ar Ion Bombardments on Au, Pd'**  
**S.-P. Kim**, S.-J. Kim, D.-Y. Kim, Y.-C. Chung and K.-R. Lee  
*Journal of the Korean Vacuum Society* **17**, 81 (2008).
16. **'Asymmetric Surface Intermixing During Thin-Film Growth in the Co-Al system: Role of Local Acceleration of the Deposited Atoms'**  
**S.-P. Kim**, S.-C. Lee, K.-R. Lee and Y.-C. Chung  
*Acta Materialia* **56**, 1011 (2008).
15. **'A Molecular Dynamics Study of Deposition and Diffusion Behavior of Al on Cu Surface'**  
**S.-P. Kim**, K.-R. Lee, Y.K. Kim, M. Doi, M. Sahashi and Y.-C. Chung  
*Journal of the Korean Physical Society* **52**, 1241 (2008).
14. **'Asymmetric Intermixing in a Co-Al Thin Film System: An Investigation Using Coaxial Impact Collision Ion Scattering Spectroscopy'**  
H.M. Hwang, J.Y. Park, S.K. Jung, J. Lee, C.N. Hwang, **S.-P. Kim**, S.-C. Lee, K.-R. Lee and Y.-C. Chung  
*Journal of Applied Physics* **101**, 093525 (2007).
13. **'Co/CoAl/Co Trilayer Fabrication Using Spontaneous Intermixing of Co and Al: Molecular Dynamics Simulation'**  
**S.-P. Kim**, Y.-C. Chung, S.-C. Lee, K.-R. Lee and D.-S. Kim  
*Materials Science and Engineering B* **135**, 25 (2006).
12. **'Experimental and Simulation Study to Identify Current-Confined Path in Cu-Al Space Layer for CPP-GMR Spin-Valve Applications'**  
J.-Y. Soh, **S.-P. Kim**, Y.K. Kim, K.-R. Lee, Y.-C. Chung, S. Kawasaki, M. Miyake, M. Doi and M. Sahashi  
*IEEE Transactions on Magnetics* **42**, 2633 (2006).
11. **'Extraction of Crystal Structures based on Euclidean Voronoi Diagram and Angle Distributions among Atoms'**  
D.-S. Kim, Y.-C. Chung, S. Seo, **S.-P. Kim** and C.M. Kim  
*Key Engineering Materials* **317-318**, 881 (2006).

10. **‘Local Acceleration Effects of Adatom at the Vicinity on the Surface: Case of Co Nano Thin-Films on Al Surface’**  
S.-P. Kim, S.-C. Lee, K.-R. Lee and Y.-C. Chung  
*Key Engineering Materials* **317-318**, 581 (2006).
9. **‘Magnetic Property Calculations for B2-Co<sub>x</sub>Al<sub>1-x</sub> Structures at the Interface of Co-Al Multilayer’**  
S.-P. Kim and Y.-C. Chung  
*IEEE Transactions on Magnetics* **41**, 3343 (2005).
8. **‘Atomic-level Investigation of Interface Structure in Ni-Al Multilayer System: Molecular Dynamics Simulation’**  
 S.-G. Lee, S.-P. Kim, K.-R. Lee and Y.-C. Chung  
*Journal of Magnetism and Magnetic Materials* **286**, 394 (2005).
7. **‘Distribution of BCC, FCC, and HCP Structures in Al-Co Composite Materials’**  
 D.-S. Kim, Y.-C. Chung, S. Seo, S.-P. Kim and C. M. Kim  
*Journal of Ceramic Processing Research* **6**, 68 (2005).
6. **‘Crystal Structure Extraction in Materials using Euclidean Voronoi Diagram and Angular Distributions among Atoms’**  
 D.-S. Kim, Y.-C. Chung, S. Seo, S.-P. Kim and C. M. Kim  
*Journal of Ceramic Processing Research* **6**, 63 (2005).
5. **‘Atomic Mixing Behavior of Co/Al(001) vs. Al/fcc-Co(001): Molecular Dynamics Simulation’**  
S.-P. Kim, S.-C. Lee, K.-R. Lee and Y.-C. Chung  
*Journal of Electroceramics* **13**, 315 (2004).
4. **‘Molecular Dynamics Simulation at the Early Stage of Thin Film Deposition: Al or Co on Co (111)’**  
S.-P. Kim, S.-C. Lee, K.-R. Lee and Y.-C. Chung  
*Japanese Journal of Applied Physics* **43**, 3818 (2004).
3. **‘Ab initio Investigation of the Early Stage of Nano-Scale Thin Film Growth: Al and Co Adatoms on Co (111) Surface’**  
 C. Kim, S.-P. Kim, Y.-S. Kim, H. Kim and Y.-C. Chung  
*Japanese Journal of Applied Physics* **43**, 3815 (2004).
2. **‘Effects of Substrate Orientations on the Local Acceleration in Thin Film Growth: the case of Co on Al Surfaces’**  
S.-P. Kim, S.-C. Lee, K.-R. Lee and Y.-C. Chung  
*Journal of the Korean Physical Society* **44**, 18 (2004).
1. **‘Surface Alloy Formation of Co on Al Surface: Molecular Dynamics Simulation’**  
S.-P. Kim, S.-C. Lee, K.-R. Lee, K.-H. Lee and Y.-C. Chung  
*Journal of Applied Physics* **93**, 8564 (2003).

### CONFERENCE PROCEEDING

3. **‘Molecular Dynamics Study of Ballistic Rearrangement of Surface Atoms during High Energy Ion Bombardment on Pd (001) Surface’**,  
**S.-P. Kim** and K.-R. Lee  
*Proceedings NSTI Nanotech 2008, Boston, MA, USA (2008).*
2. **‘Atomic Scale Understanding of Intermixing Behavior of Thin Metal Multilayer’**  
**S.-P. Kim**, J.Y. Park, S.-C. Lee, K.-R. Lee, Y.-C. Chung and C.N. Whang  
*Proceedings NSTI Nanotech 2006, Boston, MA, USA (2006).*
1. **‘A Comparative Study on the Differences in the Evolutions of Thin Film Morphologies of Co-Al Binary System: Molecular Dynamics Study’**  
**S.-P. Kim**, S.-C. Lee, K.-R. Lee, K.-H. Lee and Y.-C. Chung  
*Materials Research Society Symposium Proceedings, 777, 183 (2003).*

### PATENT (Korea)

1. **‘Creation procedure of ordered non-magnetic nano film between magnetic multilayer’**  
S.-C. Lee, **S.-P. Kim**, K.-R. Lee, Korea Patent 10-0716104 (2007.5.2)