

CURRICULUM VITAE

DAESU LEE

ADDRESS: Department of Physics,
Pohang University of Science and Technology (POSTECH),
77 Cheongam-ro, Nam-gu, Pohang, Gyeongbuk, 37673, Korea

PHONE: +82 (10) 5281-4328 (Mobile) +82 (54) 279-2063 (Office)

E-MAIL: dlee1@postech.ac.kr / pescador1@gmail.com

EDUCATION

Ph.D. in Physics, Seoul National University, Seoul, Korea Feb 2012

B.S. in Physics, Seoul National University, Seoul, Korea Feb 2006
Graduation with honors: summa cum laude

RESEARCH INTEREST

Understanding fundamental solid state phenomena and designing novel materials
Growth/Characterization of correlated material thin films & heterostructures
Exploring emerging properties & phenomena in nanoscale correlated materials
Phase competition & transition in strongly correlated electron materials

WORK HISTORY

Assistant Professor Sept 2018 – Present
Department of Physics,
Pohang University of Science and Technology (POSTECH), Korea

Research Assistant Professor Apr 2017 – Aug 2018
Department of Physics and Astronomy,
Seoul National University, Korea

Postdoctoral Research Associate Mar 2012 – Mar 2017
Department of Materials Science and Engineering,
University of Wisconsin–Madison, USA

SELECTED PUBLICATIONS

1. S. Das, B. Wang, T. R. Paudel, S. M. Park, E. Y. Tsymbal, L.-Q. Chen, **D. Lee***, T. W. Noh. “Enhanced flexoelectricity at reduced dimensions revealed by mechanically tunable quantum tunnelling.” *Nature Commun.* **10**, 537 (2019).
2. **D. Lee**, B. Chung, Y. Shi, G.-Y. Kim, N. Campbell, F. Xue, K. Song, S.-Y. Choi, J. P. Podkaminer, T. H. Kim, P. J. Ryan, J.-W. Kim, T. R. Paudel, J.-H. Kang, D. A. Tenne, E. Y. Tsymbal, M. S. Rzchowski, L. Q. Chen, J. Lee, C. B. Eom. “Isostructural metal-insulator transition in VO₂.” *Science* **362**, 1037 (2018).
3. L. Wang, Q. Feng, Y. Kim, R. Kim, K. H. Lee, Y. J. Shin, H. Zhou, W. Peng, **D. Lee**, J. H. Han, M. Y. Kim, Q. Lu, T. W. Noh. “Ferroelectrically tunable magnetic skyrmions in ultrathin oxide heterostructures.” *Nature Mater.* **17**, 1087 (2018).
4. H. Lu, **D. Lee (co-first)**, K. Klyukin, L. L. Tao, B. Wang, H. Lee, T. R. Paudel, L.-Q. Chen, E. Y. Tsymbal, V. Alexandrov, C.-B. Eom, A. Gruverman. “Tunneling hot spots in ferroelectric SrTiO₃.” *Nano Lett.* **18**, 491 (2018).
5. **D. Lee**, J. Lee, K. Song, F. X, S.-Y. Choi, Y. Ma, J. Podkaminer, D. Liu, S.-C. Liu, B. Chung, W. Fan, W. Zhou, J. Lee, L.-Q. Chen, S. H. Oh, Z. Ma, C.-B. Eom. “Sharpened VO₂ phase transition via controlled release of epitaxial strain.” *Nano Lett.* **17**, 5614 (2017).

6. **D. Lee**, H. Lu, Y. Gu, S.-Y. Choi, S.-D. Li, S. Ryu, T. Paudel, K. Song, E. Mikheev, S. Lee, S. Stemmer, D. A. Tenne, S. H. Oh, E. Y. Tsymbal, X. Wu, L.-Q. Chen, A. Gruverman, and C. B. Eom. "Emergence of room-temperature ferroelectricity at reduced dimensions." *Science* **349**, 1314 (2015).
7. **D. Lee**, B. C. Jeon, A. Yoon, Y. J. Shin, M. H. Lee, T. K. Song, S. D. Bu, M. Kim, J.-S. Chung, J.-G. Yoon, and T. W. Noh. "Flexoelectric control of defect formation in ferroelectric epitaxial thin films." *Adv. Mater.* **26**, 5005 (2014).
8. **D. Lee**, S. M. Yang, J.-G. Yoon, and T. W. Noh. "Flexoelectric rectification of charge transport in strain-graded dielectrics." *Nano Lett.* **12**, 6436 (2012).
9. **D. Lee**, B. C. Jeon, S. H. Baek, S. M. Yang, Y. J. Shin, T. H. Kim, Y. S. Kim, J.-G. Yoon, C. B. Eom, and T. W. Noh. "Active Control of Ferroelectric Switching Using Defect-Dipole Engineering." *Adv. Mater.* **24**, 6490 (2012).
10. **D. Lee**, S. M. Yang, T. H. Kim, B. C. Jeon, Y. S. Kim, J.-G. Yoon, H. N. Lee, S. H. Baek, C. B. Eom, and T. W. Noh. "Multilevel Data Storage Memory Using Deterministic Polarization Control." *Adv. Mater.* **24**, 402 (2012).
11. **D. Lee**, A. Yoon, S. Y. Jang, J.-G. Yoon, J.-S. Chung, M. Kim, J. F. Scott, and T. W. Noh. "Giant flexoelectric effect in ferroelectric epitaxial thin film." *Phys. Rev. Lett.* **107**, 057602 (2011).