

Dong-Hwa Seo

Status: Assistant professor, School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology (UNIST)

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EDUCATION

2009–2011 KAIST, Ph. D. in MSE

2007–2009 KAIST, M. S. in MSE

2000–2007 PNU, B. S. in MSE

WORK EXPERIENCE

2019 – Current: Assistant professor, School of Energy and Chemical Engineering, UNIST, Korea

2017 – 2019: Senior engineer, Advanced Materials Lab, Samsung Research America, USA

2016 – 2017: Associate research specialist, University of California, Berkeley, CA, USA

2013 – 2015: Senior post-doctoral researcher, Massachusetts Institute of Technology, MA, USA

2011 – 2013: Post-doctoral researcher, Seoul National University, Seoul, Korea

RESEARCH INTERESTS & EXPERTIES

1) Designing and characterizing materials for rechargeable batteries at nm scale using DFT calculation

2) Data-driven materials development for new functional materials using high-throughput DFT calculations and machine learning methods

SELECTED RECENT PUBLICATIONS

1. **Dong-Hwa Seo**,[‡] J. Lee,[‡] A. Urban, R. Malik, S. Kang, G. Ceder

[The structural and chemical origin of the oxygen redox activity in layered and cation-disordered Li-excess cathode materials](#)

Nature Chem., 8, 692 (2016), [‡]*equally contributed*

2. W. Zhang,[‡] **Dong-Hwa Seo**,[‡] T. Chen,[‡] L. Wu, M. Topsakal, Y. Zhu, D. Lu, G. Ceder, F. Wang
[Kinetic Pathways of Ionic Transport in Fast Charging Lithium Titanate](#)

Science, 367 (6481) 1030 (2020)

3. **Dong-Hwa Seo**,[‡] K.-Y. Park,[‡] H. Kim,[‡] S.-K. Jung, M.-S. Park, K. Kang

[Intrinsic Nanodomains in Triplite LiFeSO₄F and Its Implication in Lithium-Ion Diffusion](#)

Adv. Energy Mater., 8 (6), 1701408 (2018)

4. J. Kim,[‡] **Dong-Hwa Seo**,[‡] H. Kim, I. Park, J.-K. Yoo, S.-K. Jung, Y.-U. Park, W. A. Goddard, K. Kang

[Unexpected discovery of low-cost maricite NaFePO₄ as a high-performance electrode for Na-ion batteries](#)

Energy Environ. Sci., 8, 540 (2015)

5. Y.-U. Park,[‡] **Dong-Hwa Seo**,[‡] H.-S. Kwon, B. Kim, J. Kim, H. Kim, I. Kim, H.-I. Yoo, K. Kang

[A New High-Energy Cathode for a Na-Ion Battery with Ultrahigh Stability](#)

J. Am. Chem. Soc., 135, 13870 (2013)

6. **Dong-Hwa Seo**,[‡] H. Kim,[‡] H. Kim, W. A. Goddard, K. Kang

[The Predicted Crystal Structure of Li₄C₆O₆, an Organic Cathode Material for Li-ion Batteries, from First-Principles Multi-level Computational Methods](#)

Energy Environ. Sci., 4, 4938 (2011)

63 SCI/SCIE papers (Citation: 8,000, h-index: 41), 2 US patents holding and 11 US patents filed