

Dr. Kyu-Young Park

Assistant Professor- POSTECH-GIFT (Graduate Institute of Ferrous & Energy Materials Technology)
Present address: 77 Cheongam-Ro, Nam-Gu, Pohang, Gyeongbuk, Republic of Korea (Zip code: 37673)
kypark0922@postech.ac.kr

Educations and Work experiences

- 2022.07. ~ Present Assistant Professor** Materials Science & Engineering, Postech, Republic of Korea
- 2021.07. ~ Present Assistant Professor** Graduate Institute of Ferrous & Energy Materials Technology, Postech, Republic of Korea
- 2020.02 ~ 2021.05 Research fellow** Volexion Inc (Startup company, lithium-ion battery, United States, <https://www.volexion-inc.com/>)
- 2018. 10 ~ 2021.05 Postdoctoral Research Fellow** Department of materials science and engineering, Northwestern University, United States (**Advisor: Prof. Mark Hersam**)
- 2016. 03 ~ 2018. 09 Postdoctoral Research Fellow** Department of materials science and engineering, Seoul national university, republic of Korea (**Advisor: Prof. Kisuk Kang**)
- 2012. 03 ~ 2016. 02 Philosophy doctor course** Department of materials science and engineering, Seoul national university, republic of Korea
- 2010. 03 ~ 2012. 02 Master of materials science** Department of EEWS, KAIST, republic of Korea
- 2006. 03 ~ 2010. 02 Bachelor of science** Department of materials science and engineering, KAIST, republic of Korea

Research interest

Energy storage materials – Lithium-ion battery system, layered or poly-anion cathode materials for lithium-ion batteries, defect chemistry on energy storage materials, phase transition behavior, thermodynamic properties of active materials.

Structural analysis of materials - Expert with diffraction analysis (X-ray and neutron diffraction analysis using Rietveld's refinement method and *in-situ* equipment for electrode materials)

Electrochemical analysis of electrode materials – Expert with electrochemical equipment (electrochemical impedance spectroscopy, galvanostatic or potential charge/discharge equipment and electrochemistry analysis)

2D materials – Synthesis and characterization of 2D-materials for the electronic device

Selected Paper

[1] Lithium-excess olivine electrode for lithium rechargeable batteries

Kyu-Young Park, Inchul Park, Hyungsub Kim, Gabin Yoon, Hyeok-Jo Gwon, Yongbeom Cho, Young Soo Yun, Seongsu Lee, Docheon Ahn, Yunok Kim, Won-Sub Yoon and Kisuk Kang, *Energy & environment science*, Vol 9, pp.2902-2915. (2016)

*This paper is selected as the special article in "*Highlight research of Pohang acceleration laboratory 2017*".

*This paper is also selected as the best research using neutron diffraction technique of Korea neutron research association.

[2] Trackable galvanostatic history in phase separation based electrodes for lithium-ion batteries; mosaic sub-grouping intercalation model

Kyu-Young Park, Jihyun Hong, Won-Mo Seong, Jung-Joon Kim, KyoJin Ku Byungju Lee and Kisuk Kang, Energy & environment science, Vol 10, pp.2352-2364. (2017)

***This paper is selected as part of the themed collection: "2017 Energy and Environmental Science HOT articles".**

[3] Intrinsic nanodomains in triplite LiFeSO₄F and its implication in lithium-ion diffusion

Dong-Hwa Seo[†], ***Kyu-Young Park***[†], Haegyeom Kim[†], Sung-Kyun Jung, and Min-Sik Park, Kisuk Kang, Advanced energy materials, Vol.8, Issue 6, 1701408 (2018)

[4] Concurrently achieving volumetric and specific capacity limits of lithium battery via conformal Pickering emulsion graphene coatings

Kyu-Young Park, Jin-Myoung Lim, Norman S. Luu, Julia R. Downing, Shay G. Wallace, Lindsay Chaney, Hocheon Yoo, Woo Jin Hyun, Hyung-Woo Kim and Mark C. Hersam, Advanced energy materials, Vol.10, Issue 25, 2001216 (2020)

***This paper is selected as the cover paper of volume 10, issue 25 in Advanced Energy Materials.**

[5] Elucidating and Mitigating High-Voltage Degradation Cascades in Cobalt-Free LiNiO₂ Lithium-Ion Battery Cathodes

Kyu-Young Park[†], Yizhou Zhu, Carlos G Torres-Castanedo, Hee Joon Jung, Norman S Luu, Ozge Kahvecioglu, Yiseul Yoo, Jung-Woo T Seo, Julia R Downing, Hee-Dae Lim, Michael J Bedzyk, Christopher Wolverton, Mark C Hersam,, Vol 34, issue 3, pp. 2106402. (2022).

***This paper is selected as the back cover paper of volume 34, issue 3 in Advanced Energy Materials.**

Honors and Scholarship

2009, 09 University president's award for the best student in KAIST

2013, 02 Samsung Humantech Paper award, Golden Prize

2015, 05 Korea neutron academic conference, Best paper award

2015, 08 Korean conference on neutron scattering, Best researcher award

2015, 12 World premium material conference, Best researcher award, Golden Prize

2017, 05 Korean conference on neutron scattering, Best researcher award

2017, 11 Win a young scientist award for synchrotron radiation technology in Korea

2020, 09 National Research Foundation of Korea (NRF) funded by the Ministry of Education

Citation index

Total cited; 7719 times (google scholar, 2022. Sep.)

h-index **38**, *i10*-index **55**

https://scholar.google.com/citations?user=X7lw_IAAAAAJ&hl=ko