

EMPLOYMENT HISTORY

10/2025 – Present	School of Mechanical and Aerospace Engineering Nanyang Technological University (Singapore) <i>Nanyang Assistant Professor</i>
06/2024 – 06/2025	Battery Electrolyte Scientist SES AI (Woburn, MA, USA) <i>Senior Scientist</i>
01/2020 – 06/2024	Professor Yi Cui's Laboratory Stanford University (Stanford, CA, USA) <i>Graduate Student Researcher</i> (Advisors/Dissertation Committees: Yi Cui, Zhenan Bao, Jian Qin)
06/2022 – 08/2022	Cell Electrochemistry Design Engineer Rivian (Palo Alto, CA, USA) <i>Internship</i>
09/2019 – 01/2020	Professor Zhenan Bao's Laboratory Stanford University (Stanford, CA, USA) <i>Graduate Student Researcher (Department Rotation Program)</i> (Advisors/Dissertation Committees: Yi Cui, Zhenan Bao, Jian Qin)
07/2016 – 07/2019	Center for Energy Storage Research Korea Institute of Science and Technology (Seoul, Rep. of Korea) <i>Research Scientist (In lieu of national military service, extremely selective)</i>
08/2014 – 06/2016	Professor Lynden A. Archer's Laboratory Cornell University (Ithaca, NY, USA) <i>Graduate Student Researcher</i> (Advisor: Lynden A. Archer)
12/2012 – 01/2013	Electrical Apparatus Research Division Korea Electrotechnology Research Institute (Changwon, Rep. of Korea) <i>Internship</i>
05/2011 – 05/2014	Professor Roya Maboudian's Laboratory University of California, Berkeley (Berkeley, CA, USA) <i>Undergraduate Student Researcher</i> (Advisor: Roya Maboudian)

EDUCATION

09/2019 – 06/2024	Stanford University Doctor of Philosophy (Ph.D.) in Chemical Engineering	California, USA
08/2014 – 05/2016	Cornell University Master of Science (M.S.) in Chemical and Biomolecular Engineering	New York, USA
08/2010 – 05/2014	University of California, Berkeley Bachelor of Science (B.S.) in Chemical & Biomolecular Engineering	California, USA

PUBLICATIONS (H-index: 27 | Citations: >4711)

Peer-Reviewed Journals

1. **M.S. Kim**[†], J. Wang[†], W. Zhang[†], P. Sayavong, Z. Zhang, S. T. Oyakhire, S. B. Shuchi, S. C. Kim, Y. Cui, Y. Chen, Z. Yu, H. Gong, R. Xu, J. Lee, J. H. Lee, I.R. Choi, K. A. Persson, J. Qin, Z. Bao, Y. Cui, “*Elucidating the effects of LiF on lithium metal anodes*”, *Nano Letters* 25, 14625-14634 (2025). (IF: 9.1)
2. J.Y. Lee[†], **Mun Sek Kim**[†], Y. Cui, W. Zhang, S. B. Shuchi, S. E. Holmes, J.H. Lee, C. Serrao, S.C. Kim, J. Holoubek, P. Sayavong, A. Cai, I.R. Choi, and Y. Cui, “*Reactive Suspension Electrolytes for Lithium Metal Batteries*”, *ACS Energy Letters* 10, 4252-4259 (2025). (IF: 18.2)
3. Y. Li, X. Zheng, E. Z. Carlson, X. Xiao, X. Chi, Y. Cui, L. C. Greenburn, G. Zheng, E. Zhang, C. Liu, Y. Yang, **M.S. Kim**, G. Feng, P. Zhang, H. Su, X. Guan, J. Zhou, Y. Wu, Z. Xue, W. Li, M. Bajdch, Y. Cui, “*In situ formation of liquid crystal interphase in electrolytes with soft templating effects for aqueous dual-electrode-free batteries*”, *Nature Energy* 9, 1350-1359 (2024). (IF: 49.7)
4. S.C. Kim, X. Gao, S.L. Liao, H. Su, Y. Chen, W. Zhang, L. C. Greenburg, J.A. Pan, X. Zheng, Y. Ye, **M.S. Kim**, P. Sayavong, A. Brest, J. Qin, Z. Bao, Y. Cui, “*Solvation-property relationship of lithium-sulphur battery electrolytes*”, *Nature Communications* 15, 1268 (2024). (IF: 14.7)
5. W. Zheng, P. Sayavong, X. Xiao, S. T. Oyakhire, S. B. Shuchi, R. A. Vila, D. T. Boyle, S.C. Kim, **M.S. Kim**, S. E. Holmes, Y. Ye, D. Li, S. F. Bent, Y. Cui, “*Recovery of isolated lithium through discharged state calendar ageing*”, *Nature* 626, 306-312 (2024). (IF: 50.5)
6. S. T. Oyakhire, S.L. Liao, S. B. Shuchi, **M.S. Kim**, S.C. Kim, Z. Yu, R. A. Vila, P. E. Rudnicki, Y. Cui, S. F. Bent, “*Proximity Matters: Interfacial Solvation Dictates Solid Electrolyte Interphase Composition*”, *Nano Letters* 23(16), 7524-7531 (2023). (IF: 9.6)
7. S.C. Kim, J. Wang, R. Xu, P. Zhang, Y. Chen, Z. Huang, Y. Yang, Z. Yu, S. T. Oyakhire, W. Zhang, L. Greenburg, **M.S. Kim**, D. T. Boyle, P. Sayavong, Y. Ye, J. Qin, Z. Bao, Y. Cui, “*High Entropy Electrolytes for Practical Lithium Metal Batteries*”, *Nature Energy* 8, 814-826 (2023). (IF: 49.7)
8. P. Sayavong, W. Zhang, S. T. Oyakhire, D. T. Boyle, Y. Chen, S.C. Kim, R. A. Vila, S. E. Holmes, **M.S. Kim**, S. F. Bent, Z. Bao, Y. Cui, “*Dissolution of the Solid Electrolyte Interphase and Its Effects on Lithium Metal Anode Cyclability*”, *JACS* 145(22), 12342-12350 (2023). (IF: 14.5)
9. S.C. Kim, S. T. Oyakhire, C. Athanitis, J. Wang, Z. Zhang, W. Zhang, D. T. Noyle, **M.S. Kim**, Z. Yu, X. Gao, T. Sogade, E. Wu, J. Qin, Z. Bao, S. F. Bent, Y. Cui, “*Data-driven electrolyte design for lithium metal anodes*”, *PNAS* 120(10), e2214357120 (2023). (IF: 9.4)
10. **M.S. Kim**, Z. Zhang, J. Wang, S. T. Oyakhire, S. C. Kim, Y. Zhiao, Y. Chen, D. T. Boyle, Y. Ye, Z. Huang, W. Zhang, R. Xu, P. Sayavong, S. F. Bent, J. Qin, Z. Bao, Y. Cui, “*Revealing the multi-functions of Li₃N in the suspension electrolyte for lithium metal batteries*”, *ACS Nano* 17(3), 3168-3180 (2023). (IF: 15.8)
11. S. T. Oyakhire, W. Zhang, Z. Yu, S. E. Holmes, P. Sayavong, S.C. Kim, D. T. Boyle, **M.S. Kim**, Z. Zhang, Y. Cui, S. F. Bent, “*Correlating the formation protocols of solid electrolyte interphases with practical performance metrics in lithium metal batteries*”, *ACS Energy Letters* 8, 869-877 (2023). (IF: 19.5)
12. D. T. Boyle, Y. Li, A. Pei, R. A. Vila, Z. Zhang, P. Sayavong, **M.S. Kim**, W. Huang, H. Wang, Y. Liu, R. Xu, R. Sinclair, J. Qin, Z. Bao, Y. Cui, “*Resolving Current-Dependent Regimes of Electroplating Mechanisms for Fast Charging Lithium Metal Anodes*”, *Nano Letters* 22(20), 8224-8232 (2022). (IF: 9.6)

13. **M.S. Kim**[†], Z. Zhang[†], P. Rudnicki, Z. Yu, J. Wang, S. T. Oyakhire, Y. Chen, S.C. Kim, W. Zhang, D. T. Boyle, X. Kong, R. Xu, Z. Huang, W. Huang, S. F. Bent, L.W. Wang, J. Qin, Z. Bao, Y. Cui, “*Suspension electrolyte with modified Li⁺ solvation environment for lithium metal batteries*”, [Nature Materials](#) 21, 445-454 (2022). (IF: 37.2)
14. S. Lee[†], **M.S. Kim**[†], J.-H. Lee, J.-H. Ryu, V. Do, B.G. Lee, W. Kim, W.I. Cho, “*Li-In alloy anode and Nb₂CTx₂ artificial solid-electrolyte interphase for practical Li metal batteries*”, [Journal of Materials Chemistry A](#) 10(8), 4157-4169 (2022). (IF: 10.7)
15. Z. Yu, P. Rudnicki, Z. Zhang, Z. Huang, H. Celik, S. T. Oyakhire, Y. Chen, X. Kong, S.C. Kim, X. Xiao, H. Wang, Y. Zheng, G. Kamat, **M.S. Kim**, S. F. Bent, J. Qin, Y. Cui, Z. Bao, “*Rational solvent molecule tuning for high-performance lithium metal battery electrolytes*”, [Nature Energy](#) 7, 94-106 (2022). (IF: 49.7)
16. J. Zheng, **M.S. Kim**, Z. Tu, S. Choudhury, T. Tang, L.A. Archer, “*Regulating electrodeposition morphology of lithium: towards commercially relevant secondary Li metal batteries*”, [Chemical Society Reviews](#) 49(9), 2701-2750 (2020). (IF: 40.4)
17. **M.S. Kim**, Deepika, S.H. Lee, M.-S. Kim, J.-H. Ryu, K.-R. Lee, L.A. Archer, W.I. Cho, “*Enabling reversible redox reactions in electrochemical cells using protected LiAl intermetallics as lithium metal anodes*”, [Science Advances](#) 5(10), eaax5587 (2019). (IF: 11.7)
18. M.-S. Kim, **M.S. Kim**, V. Do, Y. Xia, W. Kim, W.I. Cho, “*Facile and scalable fabrication of high-energy-density sulfur cathodes for pragmatic lithium-sulfur batteries*”, [Journal of Power Sources](#) 422, 104-112 (2019). (IF: 8.1)
19. V. Do, Deepika, **M.S. Kim**, M.-S. Kim, K.-R. Lee, W.I. Cho, “*Carbon Nitride Phosphorus as an Effective Lithium Polysulfide Adsorbent for Lithium-Sulfur Batteries*”, [ACS Applied Materials & Interfaces](#) 11(12), 11431-11441 (2019). (IF: 8.5)
20. K.M. Kwon, I.G. Kim, K.Y. Lee, H. Kim, **M.S. Kim**, W.I. Cho, J. Choi, I.W. Nah, “*α-Fe₂O₃ anchored on porous N doped carbon derived from green microalgae via spray pyrolysis as anode materials for lithium ion batteries*”, [Journal of Industrial Engineering Chemistry](#) 69, 39-47 (2019). (IF: 5.9)
21. **M.S. Kim**, J.-H. Ryu, Deepika, Y.R. Lim, I.W. Nah, K.-R. Lee, L.A. Archer, W.I. Cho, “*Langmuir-Blodgett artificial solid-electrolyte interphases for practical lithium metal batteries*”, [Nature Energy](#) 3, 889-898 (2018) – [Hero image](#) cover. (IF: 49.7)
22. **M.S. Kim**, M.-S. Kim, V. Do, Y.R. Lim, I.W. Nah, L.A. Archer, W.I. Cho, “*Designing solid-electrolyte interphases for lithium sulfur electrodes using ionic shields*”, [Nano Energy](#) 41, 573-582 (2017). (IF: 16.8)
23. L. Ma, **M.S. Kim**, L.A. Archer, “*Stable artificial solid electrolyte interphases for lithium batteries*”, [Chemistry of Materials](#) 29(10), 4181-4189 (2017). (IF: 7.2)
24. **M.S. Kim**, L. Ma, S. Choudhury, L.A. Archer, “*Multifunctional Separator Coatings for High Performance Lithium sulfur Batteries*”, [Advanced Materials Interfaces](#) 3(22), 1600450 (2016) – [Front cover](#). (IF: 4.3)
25. **M.S. Kim**, L. Ma, S. Choudhury, S. Wei, L.A. Archer, “*Fabricating multifunctional nanoparticle membranes by a fast layer-by-layer Langmuir-Blodgett process: application in lithium-sulfur Batteries*”, [Journal of Materials Chemistry A](#) 4, 14709-14719 (2016). (IF: 10.7)
26. L. Ma, H. Zhuang, S. Wei, K. Hendrickson, **M.S. Kim**, R.G. Hennig, L.A. Archer, “*Enhanced Li-S batteries using Amine-functionalized CNT in the Cathode: Electrochemistry and Kinetics of Polysulfide Dissolution*”, [ACS Nano](#) 10(1), 1050-9 (2015). (IF: 15.8)

27. B. Hsia[†], **M.S. Kim**[†], L.E Luna[†], N.R Mair, Y. Kim, C. Carraro, R. Maboudian, “*Templated 3D CVD ultrathin graphite networks with controllable geometry: synthesis and application as supercapacitor electrodes*”, *ACS Applied Materials & Interfaces* 6, 18413-18417 (2014). (IF: 8.5)
28. **M.S. Kim**, B. Hsia, C. Carraro, R. Maboudian, “*Flexible micro-supercapacitors with high energy density from simple transfer of photoresist-derived carbon electrodes*”, *Carbon* 74, 163-169 (2014). (IF: 10.5)
29. B. Hsia, **M.S. Kim**, M. Vincent, C. Carraro, R. Maboudian, “*Photoresist-derived porous carbon for on-chip micro-supercapacitors*”, *Carbon* 57, 395-400 (2013). (IF: 10.5)
30. J.P Alper, **M.S. Kim**, M. Vincent, B. Hsia, V. Radmilovic, C. Carraro, R. Maboudian, “*Silicon carbide nanowires as highly robust electrodes for micro-supercapacitors*”, *Journal of Power Sources* 230, 298-302 (2013). (IF: 8.1)
31. B. Hsia, **M.S. Kim**, C. Carraro, R. Maboudian, “*Cycling characteristics of high energy density, electrochemically activated porous-carbon supercapacitor electrodes in aqueous electrolytes*”, *Journal of Material Chemistry A* 1, 10518-10523 (2013). (IF: 10.7)

Peer-Reviewed Conference Proceedings

- **M.S. Kim**, B. Hsia, C. Carraro, R. Maboudian, “*Flexible micro-supercapacitors from photoresist-derived carbon electrodes on flexible substrates*”, The 27th International Conference (IEEE MEMS 2014, San Francisco, USA), 389-392 (2014).
- B. Hsia, S. Wang, **M.S. Kim**, C. Carraro, R. Maboudian, “*All solid-state micro-supercapacitors using ionogel electrolyte*”, The 17th International Conference (TRANSDUCERS 2013, Barcelona, Spain), 1328-1331 (2013).
- M. Vincent, **M.S. Kim**, C. Carraro, R. Maboudian, “*Silicon carbide nanowires as an electrode material for high-temperature supercapacitor*”, The 25th International Conference (IEEE MEMS 2012, Paris, France), 39-42 (2012).
- B. Hsia, M. Vincent, **M.S. Kim**, C. Carraro, R. Maboudian, “*Photoresist-derived porous carbon for integrated on-chip energy storage*”, 2012 Hilton Head Solid-State Sensors, Actuators and Microsystems Workshop, 254-255 (2012).

AWARD & RECOGNITION

-
- **MIT IDSS Data Science and Machine Learning**: Making Data-Driven Decisions, 2nd Place in Data Science and Machine Learning Program, MIT IDSS (2025).
 - **Distinguished Student Speaker Chemical Engineering Convocation**, Selected as a distinguished student in the chemical engineering department at Stanford to present research areas of Life, Energy, and the Environment, Stanford (2023).
 - **IOP Trusted Reviewer Award**, Demonstrating a high level of peer review competence, with the ability to critique scientific literature to an excellent standard, Institute of Physics (2023)
 - **KIST Award**, The highest award of KIST given to the best employee who has provided the most creative and innovative contribution to KIST's development, Korea Institute of Science and Technology (2018)
 - **John M. Prausnitz Award for Outstanding Undergraduate Research in Chemical and Biomolecular Engineering**, The highest graduation award for the one distinguished undergraduate, Department of Chemical & Biomolecular Engineering at UC Berkeley (2014)
 - **Dean's honor list of 2013**, Recognition from College of Chemistry Dean for outstanding academic performance, Department of Chemical & Biomolecular Engineering at UC Berkeley (2013)

Prof. KIM Mun Sek

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- **College of Chemistry Undergraduate Research Stipend Winner**, *Research stipend grant from College of Chemistry Department to highly selective undergraduate researchers*, Department of Chemical & Biomolecular Engineering at UC Berkeley (2013)
- **Green Chemistry Competition third-prize winner**, *Proposing the most innovative ideas on Green Chemistry with \$3,000 award*, Big Ideas at Berkeley (2011)

PATENTS

US/WO PATENTS

- Organized nanoparticulate and microparticulate coatings and methods of making and using same
Mun Sek Kim, Snehashis Choudhury, Lin Ma, Lynden A. Archer
[US11309613B2](#) & 2022-04-19 (Registered)
[CN108602017A](#) & 2018-09-28 (Pending)
[WO2017100758A1](#) & 2017-06-15 (Registered)
- Artificial solid electrolyte interphase of metallic anode for secondary battery including amino-functionalized carbon structures to protect anode material, method for producing anode and lithium metal secondary battery including anode produced by the method
Mun Sek Kim, Won Il Cho, Seung Hun Lee, Min-Seop Kim, Van Dung Do, In Wook Nah, In-Hwan Oh
[US10923726B2](#) & 2021-02-16 (Registered)
- Method for producing an anode for a lithium metal secondary battery including a MXene thin film
Mun Sek Kim, Won Il Cho, Ji-Hyun Ryu, Seung Hun Lee
[US10923725B2](#) & 2021-02-16 (Registered)
- Aqueous binder for lithium-sulfur secondary battery, preparation method thereof and lithium-sulfur secondary battery comprising the same
Won Il Cho, Van Dung Do, **Mun Sek Kim**, In Wook Nah, Min-Seop Kim
[US10840514B2](#) & 2020-11-17 (Registered)
- Electrolyte system for lithium metal secondary battery and lithium metal secondary battery including the same
Mun Sek Kim, Won Il Cho, Ji-Hyun Ryu, In Wook Nah, Min-Seop Kim, Sun Min Park
[US10804567B2](#) & 2020-10-13 (Registered)
- Polyethyleneimine-attached carbonaceous material and separator for lithium-sulfur battery coated with the same
Mun Sek Kim, Won Il Cho, In Wook Nah, Young Rok Lim, Sun Min Park, In-Hwan Oh
[US10727466B2](#) & 2020-07-28 (Registered)
- Anode including functionalized metal oxide nanoparticles, a method for manufacturing the anode, a secondary battery including the anode, and a device including the secondary battery
Mun Sek Kim, Won Il Cho, In Wook Nah, In-Hwan Oh, Van Dung Do
[US10658670B2](#) & 2020-05-19 (Registered)
- Lithium metal anode comprising Langmuir-Blodgett films as an artificial solid electrolyte interface layer, lithium metal battery comprising the same, and preparation method thereof
Mun Sek Kim, Won Il Cho, In Wook Nah, Min Seop Kim, Lynden A. Archer, Snehashis Choudhury, Zhengyuan Tu
[US10243197B2](#) & 2019-03-26 (Registered)

KR PATENTS

- Lithium-based hybrid anode material, preparation method thereof and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, Seung Hun Lee, Ji-Hyun Ryu, In Wook Nah
[KR 102200268](#) & 2021-01-04 (Registered)
- Aqueous binder for lithium sulfur secondary battery, preparation method thereof and lithium sulfur secondary battery comprising the same
Won Il Cho, Van Dung Do, **Mun Sek Kim**, In Wook Nah, Min-Seop Kim
[KR 102152982](#) & 2020-09-01 (Registered)

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- Artificial solid electrolyte interphase for protecting anode of rechargeable battery, preparation method thereof and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, Seung Hun Lee, Ji-Hyun Ryu, In Wook Nah
[KR 102118023](#) & 2020-05-27 (Registered)
- Coating composition for separator of secondary battery comprising p-doped graphitic carbon nitride, preparation method thereof and li-s battery comprising the same
Won Il Cho, Van Dung Do, **Mun Sek Kim**, Min-Seop Kim, In Wook Nah
[KR 102113222](#) & 2020-05-14 (Registered)
- Anode for lithium metal battery comprising Nb₂C thin film, preparation method thereof and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, Ji-Hyun Ryu, Seung Hun Lee
[KR 102100849](#) & 2020-04-08 (Registered)
- Anode for lithium metal battery comprising Ti₂C thin film, preparation method thereof and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, Ji-Hyun Ryu, Seung Hun Lee
[KR 102100854](#) & 2020-04-08 (Registered)
- Anode for lithium metal battery comprising Ti₃C₂ thin film, preparation method thereof and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, Ji-Hyun Ryu, Seung Hun Lee, Sun Min Park
[KR 102100876](#) & 2020-04-08 (Registered)
- Electrolyte system and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, Ji-Hyun Ryu, In Wook Nah, Min-Seop Kim, Sun Min Park
[KR 102099387](#) & 2020-04-03 (Registered)
- Interlayer for protecting anode of rechargeable battery, preparation method thereof and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, Min-Seop Kim, Sun Min Park, Van Dung Do, Ji-Hyun Ryu
[KR 102069284](#) & 2020-01-16 (Registered)
- Electrolyte additive salts system and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, Ji-Hyun Ryu, Seung Hun Lee, Kyung Won Lee
[KR 102063821](#) & 2020-01-02 (Registered)
- Electrolyte systems and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, Ji-Hyun Ryu, In Wook Nah, Min-Seop Kim, Sun Min Park
[KR 102063821](#) & 2020-01-02 (Registered)
- Anode formed solid electrolyte interphase protective layer comprising graphene nanoparticle and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, In Wook Nah, Van Dung Do, Min-Seop Kim, Ji-Hyun Ryu, Sun Min Park
[KR 102059104](#) & 2019-12-18 (Registered)
- Electrolyte additive solvents system and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, Ji-Hyun Ryu, Seung Hun Lee
[KR 102046538](#) & 2019-11-13 (Registered)
- Phosphorus doped and phosphate functionalized reduced graphene oxide artificial solid electrolyte interphase and anode for lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, In Wook Nah, Ji-Hyun Ryu, Min-Seop Kim, Sun Min Park
[KR 102046554](#) & 2019-11-13 (Registered)
- Nitrogen doped reduced graphene oxide artificial solid electrolyte interphase and anode for lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, In Wook Nah, Ji-Hyun Ryu, Sun Min Park, Min-Seop Kim
[KR 102046547](#) & 2019-11-13 (Registered)

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- Solid electrolyte interphase comprising amino functionalized multi-walled carbon nanotube for protecting anode of rechargeable battery, preparation method thereof and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, Seung Hun Lee, Min-Seop Kim, Van Dung Do
[KR 102035778](#) & 2019-10-17 (Registered)
- Polyethyleneimine-attached carbonaceous material and separator for lithium-sulfur battery coated with the same
Mun Sek Kim, Won Il Cho, In Wook Nah, Young Rok Lim, Sun Min Park, In-Hwan Oh
[KR 101997074](#) & 2019-07-01 (Registered)
- Separator with sandwiched configuration for secondary battery, method for fabricating the same, and secondary battery comprising the same
Mun Sek Kim, Won Il Cho, 나인, Min-Seop Kim, Sun Min Park, Byung Ik Jang, Seung Hun Lee
[KR 101993277](#) & 2019-06-20 (Registered)
- Solid electrolyte interphase comprising amino functionalized reduced graphene oxide thin film for protecting anode of rechargeable battery, preparation method thereof and lithium metal battery comprising the same
Mun Sek Kim, Won Il Cho, In Wook Nah, In-Hwan Oh, Seung Hun Lee
[KR 101972034](#) & 2019-04-18 (Registered)
- Cathode for lithium-sulfur battery with polyethyleneimine and manganese dioxide, and lithium-sulfur battery comprising the same
Mun Sek Kim, Won Il Cho, Van Dung Do, Seung Hun Lee, Byung Ik Jang, Min-Seop Kim, In Wook Nah
[KR 101930395](#) & 2018-12-12 (Registered)
- Lithium metal anode comprising langmuir-blodgett layer, battery comprising the same, and preparation method thereof
Mun Sek Kim, Won Il Cho, In Wook Nah, Min-Seop Kim, Lynden A. Archer
[KR 101913338](#) & 2018-10-24 (Registered)
- Functionalized metal oxide nanoparticles and lithium anode for lithium-sulfur battery including the same
Mun Sek Kim, Won Il Cho, In Wook Nah, In-Hwan Oh, Van Dung Do
[KR 101897206](#) & 2018-09-04 (Registered)

JOURNAL REVIEWER (November 2016 – Present)

Science Advances, Advanced Materials, Advanced Energy Materials, ACS Nano, Advanced Materials Interfaces, Materials Today Energy, Small, ACS Applied Materials & Interfaces, Science Bulletin, Journal of The Electrochemical Society, and Carbon.

PRESENTATIONS

- **M.S. Kim**, “Suspension Electrolytes for Lithium Metal Batteries”, *Stanford University Chemical Engineering Convocation Distinguished Student Speaker*, September 2023. (Oral)
- **M.S. Kim**, “Suspension Electrolytes for Lithium Metal Batteries”, *Stanford StorageX Tech Talk*, March 2023. (Oral)
- **M.S. Kim**, “Suspension electrolyte with modified Li^+ solvation environment for lithium metal batteries”, *SLAC Battery 500*, May 2022. (Poster)
- **M.S. Kim**, “Suspension electrolyte with modified Li^+ solvation environment for lithium metal batteries”, *Stanford StorageX Tech Talk*, February 2022. (Oral)
- **M.S. Kim**, “Suspension Electrolytes for lithium metal batteries”, *SLAC Ola Electric*, February 2022. (Oral)
- **M.S. Kim**, “Langmuir-Blodgett Artificial Solid Electrolyte Interphase for Lithium Metal Batteries”, *The International Battery Association*, March 2018. (Poster)
- **M.S. Kim**, “Amino Functionalized Multi-walled Carbon Nanotube Framework as Stable Artificial Solid-Electrolyte Interphase for Lithium Metal Anode”, *17th Autumn Korea Electrochemical Society*, October 2017. (Poster)
- **M.S. Kim**, “Langmuir-Blodgett Artificial Solid Electrolyte Interphase layer for Lithium Metal Batteries”, *The 9th Asian Conference on Electrochemical Power Sources*, August 2017. (Poster)
- **M.S. Kim**, “Developing 260 Wh kg^{-1} Lithium-metal based battery technology, cell, and pack-level”, *The Society for Aerospace System Engineering*, April 2017. (Oral)

TEACHING EXPERIENCE

Teaching Assistant: Polymer Chemistry CHEMENG 464, Stanford University (Winter 2023)

Feedback:

“Always willing to help and explain concepts from the ground up, allowing me to understand the complexities of different pathways”

“He is very friendly and tries to help people. He acknowledges when he doesn't know an answer right away”

“Very helpful TA, truly does care about the students learning”

“He was a very nice TA. He was answering my questions very quickly and effectively”

“He did a great job of explaining the chemistry behind the homework synthesis papers”

“Simple explanations of complicated topics”

“Articulate, knowledgeable, respectful”

“Approachable Friendly Detailed”

Teaching Assistant: Solid structures and properties of polymers CHEMENG 469, Stanford University (Autumn 2021)

Feedback:

“He did a great job of taking care of logistical aspects of the course and helping everything run smoothly”

“He was very helpful with understanding problem sets”

“He helped my friend solve the homework, so she was able to help me solve the homework. He was always in class, always responsive, and helped the class logistics run smoothly”

“1) Timeliness - feedback for our work was returned quickly 2) Communication with the class via Canvas 3) Assistance during lab demonstration”

“Dedication to helping on psets”

MENTORING & SUPERVISING

- 2024 – 2025 **SES AI** (Woburn, MA, USA)
• Michael Domingo – Engineer at SES AI
- 2019 - 2024 **Stanford University** (Stanford, CA, USA)
• Junyoung Lee – Ph.D. Candidate at Stanford University
• Jun Ho Lee – Ph.D. Candidate at Stanford University
• Jing Wang – Ph.D. Candidate at Stanford University
- 2016 - 2019 **Korea Institute of Science and Technology** (Seoul, Rep. of Korea)
• Seung Hun Lee – Ph.D. in Materials Science and Engineering at Korea University (LG Energy Solution)
• Ji Hyun Ryu – M.S. in Materials Science and Engineering at Korea University (Samsung SDI)
• Sun Min Park – M.S. in Materials Science and Engineering at Korea University (SK Innovation)
• Byung Ik Jang – Research Intern at KIST (Samsung Electronics)

ACTIVITIES

- 2024 – 2025 **Roman Catholic Community, Member**
• Roman Catholic member at St. Joseph Parish, Wakefield, MA
- 2020 - 2024 **Battery Journal Club, Member**
• Discussing battery-related research with students at Stanford and UC Berkeley
- 2019 - 2024 **Roman Catholic Community, Member**
• Roman Catholic member at the Church of Nativity, Menlo Park, CA
- 2016 - 2019 **Agape Youth Group, Alter server**
• Roman Catholic fellowship for young Catholics
- 2014 - 2016 **CCCC, Cornell University, Member**
• Roman Catholic fellowship for Korean and Korean-American students who strive to build a community of support in strengthening their faith in God
- 2012 - 2014 **Sigma Alpha Lambda, UC Berkeley, National Member**
• Promotes academic excellence and leadership
- 2011 - 2014 **American Institute of Chemical Engineers (AIChE), UC Berkeley, National Member**
• National organization that serves to foster excellence in chemical engineering education and global practice, and to create networking opportunities with professional members in the industry and academia
- 2010 - 2014 **Chun Jin Am, UC Berkeley, Planning Committee Member**
• Roman Catholic fellowship for Korean and Korean-American students who strive to build a community of support in strengthening their faith in God

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