

JIHO KANG

jihokang@utexas.edu

EDUCATION

The University of Texas at Austin Ph.D. in Chemical Engineering, to be completed 2024 Overall GPA: 4.00/4.00	Aug. 2019 – Present
Seoul National University M. S. in Chemical and Biological Engineering Overall GPA: 4.11/4.30	Mar. 2017 – Feb. 2019
Seoul National University B. S. in Chemical and Biological Engineering Overall GPA: 3.89/4.30 (Military Service)	Mar. 2011– Feb. 2017 Feb. 2013 – Nov. 2014

RESEARCH EXPERIENCE

The University of Texas at Austin Graduate Researcher (Advisor: Prof. Delia Milliron)	Oct. 2019 – Present
Seoul National University IBS Researcher (Advisor: Prof. Yung-Eun Sung) Graduate Researcher (Advisor: Prof. Yung-Eun Sung) Undergraduate Researcher (Advisor: Prof. Yung-Eun Sung)	Mar. 2019 – Jul. 2019 Mar. 2017 – Feb. 2019 Aug. 2016 – Feb. 2017
SK Hynix Inc. Research Intern Icheon, Gyeonggi, Republic of Korea	Dec. 2015 – Feb. 2016

PUBLICATIONS

‡Co-first authors *Corresponding author

1. **J. Kang**[‡], Z. M. Sherman[‡], D. L. Conrad, H. S. N. Crory, M. N. Dominguez, S. A. Valenzuela, E. V. Anslyn*, T. M. Truskett*, D. J. Milliron*, “Structural control of plasmon resonance in molecularly linked metal oxide nanocrystal gel assemblies,” submitted.
2. Z. M. Sherman, K. Kim, **J. Kang**, B. J. Roman, H. S. N. Crory, D. L. Conrad, S. A. Valenzuela, E. Y. Lin, M. N. Dominguez, S. L. Gibbs, E. V. Anslyn*, D. J. Milliron*, T. M. Truskett*, “Plasmonic response of complex nanoparticle assemblies,” *Nano Letters*, 2023 23, 3030–3037.
3. **J. Kang**, Z. M. Sherman, H. S. N. Crory, D. L. Conrad, M. W. Berry, B. J. Roman, E. V. Anslyn*, T. M. Truskett*, D. J. Milliron*, “Modular mixing in plasmonic metal oxide nanocrystal gels with thermoreversible links,” *Journal of Chemical Physics*, 2023 158, 024903.
4. C. K. Ofosu, **J. Kang**, T. M. Truskett*, D. J. Milliron*, “Effective hard-sphere repulsions between oleate-capped colloidal metal oxide nanocrystals,” *Journal of Physical Chemistry Letters*, 2022 13, 11323–11329.

5. J. S. Kang[‡], S. Kim[‡], **J. Kang**, H. Joo, J. Jang, K. Jo, S. Park, H.-i. Kim, S. J. Yoo, J. Yoon, Y.-E. Sung, T. A. Hatton, “Surface Electrochemistry of Carbon Electrodes and Faradaic Reactions in Capacitive Deionization,” *Environmental Science & Technology*, 2022 56, 12602–12612.
6. **J. Kang**[‡], S. A. Valenzuela[‡], E. Y. Lin, M. N. Dominguez, Z. M. Sherman, T. M. Truskett*, E. V. Anslyn*, D. J. Milliron*, “Colorimetric quantification of linking in thermoreversible nanocrystal gel assemblies,” *Science Advances*, 2022 8, eabm7364.
7. A. M. Green, C. K. Ofosu, **J. Kang**, E. V. Anslyn*, T. M. Truskett*, D. J. Milliron*, “Assembling inorganic nanocrystal gels”, *Nano Letters*, 2022 4, 1457–1466.
8. M. N. Dominguez, M. P. Howard, J. M. Maier, S. A. Valenzuela, Z. M. Sherman, J. F. Reuther, L. C. Reimnitz, **J. Kang**, S. H. Cho, S. L. Gibbs, A. K. Menta, D. L. Zhuang, A. van der Stok, S. J. Kline, E. V. Anslyn*, T. M. Truskett*, D. J. Milliron*, “Assembly of linked nanocrystal colloids by reversible covalent bonds,” *Chemistry of Materials*, 2020 32, 10235-10245.
9. Y.-H. Lee, J. S. Kang*, J.-H. Park, **J. Kang**, I.-R. Jo, Y.-E. Sung*, K.-S. Ahn*, “Color-switchable electrochromic Co(OH)₂/Ni(OH)₂ nanofilms with ultrafast kinetics for multifunctional smart windows”, *Nano Energy* 2020 72, 104720.
10. M. Kim[‡], J. M. Yoo[‡], C.-Y. Ahn[‡], J.-H. Jang, Y. J. Son, H. Shin, **J. Kang**, Y. S. Kang, S. J. Yoo, K.-S. Lee*, Y.-E. Sung*, “Rational generation of Fe-N_x active sites in Fe-N-C electrocatalysts facilitated by Fe-N coordinated precursors for the oxygen reduction reaction”, *ChemCatChem* 2019 11, 1–8.
11. J. S. Kang[‡], **J. Kang**[‡], and Y.-E. Sung*, “Recent progress on design and synthesis of nitrides for mesoscopic and perovskite solar cells”, *ChemSusChem* (Invited Review), 2019 12, 772-786.
12. J. S. Kang[‡], **J. Kang**[‡], J. Chae[‡], Y. J. Son, J. Jeong, J. Kim, J.-Y. Kim, S. H. Kang, K.-S. Ahn*, Y.-E. Sung*, “Vapor-deposited tungsten carbide nano-dendrites as sulfur-tolerant electrocatalysts for quantum dot-sensitized solar cells”, *Journal of Electrochemical Society*, 2018 165, H954-H961.
13. J. S. Kang[‡], **J. Kang**[‡], D. Y. Chung[‡], Y. J. Son, S. Kim, S. Kim, J. Kim, J. Jeong, M. J. Lee, H. Shin, S. Park, S. J. Yoo, M. J. Ko, J. Yoon, and Y.-E. Sung*, “Tailoring the porosity of MOF-derived N-doped carbon electrocatalysts for highly efficient solar energy conversion”, *Journal of Materials Chemistry A*, 2018 6, 20170-20183.
14. J. Kim[‡], J. S. Kang[‡], J. Jeong, Y. J. Son, M. J. Lee, **J. Kang**, A. Lim, H. S. Park*, Y.-E. Sung*, “Electrochemically synthesized nanostructured iron carbide/carbon composite as a low-cost counter electrode for dye-sensitized solar cells”, *Journal of Power Sources* 2018 396, 213-219.
15. J. S. Kang[‡], J. Kim[‡], J. S. Kim, K. Nam, H. Jo, Y. J. Son, **J. Kang**, J. Jeong, H. Choe*, T.-H. Kwon*, Y.-E. Sung*, “Electrochemically synthesized mesoscopic nickel oxide films as photocathodes for dye-sensitized solar cells”, *ACS Applied Energy Materials* 2018 1, 4178-4185.
16. J. S. Kang[‡], J. Kim[‡], J.-Y. Kim, M. J. Lee, **J. Kang**, Y. J. Son, J. Jeong, S. H. Park, M. J. Ko*, and Y.-E. Sung*, “Highly efficient bifacial dye-sensitized solar cells employing polymeric counter electrodes”, *ACS Applied Materials & Interfaces* 2018 10, 8611-8620.
17. Y. J. Son[‡], J. S. Kang[‡], J. Yoon, J. Kim, J. Jeong, **J. Kang**, M. J. Lee, H. S. Park*, and Y.-E. Sung*, “Influence of TiO₂ particle size on dye-sensitized solar cells employing organic sensitizer and cobalt (III/II) redox electrolyte”, *The Journal of Physical Chemistry C* 2018 122, 7051-7060.

CONFERENCE PRESENTATIONS

1. **J. Kang**, Z. M. Sherman, H. S. N. Crory, D. L. Conrad, M. W. Berry, B. J. Roman, E. V. Anslyn, T. M. Truskett, D. J. Milliron, “Multi-component plasmonic nanocrystal gel assemblies with thermoreversible links” *Materials Research Society (MRS) Spring 2023*, Apr. 10–14, San Francisco, CA. Oral presentation.
2. **J. Kang**, S. A. Valenzuela, E. Lin, M. N. Dominguez, Z. M. Sherman, T. M. Truskett, E. V. Anslyn, D. J. Milliron, “Colorimetric quantification of linking in thermoreversible nanocrystal gel assemblies” *American Chemical Society (ACS) Spring 2022*, Mar. 20–24, San Diego, CA. Oral presentation.
3. **J. Kang**, J. S. Kang, J. Chae, K.-S. Ahn*, and Y.-E. Sung*, “RF sputtered tungsten carbide nano-dendrites as sulfur poisoning tolerant electrocatalysts for quantum dot-sensitized solar cells” *2018 Fall Meeting and Conference of the Korean Electrochemical Society (KECS)*, Yeosu, Republic of Korea. Nov. 1–3, 2018. Poster presentation.
4. **J. Kang**, J. S. Kang, D. Y. Chung, Y. J. Son, S. Kim, S. Kim, J. Kim, J. Jeong, and Y.-E. Sung*, “Porosity-tailored MOF-derived N-doped carbon as high-performance electrocatalysts for mesoscopic solar cells.” *The Europe-Korea Conference on Science and Technology*, Glasgow, United Kingdom. Oct. 19–24, 2018. Poster presentation.
5. J. Kim, J. S. Kang, M. J. Lee, Y. J. Son, J. Jeong, **J. Kang**, and Y.-E. Sung*, “Electrochemical synthesis of nanoporous tungsten carbide as efficient counter electrodes for dye-sensitized solar cells (DSCs).” *Asian Conference on Electrochemical Power sources (ACEPS-9)*, Gyeongju, Republic of Korea. Aug. 20–23, 2017. Poster presentation.

HONORS AND AWARDS

Phillips 66 Company

Phillips 66 Fellowship	2023
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The University of Texas at Austin

Dean's Prestigious Fellowship Supplement Awards	2019
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Phillips 66 Company

Phillips 66 Fellowship	2019
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Kwanjeong Educational Foundation

Study Abroad Scholarship	2019
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Seoul National University

Merit-Based Scholarship	2018
Lecture & Research Scholarship	2017
Merit-Based Scholarship	2017
Graduation with Honors (Cum Laude)	2017
Alumni Association Scholarship	2016
Eminence Scholarship	2016

The United States Army

Commendation Medal	2014
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The Surim Foundation

Surim Scholarship	2011
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OTHER EXPERIENCE

UT Austin Korean Student Association, Chemical Engineering (UTKSA-ChE)

President

Aug. 2021 – Jul. 2022

Young professionals exchange program

Aug. 2018

Europe-Korea global exchange program in Glasgow, United Kingdom

The Korean Federation of Science and Technology Societies (KOFST)

Military service as KATUSA (Korean Augmentation To the U. S. Army)

Feb. 2013 – Nov. 2014

Sergeant, AFN-K Casey, Dongducheon, Gyeonggi, Republic of Korea

Mentoring programs

Mentor School, The Tomorrow Foundation for Korean Youth & Rural Development Feb. 2013

SNU Active Mentoring program, Seoul National University Apr. 2012 – Dec. 2012

SNU-Jeongseon Mentoring Program, Seoul National University Aug. 2012

SNU Dream Camp, Chungryol Girls High School Feb. 2012