

JIHO KANG

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EDUCATION

The University of Texas at Austin Ph.D. in Chemical Engineering, to be completed Summer 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,” *ACS Nano*, 2024 17, 24218–24226.
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. Ofori, **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, 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” *American Chemical Society (ACS) Spring 2024*, Mar. 17 –21, New Orleans, LA. Oral presentation.
2. **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.
3. **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.
4. **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.
5. **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.
6. 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
The University of Texas at Austin	
Dean's Prestigious Fellowship Supplement Awards	2019
Phillips 66 Company	
Phillips 66 Fellowship	2019
Kwanjeong Educational Foundation	
Study Abroad Scholarship	2019
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
The Surim Foundation Surim Scholarship	2011

OTHER EXPERIENCE

Research Experience for Undergraduates (REU) Program, UT Austin Graduate Mentor – Jeffrey Y Liu	Aug. 2023 – Dec. 2023
UT Austin Korean Student Association, Chemical Engineering (UTKSA-ChE) President	Aug. 2021 – Jul. 2022
Young professionals exchange program Europe-Korea global exchange program in Glasgow, United Kingdom The Korean Federation of Science and Technology Societies (KOFST)	Aug. 2018
Military service as KATUSA (Korean Augmentation To the U. S. Army) Sergeant, AFN-K Casey, Dongducheon, Gyeonggi, Republic of Korea	Feb. 2013 – Nov. 2014
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