

JIHO KANG

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RESEARCH INTERESTS

Nanocrystal Assembly and Integration

Novel Material Characterization Techniques

EDUCATION

The University of Texas at Austin Ph.D. in Chemical Engineering, to be completed 2024	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 (Mandatory Military Service)	Mar. 2011– Feb. 2017 Feb. 2013 – Nov. 2014

RESEARCH EXPERIENCES

The University of Texas at Austin Graduate Researcher (Advisor: Prof. Delia Millrion)	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. 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.
2. 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

EXPECTED PUBLICATIONS

[‡]Co-first authors *Corresponding author

- 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”, submitted
- J. S. Kang[‡], **J. Kang**[‡], N. Kang[‡], H. Shin, D. Kang, S. Park, J. Jeong, S. U. Son*, Y.-E. Sung*, “Hollow and porous sulfur-doped carbon polyhedrons as electrocatalysts for mesoscopic solar cells”, in preparation.

CONFERENCE PRESENTATIONS

- 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 – Nov. 3, 2018. Poster presentation.
- 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 – Oct. 24, 2018. Poster presentation.
- 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 – Aug. 23, 2017. Poster presentation.

HONORS AND AWARDS

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 – 2016

TEACHING AND WORK EXPERIENCE

RF magnetron sputtering system operator Seoul National University	Aug. 2018 – Jul. 2019
IPCE system operator Seoul National University	Mar. 2017 – Jul. 2018
Teaching assistant Electrochemical Energy Engineering, Seoul National University	Sep. 2017 – Dec. 2017

LANGUAGE FLUENCY

Native in Korean, fluent in English

TOEFL: 114/120 (Reading 29/30, Listening 30/30, Speaking 26/30, Writing 29/30)

GRE: Verbal (159/170, 83%), Quantitative (168/170, 94%), Analytical Writing (4.0/6.0, 60%)

OTHER EXPERIENCES

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
SNU-Jeongseon Mentoring Program, Seoul National University
SNU Dream Camp, Chungryol Girls High School

Apr. 2012 – Dec. 2012
Aug. 2012
Feb.2012

Soccer club - *Socchem*

Mar. 2011 – Dec. 2016

Winger, School of Chemical and Biological Engineering, Seoul National University