




# MinJae Kim

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## EDUCATION

- Sep. 2025 - **Stanford University**  
*PhD Student, Department of Materials Science and Engineering*
- Feb. 2019 - **Korea Advanced Institute of Science and Technology (KAIST)**  
Feb. 2025 *Bachelor of Science in Materials Science and Engineering*
- Total GPA of 4.22/4.3 (99.2/100), *Summa Cum Laude*, Honor student
  - Valedictorian and Representative Graduate at KAIST Commencement 2025 (Link)
  - Global Leadership Award (Top 18 out of ca. 11,000 students)
  - College of Engineering Leadership Award (Top 10 out of ca. 3,000 students)
  - Dean's List (Top 3% in College of Engineering)
  - Departmental Honor Scholarship (Top 4 out of ca. 120 students)
  - Fulfilled obligatory military service in Republic of Korea Army (Mar. 2021 - Sep. 2022)

## PUBLICATIONS

3. M.J. Kim<sup>\*</sup>, **Polarization-specific trans-scale optical simulation of organic light-emitting diodes**, *Under review at Applied Physics Letters*
2. M.J. Kim, J. Kim, S. Yoo<sup>\*</sup>, **Near-planar light outcoupling structures with a finite lateral dimension for ultra-efficient and crosstalk-free OLED displays**, *Accepted at Nature Communications*
1. M.J. Kim<sup>†</sup>, D. Choi<sup>†</sup>, C. Kang, S. Yoo<sup>\*</sup>, **Ultralow-power carbon dioxide sensor for real-time breath monitoring**, *Device*, 2025, DOI: 10.1016/j.device.2024.100681

## RESEARCH EXPERIENCE

- Mar. 2024 - **Integrated Organic Electronics Lab., KAIST**  
Aug. 2025 *Research Fellow (Advisor: Prof. Seunghyup Yoo)*
- Devised and led project on near-planar light outcoupling structure for ultra-efficient organic light-emitting diodes through trans-scale design
    - 🏆 Won Best Paper Award at Optics and Photonics Congress 2024
  - Conceived and developed ultralow-power and stable wearable pCO<sub>2</sub> sensor for seamless respiratory monitoring
    - 🏆 Selected as representative research outcome of KAIST (Video)
    - 🏆 Received 2024 KAIST Undergraduate Research Program (URP) grant
    - 🏆 Won Grand Prix (Top 3 out of 60 projects) at 2024 URP Workshop
- July 2022 - **Next-Generation Optoelectronic Nanomaterials Lab., KAIST**  
Dec. 2023 *Undergraduate Researcher (Advisor: Prof. Himchan Cho)*
- Conceived and led project on highly luminescent and stable quasi-2D Dion-Jacobson phase perovskites based on multi-functional asymmetric spacer
    - 🏆 Received 2023 KAIST Undergraduate Research Program (URP) grant
    - 🏆 Won Grand Prix (Top 3 out of 60 projects) at 2023 URP Workshop
  - Devised and worked on project on effective passivation of quasi-2D perovskites enabled by  $\pi$ -conjugated planar molecules
    - 🏆 Won Best Poster Presentation Award at 2023 Spring Meeting of Korean Institute of Metals and Materials

# HONORS AND AWARDS

## Scholarships

2025 - 2030	<b>Kwanjeong Doctoral Study Abroad Fellowship</b> , Kwanjeong Foundation
2023 - 2024	<b>Woonhae Scholarship</b> , Woonhae Foundation
2023	<b>Young-Han Kim Global Leader Scholarship</b> , KAIST
2022 - 2026	<b>Dream Supporter Scholarship</b> , Global Hansang Dream Foundation
2021 - 2025	<b>KAIST Presidential Fellowship</b> , KAIST
2019 - 2025	<b>National Presidential Science Scholarship</b> , President of South Korea

## Honors and Awards

2026	<b>National Delegate to Global Young Scientists Summit</b> , National Research Foundation of Singapore
2024	<b>National Delegate to 73<sup>rd</sup> Lindau Nobel Laureate Meeting</b> , Korean Academy of Science and Technology
2024	<b>NUS Young Fellow</b> , National University of Singapore
2023	<b>Young Future Energy Leader</b> , Khalifa University
2023	<b>Representative of KAIST, Young Engineers Honor Society</b> , National Academy of Engineering of Korea
2021	<b>Talent Award of Korea</b> , Ministry of Education
2020	<b>Nobel Ceremony Guest and National Delegate</b> , Stockholm International Youth Science Seminar (SIYSS)

## PRESENTATIONS

4. M.J. Kim, D. Choi, S. Yoo\*, **Ultralow-power, stable carbon dioxide sensor for real-time breath monitoring**, *Korean Meeting on Information Display* (Poster), 2025
3. M.J. Kim, J. Kim, S. Yoo\*, **Near-planar light outcoupling structure for ultra-efficient organic light-emitting diodes**, *Optics and Photonics Congress* (Oral), 2024  
🏆 *Best Paper Award*
2. M.J. Kim, H. Cho\*, **Effective passivation of quasi-2D perovskites enabled by  $\pi$ -conjugated planar molecules**, *7<sup>th</sup> International Conference on Advanced Electromaterials* (Oral), 2023
1. M.J. Kim, S. Shin, H. Cho\*, **Highly luminescent and stable quasi-2D perovskites based on multi-functional asymmetric spacer**, *Spring Meeting of Korea Institute of Metals and Materials* (Poster), 2023  
🏆 *Best Poster Presentation Award*

## SKILLS

<b>Language</b>	English (fluent, TOEFL iBT: 106), Korean (native) L <sup>A</sup> T <sub>E</sub> X(advanced), MATLAB (advanced), Python (moderate), HTML (moderate)
<b>Simulation</b>	LightTools (advanced), ChemOffice (advanced), Lumerical (novice), COMSOL Multiphysics (novice)
<b>Technical</b>	Optical and photonic design of optoelectronics, PeLED/OLED fabrication and characterization, Organic synthesis and analysis

## REFERENCE

### Guosong Hong, PhD

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### Seunghyup Yoo, PhD

Endowed Chair Professor at KAIST

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