

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*, **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*, **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†, D. Choi†, C. Kang, S. Yoo*, **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 pCO₂ 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 π-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 **Kwanjeong Doctoral Study Abroad Fellowship**, Kwanjeong Foundation
2023 - 2024 **Woonhae Scholarship**, Woonhae Foundation
2023 **Young-Han Kim Global Leader Scholarship**, KAIST
2022 - 2026 **Dream Supporter Scholarship**, Global Hansang Dream Foundation
2021 - 2025 **KAIST Presidential Fellowship**, KAIST
2019 - 2025 **National Presidential Science Scholarship**, President of South Korea

Honors and Awards

- 2026 **National Delegate to Global Young Scientists Summit**, National Research Foundation of Singapore
2024 **National Delegate to 73rd Lindau Nobel Laureate Meeting**, Korean Academy of Science and Technology
2024 **NUS Young Fellow**, National University of Singapore
2023 **Young Future Energy Leader**, Khalifa University
2023 **Representative of KAIST, Young Engineers Honor Society**, National Academy of Engineering of Korea
2021 **Talent Award of Korea**, Ministry of Education
2020 **Nobel Ceremony Guest and National Delegate**, 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 π -conjugated planar molecules**, *7th 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

- Language** English (fluent, TOEFL iBT: 106), Korean (native)
 \LaTeX (advanced), MATLAB (advanced), Python (moderate), HTML (moderate)
- Simulation** LightTools (advanced), ChemOffice (advanced), Lumerical (novice), COMSOL Multiphysics (novice)
- Technical** Optical and photonic design of optoelectronics, PeLED/OLED fabrication and characterization, Organic synthesis and analysis

REFERENCE

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