




# MinJae Kim

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## EDUCATION

- Feb. 2019 - **Korea Advanced Institute of Science and Technology (KAIST)**  
Feb. 2025 *Undergraduate, Department of Materials Science and Engineering*
- Total GPA of 4.22/4.3 (99.2/100), *Summa Cum Laude*, Honor student
  - Valedictorian speaker 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)

## RESEARCH EXPERIENCE

- Mar. 2024 - **Integrated Organic Electronics Lab., KAIST**  
Present *Undergraduate Researcher (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
    - Received KAIST Undergraduate Research Program (URP) grant
    - Won Grand Prix (Top 3 out of 60 projects) at 2024 URP Workshop
- June 2023 - **Evans Lab., Wellman Center for Photomedicine, Massachusetts General Hospital**  
Aug. 2023 *Research Intern (Advisor: Prof. Conor L. Evans)*
- Enabled intrinsically stretchable optochemical pCO<sub>2</sub> sensors with block copolymer matrices
  - Won second place and People's Choice Award (Top 4 out of ca. 30 students) at poster session of Harvard-MIT Summer Institute at MGH
- 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 KAIST Undergraduate Research Program (URP) grant
    - Won Grand Prix (Top 3 out of 60 projects) at 2023 URP Workshop
    - Won Best Poster Presentation Award at 2023 Spring Meeting of Korean Institute of Metals and Materials
  - Devised and worked on project on effective passivation of quasi-2D perovskites enabled by  $\pi$ -conjugated planar molecules

## PUBLICATIONS

2. M.J. Kim, J. Kim, S. Yoo\*, **Near-planar light outcoupling structure for ultra-efficient organic light-emitting devices**, *In preparation*
1. M.J. Kim<sup>†</sup>, D. Choi<sup>†</sup>, C. Kang, S. Yoo\*, **An ultralow-power, stable carbon dioxide sensor for real-time breath monitoring**, *Device*, DOI: 10.1016/j.device.2024.100681

# HONORS AND AWARDS

## Scholarships

2023 - 2024	<b>Woonhae Scholarship</b> , Woonhae Foundation
2023	<b>Young-Han Kim Global Leader Scholarship</b> , KAIST
2022 - 2025	<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

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)
2020	<b>Cadet of Research Officer for National Defense</b> , Ministry of Science and ICT, Ministry of Defense

## EXTRACURRICULAR

Sep. 2020 - Present	<b>Young Engineers Honor Society, National Academy of Engineering of Korea</b> <i>2023 Representative of KAIST, Full member</i> <ul style="list-style-type: none"><li>Designed and organized Junior Engineering Class, where 5+ KAIST students go outreach for and teach 100+ elementary and middle school students in community annually</li><li>Delivered lectures at Specialty Info Sessions for high school students</li></ul>
Jan. 2020 - Feb. 2021	<b>Samsung Dreamclass, Samsung Welfare Foundation</b> <i>Mentor (Mathematics and Programming)</i> <ul style="list-style-type: none"><li>Conducted lectures for two classes of 10 and 3 underprivileged students respectively, developed teaching materials, marked assignments daily, and answered questions in person</li><li>Won Excellence in Mentorship Award given to top 10% of mentors</li></ul>

## 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

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