MinJae Kim

E3-2 Room #6201, KAIST
Daehak-ro 291, Yuseong-gu
Daejeon 34141, South Korea

mj3259
mj3259@kaist.ac.kr
https://mj3259.github.io

EDUCATION

Feb. 2019 - Feb. 2025 **Korea Advanced Institute of Science and Technology (KAIST)**
Undergraduate, Department of Materials Science and Engineering

- Total GPA of 4.23/4.3 (99.93/100), Honor Student
- 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 - Present **Integrated Organic Electronics Lab., KAIST**
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
  - Received KAIST Undergraduate Research Program (URP) grant
  - Awarded Best Paper Award at Optics and Photonics Congress 2024
- Conceived and developed ultralow-power and stable wearable pCO_2 sensor for seamless respiratory monitoring

June 2023 - Aug. 2023 **Evans Lab., Wellman Center for Photomedicine, Massachusetts General Hospital**
Research Intern (Advisor: Prof. Conor L. Evans)

- Enabled intrinsically stretchable optochemical pCO_2 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 - Dec. 2023 **Next-Generation Optoelectronic Nanomaterials Lab., KAIST**
Undergraduate Researcher (Advisor: Prof. Himchan Cho)

- 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
  - Awarded Grand Prix (Top 3 out of 60 projects) at 2023 URP Workshop
  - Awarded 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 π-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†, D. Choi†, C. Kang, S. Yoo*, **An ultralow-power, stable carbon dioxide sensor for real-time breath monitoring**, *Accepted (Device by Cell Press)*

HONORS AND AWARDS

Scholarships

2023 - 2024 **Woonhae Scholarship**, Woonhae Foundation
2023 **Young-Han Kim Global Leader Scholarship**, KAIST
2022 - 2025 **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

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)
2020 **Cadet of Research Officer for National Defense**, Ministry of Science and ICT, Ministry of Defense

EXTRACURRICULAR

Sep. 2020 - Present **Young Engineers Honor Society, National Academy of Engineering of Korea**
2023 Representative of KAIST, Full member

- Designed and organized Junior Engineering Class, where 5+ KAIST students go outreach for and teach 100+ elementary and middle school students in community annually
- Delivered lectures at Specialty Info Sessions for high school students

Jan. 2020 - Feb. 2021 **Samsung Dreamclass, Samsung Welfare Foundation**
Mentor (Mathematics and Programming)

- Conducted lectures for two classes of 10 and 3 underprivileged students respectively, developed teaching materials, marked assignments daily, and answered questions in person
- Won Excellence in Mentorship Award given to top 10% of mentors

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

Seunghyup Yoo, PhD
Endowed Chair Professor at KAIST
+82 42-350-3483
syoo.ee@kaist.edu

Himchan Cho, PhD
Associate Professor at KAIST
+82 42-350-3344
himchan@kaist.ac.kr

Conor L. Evans, PhD
Associate Professor at Harvard University
+1 617-726-1089
evans.conor@mgh.harvard.edu

Byungha Shin, PhD
Associate Professor at KAIST
+82 42-350-3315
byungha@kaist.ac.kr

Daniel Seungbum Hong, PhD
Professor at KAIST
+82 42-350-3324
seungbum@kaist.ac.kr