	■ Contacts PI : E3-2 #2221 TEL : 042-350-7439 Lab : E3-2 #2222, #2232 TEL : 042-350-7539 Homepage : janglab.org Email : jang.minseok@kaist.ac.kr
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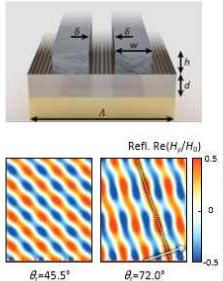
■ Current member status (2025 Spring): 1 research professor, 9 PhD students, 8 MS students, 3 undergrads

■ Research Areas

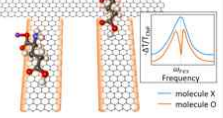
We understand the properties of light in ultra-small, subwavelength scales and develop technologies in the field of imaging, sensing, information processing, displays, and quantum computing

Active Nanophotonic Devices

1 Active Metasurfaces

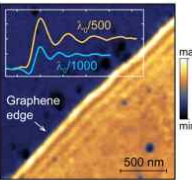


2 Molecular Sensing

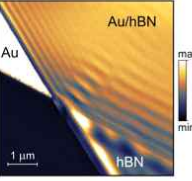


Low-Dimensional Polaritons

1 Plasmon-Polaritons

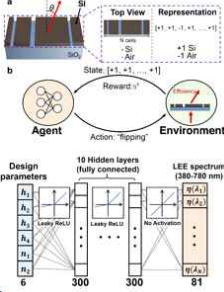


2 Phonon-Polaritons

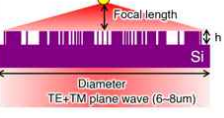


Inverse-Design of Optical Devices

1 Deep Learning



2 Adjoint Method



■ Recommended courses and Potential career paths

Theoretical research: To analyze and design photonic device functionalities, courses such as 'Electromagnetics', 'Quantum mechanics', and 'Fundamentals of photonics' are recommended.

Experimental research: The following courses 'Introduction to physical electronics', 'Semiconductor devices', 'Semiconductor IC technology', etc. are recommended to prepare oneself for fabrication of photonic devices.

<u>Alumni</u>	Academia (Post-doc: MIT, UC Berkeley, PhD Program: Caltech, Harvard, Yale, KAIST)
<u>Career path</u>	Industry (Samsung Electronics, Samsung Displays, SK Hynix, LG Innotech, KC Machine Learning Lab)

■ About our lab and prospective team members

We are currently accepting graduate students who want a research experience in a lab. What we offer:

- (1) Research along the **interface between science and engineering**: Understand the fundamentals behind physical phenomena, and apply it for engineering purposes.
- (2) You can choose between theory/simulations or experiment, or both, depending on your aptitude or preferences.
- (3) **Collaboration with other labs abroad** (Caltech, Harvard, Yale, UW Madison, EPFL, Southern Denmark Univ. (SDU))
Yale (Owen Miller): 3 graduate students visited for 6 months (2022-2023)
Caltech (Harry Atwater): 2 graduate students visited for 6 months (2024-2025)
SDU (Asger Mortensen): 1 graduate student visited for 6 months (2024-2025)
EPFL (Giulia Tagliabue): 1 graduate student is visiting for 6 months (2025-2026)

Our lab prides in our friendly and horizontal lab culture and student-driven researches. We respect every student's own times and schedules, and provide an academic environment to study and research in at one's own needs.

* **About the PI:** I myself was a KAIST undergraduate, class of 2006, who took classes in the same rooms of KAIST and did internships and undergrad research programs, developing my skills as a researcher. I take as a top priority to lead a lab that's the most beneficial for our members, and will try my hardest in **helping students find the research topics of their interest** and **creating a non-authoritative lab atmosphere blooming with fruitful discussions**.

■ Publications

[1] "Polaritonic Fourier crystal", Nature Communications (2025)

[2] "Electrostatic steering of thermal emission with active metasurface control of delocalized modes", Nature Communications (2024)

[3] "Graphene unlocks dispersion of topological polaritons", Nature Nanotechnology (2022).

[4] "Full 2π tunable phase modulation using avoided crossing of resonances", Nature Communications (2022).