



권민석 Min-Suk Kwon

전기전자공학과 / Electrical Engineering

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🌐 <https://sites.google.com/view/unist-uplab/>

LAB 106-610

Curriculum Vitae

2014~Present: Associate Professor, UNIST
 2012~2014: Assistant Professor, UNIST
 2009~2011: Assistant Professor, Sejong U.
 2007~2009: Full-time Lecturer, Sejong U.
 2006~2007: Senior Research Engineer, LG Electronics Institute of Technology
 2005~2006: Postdoctoral Research Associate, USC

Academic Credential

2005: Ph.D. in Electrical Engineering, KAIST
 2000: M. S. in Electrical Engineering, KAIST
 1998: B. S. (Summa Cum Laude) in Electrical Engineering, KAIST

Awards/Honors/Memberships

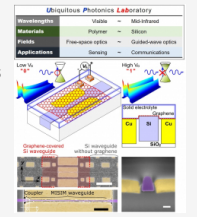
2019: Best Paper Award, COOC 2019
 2018: Best Paper Award, COOC 2018
 2017: Best Paper Award, COOC 2017
 2014: Best Paper Award, COOC 2014
 2013: Best Paper Award, COOC 2013
 2010: Best Paper Award, Photonics Conference 2010
 2005: Honor Prize at the 11th Samsung Human Tech Thesis
 2004: Bronze Prize at the 10th Samsung Human Tech Thesis
 2000~2003: Scholarship, Korea Foundation for Advanced Studies (KFAS)

Ubiquitous Photonics Lab

UP 랩

Nowadays liquid crystal displays, light emitting diodes, and optical communications, which are representative examples of photonics, are closely related to everyday life. Thus photonics seems to be ubiquitous or omnipresent. Moreover, it is believed to be essential in developing future technologies such as photonics-aided electronics, quantum computing, extremely sensitive detection of a single molecule, etc. The goal of UP Lab is not only to play a leading role in developing the future technologies but also to make disruptive improvements in the current technologies. We focus on design, realization, and analysis of photonic and plasmonic waveguide devices working at the telecom wavelengths, optical bio/chemical sensors, and mid-infrared devices handling free-space beams.

포토닉스는 현재 우리 주변의 다양한 분야에서 사용되고 있는 기술일 뿐만 아니라 미래의 핵심 기술로 판단되고 있다. 본 연구실은 포토닉스의 여러 분야 중 광 도파로를 기반으로 하는 광 집적회로 개발에 집중하고 있다. 특히 실리콘 기반의 포토닉 집적회로와 금속과 실리콘 기반의 플라즈모닉 집적회로 개발을 진행하고 있다. 이와 더불어 그래핀 기반의 광소자 개발과 다양한 광 센서 개발도 함께 진행하고 있다.



관심분야

Integrated-optics, silicon photonics, plasmonics, mid-infrared photonics, graphene photonics

희망분야

Photonic integrated-circuits for neuromorphic computing and quantum computing, photonic devices based on two-dimensional materials

Research Keywords and Topics

[Keywords]

Photonics, Plasmonics, Waveguides, Photonic integrated-circuits, Graphene

[Topics]

Graphene-based silicon photonic modulators and photodetectors
 Mid-infrared photonic devices using functional materials
 Photonic integrated-circuits based on thin-film lithium niobate
 Photonic devices based on ultra-thin metal films

Research Publications

IEEE Access, Solid-electrolyte-gated graphene-covered metal-insulator-silicon-insulator-metal waveguide with a remarkably large modulation depth, Yonghan Kim and Min-Suk Kwon*, 2019.

IEEE Photonics Journal, Discussion of the epsilon-near-zero effect of graphene in a horizontal slot waveguide, Min-Suk Kwon, 2014.

Optics Express, Characterizations of realized metal-insulator-silicon-insulator-metal waveguides and nanochannel fabrication via insulator removal, Min-Suk Kwon*, Jin-Soo Shin, Sang-Yung Shin, and Wan-Gyu Lee, 2012.