



정일석 Il-Sug Chung

전기전자공학과 / Electrical Engineering

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Curriculum Vitae

02.2018-: Associate Professor (tenure), School of Electrical and Computer Engineering, UNIST

11.2011-03.2019: Associate Professor (tenure), Department of Photonics Engineering, Technical University of Denmark

12.2009-10.2011 Assistant Professor, Department of Photonics Engineering, Technical University of Denmark

12.2006-12.2018 Postdoc at Research Center COM, Denmark

Academic Credential

Ph.D. in Information and Communications (Optoelectronics) from GIST, in Feb. 2006

M.Sc. in Physics from KAIST in Feb. 2000

B.Sc. in Physics from KAIST in Aug. 1997

Awards/Honors/Memberships

Nano-Optoelectronics Lab.

나노광전자 연구실

우리 연구실에서는, 나노구조를 사용한 다양한 신개념의 광전소자를 연구하고, 그 결과가 초고속 데이터센터 통신, 6G 기간망 통신, 바이오/의학 진단용 실리콘 칩, 차세대 CMOS image sensor, 차세대 LiDAR 센서 등의 응용분야에 기술적 혁신으로 연결되는 것을 목표로 합니다. 이를 위해 필요한 나노포토닉스 이론, 수치계산 코드/툴, epitaxy design, 클린룸 공정기술, 고성능 측정장비 및 분석방법을 갖추고 있습니다.

We explore new science and technologies on nano-structured optoelectronic devices for applications in ultrahigh-speed communications for data centers and 6G backbones, bio/medical diagnosis silicon photonic chips, ultra bright CMOS image sensors, and next generation LiDAR sensors. We are equipped with nano-photonics theory, numerical simulation codes/tools/methodologies, epitaxy designs, clean-room fabrication technologies, and advanced characterization set-ups.

관심분야

나노포토닉스, 실리콘 기반 초고속 저전력 레이저, 실리콘 집적 고효율 레이저, 신개념 CMOS 이미지 센서, LiDAR 용 광원, MEMS tunable devices

희망분야

Research Keywords and Topics

Silicon photonics
High-speed laser
MEMS
Tunable laser
High-power laser
Tunable photodetector
CMOS image sensor

Research Publications

Laser and Photonics Reviews, "Hybrid vertical-cavity lasers with lateral emission into a silicon waveguide," Gyeong Cheol Park, Weiqi Xue, Alireza Taghizadeh, Elezaveta Semenova, Kresten Yvind, Jesper Mork, and Il-Sug Chung (corresponding author), (April 2015).
Optics Express, "Hybrid III-V/SOI resonant cavity enhanced photodetectors," Supanee Learchanakhachon, Alireza Taghizadeh, Gyeong Cheol Park, Kresten Yvind, and Il-Sug Chung (corresponding author), (July 2016)
Applied Physics Letters, "Quasi bound states in the continuum with few unit cells of photonic crystal slab," Alireza Taghizadeh and Il-Sug Chung (corresponding author), (July 2017)

Patents

Laser device, Il-Sug Chung, US8,948,223 granted on Feb 3, 2015
Hybrid vertical-cavity laser, Il-Sug Chung, EP2396861 granted on Dec 17, 2012 and US9,184,562 granted on Nov 11, 2015