Il-Sug Chung - DTU Orbit (22/07/2018)

Chung, Il-Sug

ilch@fotonik.dtu.dk

Department of Photonics Engineering - Associate Professor, Former

Publications:

All-Si photodetector for telecommunication wavelength based on subwavelength grating structure and critical coupling
Publication: Research - peer-review › Journal article – Annual report year: 2017

Compact dielectric cavities based on frozen bound states in the continuum
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2017

Dynamical dispersion engineering in coupled vertical cavities employing a high-contrast grating
Taghizadeh, A. & Chung, I-S. 2017 In : Scientific Reports. 7, 7 p., 2123
Publication: Research - peer-review › Journal article – Annual report year: 2017

Efficient quality-factor estimation of a vertical cavity employing a high-contrast grating
Publication: Research - peer-review › Article in proceedings – Annual report year: 2017

Hybrid Si-on-chip Lasers with Nano Structures
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2017

Quasi bound states in the continuum with few unit cells of photonic crystal slab
Publication: Research - peer-review › Journal article – Annual report year: 2017

Reciprocal-Space Engineering of Quasi-Bound States in the Continuum in Photonic Crystal Slabs for High-Q Microcavities
Chung, I-S. & Taghizadeh, A. 2017 Proceedings of the 2017 International Conference on Transparent Optical Networks. IEEE, 3 p. 8024753
Publication: Research › Article in proceedings – Annual report year: 2018

Vertical cavity laser
Chung, I-S. & Taghizadeh, A. 24 Nov 2016
Publication: Research › Patent – Annual report year: 2016

Hybrid grating reflectors: Origin of ultrabroad stopband
Publication: Research - peer-review › Journal article – Annual report year: 2016

Hybrid III-V on Si grating as a broadband reflector and a high-Q resonator
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016
Hybrid III-V/SOI resonant cavity enhanced photodetector
Publication: Research - peer-review › Journal article – Annual report year: 2016

Hybrid III-V/SOI Resonant Cavity Photodetector
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Hybrid vertical cavity laser for silicon photonics light source integration (invited paper)
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Numerical Investigation of Vertical Cavity Lasers With High-Contrast Gratings Using the Fourier Modal Method
Taghizadeh, A., Mark, J. & Chung, I.-S. 2016 In : Journal of Lightwave Technology. 34, 18, p. 4240-4251
Publication: Research - peer-review › Journal article – Annual report year: 2016

Theoretical Investigation of Subwavelength Gratings and Vertical Cavity Lasers Employing Grating Structures
Publication: Research › Ph.D. thesis – Annual report year: 2016

Ultrabroadband Hybrid III-V/SOI Grating Reflector for On-chip Lasers
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Ultrahigh-speed Si-integrated on-chip laser with tailored dynamic characteristics
Park, G. C., Xue, W., Piels, M., Zibar, D., Mark, J., Semenova, E. & Chung, I.-S. 2016 In : Scientific Reports. 6, 38801
Publication: Research - peer-review › Journal article – Annual report year: 2016

Vertical-cavity laser with a novel grating mirror
Publication: Research › Ph.D. thesis – Annual report year: 2016

Vcsel structure
Chung, I.-S. & Taghizadeh, A. 15 Oct 2015
Publication: Research › Patent – Annual report year: 2015

A New Compact Broadband Reflector: The Hybrid Grating
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Effect of In-plane Mirror Dispersion on Vertical Cavities Based on High-Contrast Grating Mirrors
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Hybrid III-V-on-Si Laser with Ultra-low Energy Consumption
Taghizadeh, A., Mark, J. & Chung, I.-S. 2015
Publication: Research - peer-review › Poster – Annual report year: 2015
Hybrid III-V/SOI single-mode vertical-cavity laser with in-plane emission into a silicon waveguide
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Hybrid vertical-cavity laser with lateral emission into a silicon waveguide
Publication: Research - peer-review › Journal article – Annual report year: 2015

III-V/SOI vertical cavity laser structure for 120 Gbit/s speed
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

III-V/SOI vertical cavity laser with in-plane output into a Si waveguide
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

MEMS Tunable nanostructured photodetector
Publication: Research › Ph.D. thesis – Annual report year: 2015

Polarization-Independent Wideband High-index-Contrast Grating Mirror
Publication: Research - peer-review › Journal article – Annual report year: 2015

Study on differences between high contrast grating reflectors for TM and TE polarizations and their impact on VCSEL designs
Chung, I-S. 2015 In : Optics Express. 23, 10, 10 p., 16730
Publication: Research - peer-review › Journal article – Annual report year: 2015

Towards Electrically Pumped Nanolasers for Terabit Communication.
Publication: Research › Ph.D. thesis – Annual report year: 2015

Ultracompact resonator with high quality-factor based on a hybrid grating structure
Publication: Research - peer-review › Journal article – Annual report year: 2015

Vertical-Cavity In-plane Heterostructures: Physics and Applications
Publication: Research - peer-review › Journal article – Annual report year: 2015

130-nm tunable grating-mirror VCSEL
Publication: Research - peer-review › Conference article – Annual report year: 2014

Comparison of Different Numerical Methods for Quality Factor Calculation of Nano and Micro Photonic Cavities
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014
**Electrical Injection Schemes for Nanolasers**
Publication: Research - peer-review › Journal article – Annual report year: 2014

**Hybrid grating reflector with high reflectivity and broad bandwidth**
Publication: Research - peer-review › Journal article – Annual report year: 2014

**Mode selection laser**
Chung, I-S. & Ran, Q. 2014
Publication: Research › Patent – Annual report year: 2014

**Wavelength sweepeable laser source**
Yvind, K., Ansbæk, T., Chung, I-S. & Hansen, O. 2014
Publication: Research › Patent – Annual report year: 2014

**1060-nm Tunable Monolithic High Index Contrast Subwavelength Grating VCSEL**
Publication: Research - peer-review › Journal article – Annual report year: 2013

**Effect of External Optical Feedback for Nano-laser Structures**
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

**Electrical injection schemes for nanolasers**
Publication: Research - peer-review › Conference article – Annual report year: 2013

**Hybrid III-V-on-Si Vertical Cavity laser for Optical Interconnects**
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

**Laser device**
Chung, I-S. 2013
Publication: Research › Patent – Annual report year: 2014

**Polarization-independent high-index contrast grating and its fabrication tolerances**
Publication: Research - peer-review › Journal article – Annual report year: 2013

**Resonant MEMS tunable VCSEL**
Publication: Research - peer-review › Journal article – Annual report year: 2013

**Speed enhancement in VCSELs employing grating mirrors**
Publication: Research - peer-review › Conference article – Annual report year: 2013

**Tunable Resonant-Cavity-Enhanced Photodetector with Double High-Index-Contrast Grating Mirrors**
Publication: Research - peer-review › Conference article – Annual report year: 2013
Ultrahigh-speed hybrid laser for silicon photonic integrated chips
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2014

VCSELs with a high-index-contrast grating for mode-division multiplexing
Ran, Q. & Chung, I.-S. 2013
Publication: Research › Sound/Visual production (digital) – Annual report year: 2013

Fabrication activity for nanophotonics
Publication: Research - peer-review › Paper – Annual report year: 2012

Low-energy-consumption hybrid lasers for silicon photonics
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Reflectivity-modulated grating-mirror
Chung, I.-S. 2012
Publication: Research › Patent – Annual report year: 2012

VCSELs and silicon light sources exploiting SOI grating mirrors
Publication: Research - peer-review › Conference article – Annual report year: 2012

Vertical-cavity surface-emitting lasers for medical diagnosis
Publication: Research › Ph.D. thesis – Annual report year: 2012

Vertical-cavity surface-emitting laser vapor sensor using swelling polymer reflection modulation
Publication: Research - peer-review › Journal article – Annual report year: 2012

Wave-front-engineered grating mirrors for VCSELs
Publication: Research - peer-review › Conference article – Annual report year: 2012

High-index-contrast grating reflector with beam steering ability for the transmitted beam
Carletti, L., Malureanu, R., Mørk, J. & Chung, I.-S. 2011 In : Optics Express. 19, 23, p. 23567-23572
Publication: Research - peer-review › Journal article – Annual report year: 2011

Hybrid Si/III-V vertical-cavity laser for silicon photonics
Publication: Research - peer-review › Article in proceedings – Annual report year: 2011

Hybrid vertical-cavity laser
Chung, I.-S. 2011
Publication: Research › Patent – Annual report year: 2011

Modelling of photonic-crystal VCSELs with semi-vectorial and vectorial models
80-nm-tunable high-index-contrast subwavelength grating long-wavelength VCSEL: Proposal and numerical simulations
Publication: Research - peer-review › Conference article – Annual report year: 2010

Broadband MEMS-tunable high-index-contrast subwavelength grating long-wavelength VCSEL
Publication: Research - peer-review › Journal article – Annual report year: 2010

High-index-contrast subwavelength grating VCSEL
Publication: Research - peer-review › Conference article – Annual report year: 2010

Hybrid vertical cavity laser
Publication: Research - peer-review › Article in proceedings – Annual report year: 2010

Hybrid Vertical-Cavity Laser
Chung, I-S. 2010
Publication: Research › Patent – Annual report year: 2010

Monomode surface emitting laser: (Third year activity report)
Chung, I-S. & Mørk, J. 2010
Publication: Research - peer-review › Report – Annual report year: 2010

Numerical methods for modeling photonic-crystal VCSELs
Dems, M., Chung, I-S., Nyakas, P., Bischoff, S. & Panajotov, K. 2010 In : Optics Express. 18, 15, p. 16042-16054
Publication: Research - peer-review › Journal article – Annual report year: 2010

Optimization of VCSELs for Self-Mixing Sensing
Publication: Research - peer-review › Journal article – Annual report year: 2010

Polymer-coated vertical-cavity surface-emitting laser diode vapor sensor
Publication: Research - peer-review › Conference article – Annual report year: 2010

Silicon-photonics light source realized by III-V/Si grating-mirror laser
Publication: Research - peer-review › Journal article – Annual report year: 2010

Transverse-mode-selectable microlens vertical-cavity surface-emitting laser
Publication: Research - peer-review › Journal article – Annual report year: 2010

Acetone vapor sensing using a vertical cavity surface emitting laser diode coated with polystyrene
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2009
Advanced vectorial simulation of VCSELs with nano structures invited paper
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009

Selectively-pumped grating-mirror long-wavelength VCSEL
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009

The optical chip: high speed and diminutive size
Publication: Communication › Book chapter – Annual report year: 2009

Time-resolved measurement of the light-current characteristic of a coated VCSEL diode in acetone vapour
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2009

Vectorial analysis of dielectric photonic crystal VCSEL
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009

Broadband subwavelength grating mirror and its application to vertical-cavity surface-emitting laser
Publication: Research - peer-review › Article in proceedings – Annual report year: 2008

Nanophotonics: Semiconductor Optical Devices
Publication: Research - peer-review › Poster – Annual report year: 2008

Subwavelength grating-mirror VCSEL with a thin oxide gap
Publication: Research - peer-review › Journal article – Annual report year: 2008

Finite-difference time-domain analysis of micro-lens integrated vertical-cavity surface-emitting lasers
Chung, I-S. & Lee, Y. T. 2007
Publication: Research - peer-review › Poster – Annual report year: 2007

Opto-VLSI-based reconfigurable free-space optical interconnects architecture
Publication: Research - peer-review › Article in proceedings – Annual report year: 2007

A method to tune the cavity-mode wavelength of resonant cavity-enhanced photodetectors for bidirectional optical interconnects
Publication: Research - peer-review › Journal article – Annual report year: 2006

High Speed(2.5Gbps) reconfigurable inter-chip optical interconnects using opto-VLSI processors
Aljada, M., Alameh, K. E., Tak Lee, Y. & Chung, I-S. 2006 In : Optics Express. 14, p. 6823-6836
Publication: Research - peer-review › Journal article – Annual report year: 2006
Effect of outermost layers on resonant cavity enhanced devices
Publication: Research - peer-review › Journal article – Annual report year: 2004

Projects:

Ultrahigh-speed Si-integrated on-chip laser
Tandukar, S., Chung, I. & Ottaviano, L.
15/11/2015 → 14/11/2018
Project: PhD

Ultrahigh-speed hybrid III-C-on-Si lasers
Topic, V., Chung, I. & Ottaviano, L.
15/03/2015 → 14/09/2018
Project: PhD

Vertical-cavity laser with a novel grating mirror
Park, G. C., Chung, I., Semenova, E., Frandsen, L. H., Heck, M. & Kapon, E.
15/02/2013 → 15/06/2016
Project: PhD

Hybrid III-V-on-Si laser with ultralow energy consumption
01/02/2013 → 04/05/2016
Project: PhD

Electrically pumped nanolaser for terabit communication
Lupi, A., Yvind, K., Chung, I., Oxenløwe, L. K., Birkedal, D. & Roelkens, G.
15/03/2012 → 17/02/2016
Project: PhD

High-speed Laser with Ultralow Energy Consumption for Silicon Photonics
Chung, I., Ran, Q., Mørk, J. & Yvind, K.
01/01/2012 → 31/12/2014
Project

MEMS tunable nano-structured photodetector
Learkthanakhachon, S., Chung, I., Tafur Monroy, I., Yvind, K., Gregersen, N., Birkedal, D. & Larsson, A. G.
15/09/2011 → 18/06/2015
Project: PhD

Hybrid vertical cavity laser
Nielsen, T., Chung, I. & Mørk, J.
01/06/2010 → 31/12/2011
Project

Self-configurable optical links
01/02/2010 → 28/02/2012
Project

End-to-end energy efficient communication networks
Pham, T., Tafur Monroy, I., Jensen, J. B., Chung, I., Erasme, D. & Teixeira, A. L. J.
15/10/2009 → 21/02/2013
Project: PhD
Thermo-electro-optical analysis of subwavelength grating-mirror VCSELs
Chung, I., Mørk, J. & Lavrinenko, A.
01/01/2009 → 31/12/2011
Project

VCSEL’S til medicinsk diagnosticering
Ansbæk, T., Yvind, K., Chung, I., Larsson, D., Hvam, J. M., Amann, M. C. & Birkedal, D.
01/11/2008 → 20/09/2012
Project: PhD

Nanophotonics for terabit communications: VKR centre of excellence - NATEC
01/09/2008 → 31/08/2014
Project

Monomode surface emitting lasers
Chung, I.
01/01/2006 → 01/01/2009
Project

Activities:

Annual Conference on Commercialization of Micro and Nano Systems
Chung, I. (Participant)
30 Aug 2009 → 4 Sep 2009
Activity: Attending an event › Participating in or organising a conference