

## List of Publications

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1. Y. Zheng, D. K.-T. Ng, Y. Wei, Y. Wang, Y. Huang, Y. Tu, C.-W. Lee, B. Liu, S.-T. Ho, "Electrically pumped heterogeneously integrated Si/III-V evanescent lasers with micro-loop mirror reflector" *Applied Physics Letters*, vol. 99, pp. 011103, 2011.
2. Y. Wang, Y. Wei, Y. Huang, Y. Tu, D. Ng, C.-W. Lee, Y. Zheng, B. Liu, S.-T. Ho, "Silicon/III-V laser with super-compact diffraction grating for WDM applications in electronic-photonic integrated circuits," *Optics Express*, vol. 19, pp. 2006, 2011.
3. V. Krishnamurthy, K. Ravi, S.-T. Ho, "Analytical Framework for the Steady State Analysis of Wavelength-Dependent and Intensity-Dependent Interaction of Multiple Monochromatic Beams in Semiconductor Photonic Structures with Multiple Active and Passive Sections," *Journal of Selected Topics in Quantum Electronics*, vol. 48, pp. 1282, 2012.
4. Q. Wang, S.-T. Ho, "A Numerical Simulation of Nanodisk Semiconductor-Plasmonic Laser Using BOR-FDTD With a Multilevel Gain Medium Model," *Photonics Journal*, vol. 4, pp. 2346, 2012.
5. T.-H. Loh, Q. Wang, K.-T. Ng, Y.-C. Lai, S.-T. Ho, "CMOS compatible integration of Si/SiO<sub>2</sub> multilayer GRIN lens optical mode size converter to Si wire waveguide," *Optics Express*, vol. 20, pp. 14769, 2012.
6. G. Singh, K. Ravi, Q. Wang, S.-T. Ho, "Complex-envelope alternating-direction-implicit FDTD method for simulating active photonic devices with semiconductor/solid-state media," *Optics Letters*, vol. 37, pp. 2361, 2012.
7. K. Ravi, Q. Wang, S.-T. Ho, "Efficient FDTD Simulation of Active Photonic Devices with Multiple Temporal Resolutions," *Photonics Technology Letters*, vol. 24, pp. 584, 2012.
8. Y. Chen, Y. Lai, T. C. Chong, S.-T. Ho, "Exact Solution of Facet Reflections for Guided Modes in High-Refractive-Index-Contrast Sub-Wavelength Waveguide via a Fourier Analysis and Perturbative Series Summation: Derivation and Applications," *Journal of Lightwave Technology*, vol. 30, pp. 2455, 2012.
9. Q. Wang, D. K. T. Ng, Y. Wang, Y. Wei, J. Pu, P. Rabiei, S.-T. Ho, "Heterogeneous Si/III-V integration and the optical vertical interconnect access," *Optics Express*, vol. 20, pp. 16745, 2012.
10. Y. Wang, D. K.-T. Ng, Q. Wang, J. Pu, C. Liu, S.-T. Ho, "Low Temperature Direct Bonding of InP and Si<sub>3</sub>N<sub>4</sub>-Coated Silicon Wafers for Photonic Device Integration," *Journal of The Electrochemical Society*, vol. 159, pp. H507, 2012.
11. D. K. T. Ng, Q. Wang, J. Pu, K. P. Lim, Y. Wei, Y. Wang, Y. Lai, S.-T. Ho, "Demonstration of heterogeneous III-V/Si integration with a compact optical vertical interconnect access," vol. 38, pp. 5353, 2013.
12. V. Krishnamurthy, Q. Wang, J. Pu, T.-H. Loh, S.-T. Ho, "Optical Design of Distributed Feedback Lasers-on-Thin-Film-Silicon," *Photonics Technology Letters*, vol. 25, pp. 944, 2013.
13. V. Krishnamurthy, Y. Chen, S.-T. Ho, "Photonic Transistor Design Principles for Switching Gain $\geq$ 2," *Journal of Lightwave Technology*, vol. 31, pp. 2086, 2013.
14. C.-W. Lee, Q. Wang, G. Singh, S.-T. Ho, "Design of ultra-small metallic-semiconductor nano-ring cavity lasers," *Photonics Technology Letters*, vol. 25, pp. 1153-1156, 2013.
15. C.-W. Lee, G. Singh, Q. Wang, "Light extraction—a practical consideration for a plasmonic nano-ring laser," *Nanoscale (Rapid Communication)*, vol. 5, pp. 10835-10838, 2013.

16. K.-P. Lim, C.-W. Lee, G. Singh, Q. Wang, "Design of ultrasmall plasmonic coaxial lasers on Si," *Journal of Nanophotonics*, vol. 7, pp. 070598, 2013.
17. D. K. T. Ng, K.-P. Lim, Q. Wang, J. Pu, K. Tang, Y. Lai, C.-W. Lee, S.-T. Ho, "Effects of SiO<sub>2</sub> hard masks on Si nanophotonic waveguide loss for photonic device integration", *Photonics Technology Letters*, vol. 99, pp. 1-1, 2013.
18. C.-W. Lee, Q. Wang, Y. Lai, D. K. T. Ng, S. K. Ng, "Continuous wave InP-InGaAsP microsquare laser—a comparison to microdisk laser," *Photonics Technology Letters*, vol. 26, pp. 2442-2445, 2014.
19. G. Singh, V. Krishnamurthy, J. Pu, Q. Wang, "Efficient Plasmonic Transducer for Nanoscale Optical Energy Transfer in Heat-Assisted Magnetic Recording," *Journal of Lightwave Technology*, vol. 32, pp. 3074, 2014.
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21. V. Krishnamurthy, Y. Chen, Q. Wang, "MZI-Semiconductor-Based All-Optical Switch with Switching Gain," *Journal of Lightwave Technology*, vol. 32, pp. 2433, 2014.
22. T.-H. Loh, V. Krishnamurthy, Q. Wang, "Design of Laterally Index-Coupled Grating III-V on Thin-SOI Distributed Feedback Lasers," *Photonics Technology Letters*, vol. 27, pp. 1624, 2015.
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25. T. Wang, D. K. T. Ng, S.-K. Ng, Y.-T. Toh, A. K. L. Chee, G. F. R. Chen, Q. Wang, D. T. H. Tan, "Supercontinuum generation in bandgap engineered, back-end CMOS compatible silicon rich nitride waveguides," *Laser & Photonics Reviews*, vol. 9, pp. 498-506, 2015.
26. D. K. T. Ng, Q. Wang, T. Wang, S.-K. Ng, Y.-T. Toh, K.-P. Lim, Y. Yang, D. T. H. Tan, "Exploring High Refractive Index Silicon-Rich Nitride Films by Low-Temperature Inductively Coupled Plasma Chemical Vapor Deposition and Applications for Integrated Waveguides," *ACS Applied Materials & Interfaces*, vol. 7, pp. 21884–21889, 2015.
27. J. Pu, K. P. Lim, D. K. T. Ng, V. Krishnamurthy, C.-W. Lee, K. Tang, A. Y. S. Kay, T. H. Loh, Q. Wang, "Heterogeneously integrated III-V laser on thin SOI with compact optical vertical interconnect access," *Optics Letters*, vol. 40, pp. 1378-1381, 2015.
28. J. Pu, V. Krishnamurthy, D. K. T. Ng, K. P. Lim, C.-W. Lee, K. Tang, A. Y. S. Kay, T. H. Loh, F. Tjiptoharsono, Q. Wang, "Heterogeneous integrated III–V laser on thin SOI with single-stage adiabatic coupler: device realization and performance analysis," *Journal of Selected Topics in Quantum Electronics*, vol. 21, article#1501808, 2015.
29. C.-W. Lee, Y. S. Liang, D. K. T. Ng, Y. Yang, Y. Y. K. Hnin, Q. Wang, "Study of ultrathin SiO<sub>2</sub> Interlayer wafer bonding for heterogeneous III–V/Si photonic integration," *Material Research Express*, vol. 2, pp. 096201, 2015.
30. V. Krishnamurthy, D. K. T. Ng, Z. Cen, B. Xu, Q. Wang, "Maximizing the Plasmonic Near-Field Transducer Efficiency to Its Limit for HAMR," *Journal of Lightwave Technology*, vol. 34, pp. 1184-1190, 2015.
31. C.-W. Lee, Q. Wang, "Metal-semiconductor square nanocavity and light extraction," *Photonics Technology Letters*, vol. 28, pp. 127-130, 2016.

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33. C.-W. Lee, D. K. T. Ng, M. Ren, Y. Fu, A. Y. S. Kay, V. Krishnamurthy, J. Pu, A. L. Tan, F. Tjiptoharsono, S. B. Choo, Q. Wang, "Generic Heterogeneously Integrated III-V Lasers-on-Chip With Metal-Coated Etched-Mirror," *Journal of Selected Topics in Quantum Electronics*, vol. 22, pp. 1500409, 2016.
34. C.-W. Lee, D. K. T. Ng, A. L. Tan, Q. Wang, "Hetero-core III-V/Si microlaser," *Optics Letters*, vol. 41, pp. 3149, 2016.
35. C.-W. Lee, D. K. T. Ng, M. Ren, Y. Fu, A. Y. S. Kay, V. Krishnamurthy, J. Pu, A. L. Tan, S. B. Choo, Q. Wang, "Comparison of III-V/Si on-chip lasers with etched facet reflectors," *Applied Optics*, vol. 56, pp. 5086, 2017.
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37. C.-W. Lee, D. K. T. Ng, A. L. Tan, Q. Wang, "Fabrication and Demonstration of III-V/Si Heterocore Microcavity Lasers via Ultrathin Interlayer Bonding and Dual Hard Mask Techniques," *ACS Photonics*, vol. 3, pp. 2191-2196, 2017.
38. D. K. T. Ng, C.-W. Lee, V. Krishnamurthy, Q. Wang, "Sub-Micron Anisotropic InP-based III-V Semiconductor Material Deep Etching for On-Chip Laser Photonics Devices," *Advanced Engineering Materials*, pp. 1700465, 2017.