

## PUBLICATIONS

### Refereed Journal Papers

- [J1] R. Korcek, P. Cheben, W. Fraser, J. H. Schmid, W. N. Ye, and D. Benedikovic, "Low-loss grating couplers based on inter-layer mode interference in hybrid silicon nitride photonic platform," accepted by Optics Letters, June 2023, in press.
- [J2] C. Pérez-Armenta, K. K. MacKay, A. Hadij-ElHouati, A. Ortega-Moñux, I. Molina-Fernández, J. G. Wangüemert-Pérez, J. H. Schmid, P. Cheben, W. N. Ye, "Thermally induced sideband generation in silicon-on-insulator cladding modulated Bragg notch filters," Optics Express, 31(13), pp.22225-22232, Jun 2023.
- [J3] W. Fraser and W. N. Ye, "Fresnel zone plate metalens with subwavelength gratings," Sensors, 23(8), 4137, Apr 2023. (invited)
- [J4] S. Khajavi, D. Melati, P. Cheben, J. H. Schmid, C. A. Alonso Ramos, and W. N. Ye, "Highly efficient ultra-broad beam silicon nanophotonic antenna based on near-field phase engineering," Scientific Reports, 12(1), 18808, Nov 2022.
- [J5] D. Benedikovic, Q. Liu, A. Sánchez-Postigo, T. Smy, A. Atieh, P. Cheben, and W. N. Ye, "Circular optical phased array with large steering range and high resolution," Sensors, 22, 16 (6135), (15 pages), Aug 2022.
- [J6] Q. Liu, D. Benedikovic, T. Smy, A. Atieh, P. Cheben, and W. N. Ye, "Circular optical phased arrays with radial nano-antennas," Nanomaterials, 12, 1938 (11 pages), Jun 2022.
- [J7] K. K. MacKay, S. Wang, P. Cheben, and W. N. Ye "Subwavelength Grating Metamaterial Multimode Waveguide Bend for Single Etched Silicon Waveguide," Advanced Materials Technologies, 2200038 (pp. 1-8), March 2022.
- [J8] P. Ginel-Moreno, A. Sánchez-Postigo, J. de-Oliva-Rubio, A. Hadij-ElHouati, W. N. Ye, J. G. Wangüemert-Pérez, Í. Molina-Fernández, J. H. Schmid, P. Cheben, and A. Ortega-Moñux, "Millimeter-long metamaterial surface-emitting antenna in silicon photonics platform," Optics Letters 46(15), 3733-3736, July 2021.
- [J9] D. Pereira-Martin, J. M. Luque-Gonzalez, J. G. Wangüemert-Perez, A. Hadij-Elhouati, I. M.-Fernandez, P. Cheben, J. H. Schmid, S. Wang, W. N. Ye, J. Ctyroky, and A. Ortega-Monux, "Complex spectral filters in silicon waveguides based on cladding-modulated Bragg gratings," Optics Express, 29 (11,): 15867-15881, May 2021.
- [J10] D. Gostimirovic, R. Soref, and W. N. Ye, "Resonant bistable 2 x 2 crossbar switches using dual nanobeams clad with phase-change material," OSA Continuum 4(4), 1316-1325 (2021), April 2021.
- [J11] S. Khajavi, D. Melati, P. Cheben, J. H. Schmid, D.-X. Xu, and W. N. Ye, "Compact and highly-efficient broadband surface grating antenna on a silicon platform," Optics Express, 29(5), pp.7003-7014, Mar 2021.
- [J12] D. Gostimirovic and W. N. Ye, "Ultralow-Power Double Vertical Junction Microdisk Modulators," IEEE Journal of Selected Topics in Quantum Electronics, 27(3), 1-7, Jan 2021.
- [J13] D. Gostimirovic and W. N. Ye, "A compact silicon-photonics mode-division (de)multiplexer using waveguide-wrapped microdisk resonators," Optics Letters, 46(2), 388-391, Jan 2021.
- [J14] P. Ginel-Moreno, D. Pereira-Martin, A. Hadij-Elhouati, W. N. Ye, D. Melati, D.-X. Xu, S. Janz, A. Ortega-Monux, G. Wangüemert-Perez, R. Halir, I. M.-Fernandez, J. H. Schmid, and P. Cheben, "A highly efficient optical antenna with small beam divergence in silicon waveguides," Optics Letters 45(20), 5668-5671, Oct 2020.
- [J15] T. Hao, A. Sánchez-Postigo, P. Cheben, A. Ortega-Moñux, and W. N. Ye, "Dual-Band Polarization-Independent Subwavelength Grating Coupler for Wavelength Demultiplexing," IEEE Photonics Technology Letters, 32(18), 1163-1166, Aug 2020.

- [J16] D. Gostimirovic, F. De Leonardis, R. Soref, V. N. Passaro, and W. N. Ye, “Ultrafast electro-optical disk modulators for logic, communications, optical repeaters, and wavelength converters,” *Opt. Express* 28(17), 24874-24888, Aug. 2020.
- [J17] W. N. Ye, M. Thipse, M. B. Mahdi, S. Azad, R. Davies, M. Ruel, M. A. Silver, L. Hakami, T. Mesana, F. Leenen, T. Mussivand, “Can Heat Therapy Help Heart Failure Patients?” *Artificial Organs* 44(7), 680-692, Feb 2020. (DOI: 10.1111/aor.13659)
- [J18] S. Li, N. G. Tarr and W. N. Ye, “JFET Integration in a Foundry SOI Photonics Platform,” *Applied Sciences*, 9(19), 3964, 1-8, Sept 2019. (invited)
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- [J20] V. Vakarin, W. N. Ye, J. M. Ramírez, Q. Liu, J. Frigerio, A. Ballabio, G. Isella, L. Vivien, C. Alonso-Ramos, P. Cheben, and D. Marris-Morini, “Ultra-wideband Ge-rich Silicon Germanium mid-infrared polarization rotator with mode hybridization flattening,” *Optics Express* 27, 9838-9847, March 2019.
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- [J23] D. Gostimirovic and W. N. Ye, “An Open-Source Artificial Neural Network Model for Polarization-Insensitive Silicon-on-Insulator Subwavelength Grating Couplers,” *IEEE Journal of Selected Topics in Quantum Electronics*, 25(3), 1-5, Oct 2018 (invited).
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- [J25] D. Gostimirovic and W. N. Ye, “Ultracompact CMOS-compatible optical logic using carrier depletion in microdisk resonators,” *Scientific Reports*, 7(1), 1-10, Oct 2017.
- [J26] O. Marsh, Y. Xiong and W. N. Ye, “Slot Waveguide Ring Assisted Mach Zehnder for Sensing Applications,” *IEEE Selected Topics in Quantum Electronics*, 23(2), 440-443, March 2017.
- [J27] Y. Sun, Y. Xiong and W. N. Ye, “Experimental demonstration of a two-mode (de)multiplexer based on a taper-etched directional coupler,” *Optics Letters*, 41(16), 3743-3746, Jul 2016.
- [J28] M. Papes, P. Cheben, W. N. Ye, J. H. Schmid, D.-X. Xu, S. Janz, D. Benedikovic, C. A. Ramos, R. Halir, A. Ortega-Monux, A. Delage and V. Vasinek, “Fiber-Chip Edge Coupler with Large Mode Size for Silicon Photonic Wire Waveguides,” *Optics Express*, 24(5), 5026-5038, 2016.
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### **Book**

- [J57] W. N. Ye, *Stress Engineering in Silicon-on-insulator Polarization Splitters*, VDM Verlag Dr. Müller, 2010.

### **Patents**

- [P1] D. Melati, D.-X. Xu, P. Cheben, J. H. Schmid, M. K. Dezfouli, Y. Grinberg, R. Cheriton, S. Janz, W. N. Ye, S. Khajavi, "Method for ultra-wideband and highly efficient surface grating in silicon photonics," US Patent Application #: WO 2022/013780 A1, Jan 20, 2022.
- [P2] P. Cheben, J. H. Schmid, P. Ginel-Moreno, D. Pereira-Martin, A. Hadij-Elhouati, W. N. Ye, D. Melati, D.-X. Xu, S. Janz, A. Sánchez-Postigo, A. Ortega-Moñux, J. G. Wangüemert-Pérez, Í. Molina-Fernández, "Optical antenna in silicon waveguides," US Patent Application #: WO 2022/013779A1, July 14, 2021.
- [P3] N. Purwaha and W. N. Ye, "Broadband polarization independent grating coupler based on apodized subwavelength gratings," US Patent Application #: 62716461, August 9, 2018.
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### **Refereed Conference Articles**

- [C1] M. Sunny and W. N. Ye, "90-degree Optical Hybrid with Subwavelength Gratings for Coherent Detection," submitted to Photonics West, Jan 27 – Feb 1, 2024.
- [C2] W. Fraser, D. Benedikovic, R. Korcek, M. Milanizadeh, J. H. Schmid, P. Cheben, and W. N. Ye, "Design of subwavelength grating metamaterial-assisted grating couplers on a hybrid dual-layer silicon nitride platform," submitted to Photonics West, Jan 27 – Feb 1, 2024.
- [C3] R. Korcek, W. Fraser, Q. Wilmart, D. M. Quiroz, J. Litvik, S. Edmond, M. Milanizadeh, J. H. Schmid, P. Cheben, W. N. Ye, L. Vivien, C. Alonso-Ramos, and D. Benedikovic, "High-efficiency off-chip grating couplers for silicon nitride photonics," submitted to Photonics West, Jan 27 – Feb 1, 2024.
- [C4] W. Fraser and W. N. Ye, "Fresnel zone plate metalens based on silicon subwavelength grating engineering," *Frontiers in Optics + Laser Science (FiO+LS)*, Oct 9-12, 2023.

- [C5] S. Khajavi, D. Melati, P. Cheben, J. H. Schmid, J. Zhang, and W. N. Ye, "Efficient silicon nanophotonic antenna with broadened beam on a 300-nm silicon-on-insulator platform," *Frontiers in Optics + Laser Science (FiO+LS)*, Oct 9-12, 2023.
- [C6] R. Korcek, W. Fraser, C. Alonso-Ramos, P. Cheben, J. H. Schmid, M. Milanizadeh, L. Vivien, W. N. Ye, and D. Benedikovic, "Efficient single-etch surface grating couplers in silicon nitride platforms for telecom and datacom wavebands," *European Optical Society Annual Meeting, EOSAM*, Dijon, France, September 11 – 15, 2023.
- [C7] W. Fraser and W. N. Ye, "Silicon Fresnel zone plate metalens using silicon subwavelength gratings," *13<sup>th</sup> International Conference on Metamaterials, Photonic Crystals and Plasmonics, META 2023*, Paris, France, Jul 18-21, 2023.
- [C8] P. Cheben, J.H. Schmid, W. N. Ye, D. Benedikovic, P. Ginel-Moreno, S. Khajavi, J.M. Luque-González, A. F. Hinestrosa, D. Pereira-Martín, A. Sánchez-Postigo, A. Ortega-Moñux, J. G. Wangüemert-Pérez, I. Molina-Fernández, R. Halir, D. Melati, C. Alonso-Ramos, L. Vivien, J. Zhang, M. Milanizadeh, D.-X. Xu, Y. Grinberg, S. Janz, R. Cheriton, S. Wang, M. Vachon and M. Dado, "High performance integrated photonic devices with subwavelength metamaterials," *13<sup>th</sup> International Conference on Metamaterials, Photonic Crystals and Plasmonics, META 2023*, Paris, France, Jul 18-21, 2023 (invited).
- [C9] P. Cheben, J.H. Schmid, P. Ginel-Moreno, S. Khajavi, R. Korček, W. Fraser, D. Sirmaci, A. F. Hinestrosa, J.M. Luque-González, D. Pereira-Martín, A. Sánchez-Postigo, A. Hadij-ElHouati, D. Benediković, A. Ortega-Moñux, J. G. Wangüemert-Pérez, I. Molina-Fernández, R. Halir, W. N. Ye, D. Melati, C. Alonso-Ramos, D. González-Andrade, L. Vivien, I. Staude, J. Zhang, M. Milanizadeh, D.-X. Xu, Y. Grinberg, R. Cheriton, S. Janz, S. Wang, M. Vachon and M. Dado, "Subwavelength-engineered metamaterial devices for integrated photonics," *23rd International Conference on Transparent Optical Networks ICTON 2023*, Bucharest, Romania, July 2-6, 2023 (invited).
- [C10] W. N. Ye, D. Benedikovic, Q. Liu, S. Khajavi, W. Fraser, X. Xin, K. K. MacKay, D. Gostimirovic, M. A. Ruhul Fatin, T. Hao, S. Li, N. Kohli, N. Purwaha, Y. Sun, Y. Xiong, B. A. Dorin, O. Marsh, M. Ibrahim, C. Pérez-Armenta, A. Sánchez-Postigo, P. Ginel-Moreno, A. Hadij-ElHouati, D. Pereira-Martin, A. Ortega-Moñux, I. Molina-Fernández, J. G. Wangüemert-Pérez, R. Soref, M. Milanizadeh, D.-X. Xu, J.H. Schmid, D. Melati, P. Cheben, T. J. Smy, and A. Atieh, "High performance silicon and silicon metamaterials for integrated photonics," *23<sup>rd</sup> IEEE International Conference on Nanotechnology (IEEE-NANO 2023)*, July 2-5, 2023, Jeju, Korea (Keynote)
- [C11] W. N. Ye, M. A. R. Fatin, R. Soref, and D. Gostimirovic, "Silicon reconfigurable optical logic using phase-change materials," *Photonics North 2023*, Montreal, Canada, Jun 12-15 (invited).
- [C12] S. Khajavi, D. Melati, P. Cheben, J. H. Schmid, J. Zhang, and W. N. Ye, "Highly efficient ultra-broad beam silicon nanophotonic antenna for two-dimensional optical phased arrays," *Photonics North 2023*, Montreal, Canada, Jun 12-15, 2023.
- [C13] D. Benedikovic, R. Korcek, W. Fraser, C. Alonso-Ramos, L. Vivien, X. Xin, Y. K. Yonjali, P. Cheben, J. H. Schmid, M. Milanizadeh, T. Smy, A. Atieh, and W. N. Ye, "Off-chip surface grating couplers and nano-antennas for optical communications and optical phased arrays," *Photonics North 2023*, Montreal, Canada, Jun 12-15, 2023 (invited).
- [C14] R. Korcek, W. Fraser, D. Benedikovic, C. Alonso-Ramos, J. H. Schmid, M. Milanizadeh, P. Cheben, W. N. Ye, and L. Vivien, "Subwavelength metamaterial grating couplers on silicon nitride platform," *European Conference on Integrated Optics ECIO 2023*, Twente, Netherlands, April 19-21, 2023.
- [C15] D. Melati, Z. Mokeddem, P. Nuño-Ruano, E. Cassan, D. Marris-Morini, L. Vivien, C. Alonso-Ramos, Y Grinberg, M. Al-Digeil, D.-X. Xu, M. Milanizadeh, J. Zhang, J. H. Schmid, P. Cheben, S. Khajavi, W. N. Ye, A. Waqas, and P. Manfredi, "Subwavelength metamaterial devices with optimization and machine learning," *Photonics West 2023*, San Francisco, USA, Jan 28 – Feb 2, 2023 (invited).

- [C16] W. Fraser and W. N. Ye, “Fresnel Zone Plate Metalens using Silicon Subwavelength Gratings,” Photonics West 2023, San Francisco, USA, Jan 28 – Feb 2, 2023.
- [C17] X. Xin, D. Benedikovic, and W. N. Ye, “Silicon-based polarization-insensitive optical antennas,” Photonics West 2023, San Francisco, USA, Jan 28 – Feb 2, 2023.
- [C18] I. Kandid and W. N. Ye, “Array design using rotational symmetry for high performance optical phased arrays,” Photonics West 2023, San Francisco, USA, Jan 28 – Feb 2, 2023.
- [C19] L. Yuan and W. N. Ye, “Design and optimization of optical phased array for sidelobe suppression,” Photonics West 2023, San Francisco, USA, Jan 28 – Feb 2, 2023.
- [C20] D. Benedikovic, Q. Liu, T. Smy, A. Atieh, P. Cheben, and W. N. Ye, “Optical Phased Array with Radial Optical Antennas in a Circular Configuration,” IEEE Photonics Conference, Vancouver, Canada, Nov 13-17, 2022.
- [C21] S. Khajavi, D. Melati, P. Cheben, J. H. Schmid, D.-X. Xu and W. N. Ye, “Compact metamaterial grating antenna in a 300-nm silicon-on-insulator waveguide,” IEEE Photonics Conference, Vancouver, Canada, Nov 13-17, 2022.
- [C22] P. Cheben, J.H. Schmid, P. Ginel-Moreno, A. Hadij-ElHouati, S. Khajavi, J.M. Luque-González, A. Sánchez-Postigo, A. F. Hinestrosa, D. Pereira-Martín, A. Ortega-Moñux, J. G. Wangüemert-Pérez, I. Molina-Fernández, R. Halir, W. N. Ye, D. González-Andrade, D. Melati, T. T. D. Dinh, C. Alonso-Ramos, L. Vivien, R. Fernández de Cabo, A.V. Velasco, Y. Grinberg, S. Janz, D.-X. Xu, R. Cheriton, J. Zhang, M. Milanizadeh, S. Wang, M. Vachon, D. Benedikovic and M. Dado, “Metamaterial integrated photonics,” Asia Communications and Photonics Conference (ACP) & International Conference on Information Photonics and Optical Communications (IPOC), Shenzhen, China, November 5-8, 2022 (invited).
- [C23] S. Khajavi, D. Melati, P. Cheben, J. H. Schmid, D.-X. Xu and W. N. Ye, “Highly-efficient and compact metamaterial surface grating antenna on a 300-nm silicon-on-insulator platform,” European Optical Society Annual Meeting, EOSAM, Porto, Portugal, September 12 – 16, 2022.
- [C24] W. N. Ye “Reconfigurable optical switches using phase-changing materials,” European Optical Society Annual Meeting, EOSAM, Porto, Portugal, September 12 – 16, 2022 (invited).
- [C25] D. Benedikovic, Q. Liu, A. Sanchez-Postigo, A. Atieh, T. Smy, P. Cheben, and W. N. Ye, “Integrated optical phased arrays with circular architecture on a silicon platform,” European Optical Society Annual Meeting, EOSAM, Porto, Portugal, September 12 – 16, 2022.
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- [C101] P. Cheben, P. J. Bock, J. H. Schmid, J. Lapointe, S. Janz, D.-X. Xu, A. Densmore, A. Delâge, R. Ma, R. Halir, B. Lamontagne, A. Ortega-Moñux, I. M. Fernandez, J.-M. Fédéli, M. Ibrahim, and W. N. Ye, “Subwavelength structures in SOI waveguides,” *8<sup>th</sup> IEEE International Conference on Group IV Photonics (GFP’11)*, 42-44, London, UK, Sep. 2011 (invited).
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- [C121] D.-X. Xu, P. Cheben, A. Delâge, S. Janz, B. Lamontagne, M.-J. Picard, E. Post, P. Waldron and W. N. Ye, "Applications of Cladding Stress Induced Effects For Advanced Polarization Control in Silicon Photonics," the *Progress In Electromagnetics Research Symposium (PIERS'07)*, Beijing, China, Mar. 2007 (invited).
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- [C127] D.-X. Xu, S. Janz, P. Cheben, W. N. Ye, "Design of Polarization-Insensitive SOI Ring Resonators Using Cladding Stress-Induced Birefringence and MMI Coupler," *IEEE 2<sup>nd</sup> International Conference on Group IV Photonics*, 201 – 203, Belgium, Sept. 2005.
- [C128] W. N. Ye, D.-X. Xu, S. Janz, P. Cheben, A. Delage, N. G. Tarr, "Novel Stress-induced Passive Polarization Splitters/Filters in Silicon-on-Insulator," *12<sup>th</sup> Canadian Semiconductor Technology Conference*, Ottawa, Ontario, Aug. 2005.
- [C129] D.-X. Xu, W. N. Ye, A. Bogdanov, D. Dalacu, A. Delâge, P. Cheben, S. Janz, B. Lamontagne, M.-J. Picard, N. G. Tarr, "Stress engineering for the control of birefringence in SOI waveguide components," *Photonics West 2005*, in *Proc. SPIE Int. Soc. Opt. Eng.* 5730, 158-172, 2005 (invited). (6)

- [C130] D.-X. Xu, A. Delâge, P. Cheben, B. Lamontagne, S. Janz, W. N. Ye, "Silicon-on-insulator (SOI) as a photonics platform," *12<sup>th</sup> International Symposium on Silicon-on-Insulator Technology and Devices*, Quebec City, May 2005 (invited).
- [C131] S. Janz, P. Cheben, A. Delage, B. Lamontagne, M.-J. Picard, D.-X. Xu, K.-P. Yap and W. N. Ye, "Enabling technologies for silicon-based microphotonics," *Integrated Photonics Research and Applications/Nanophotonics for Information Systems Topical Meetings (IPRA'05)*, San Diego, CA, Feb. 2005 (invited).
- [C132] D.-X. Xu, J.-M. Baribeau, P. Cheben, D. Dalacu, A. Delâge, B. Lamontagne, S. Janz, M.-J. Picard, W. N. Ye, "Prospects and challenges for microphotonic waveguide components based on Si and SiGe," *Electrochemical Society Fall Meeting (ECS'04) -SiGe: Materials Processing & Devices*, Honolulu, Hawaii, vol. 2004-07, Oct. 2004, 619-633 (invited).
- [C133] S. Janz, P. Cheben, A. Delage, B. Lamontagne, M.-J. Picard, D.-X. Xu, K.-P. Yap and W. N. Ye, "Silicon-Based Integrated Optics: Waveguide Technology to Microphotonics," *Materials Research Society Fall Meeting (MRS'04) - Group IV Semiconductor Nanostructures*, in MRS Proc. Vol. 832, Boston, MA, p3-14, Nov. 2004 (invited).
- [C134] S. Janz, P. Cheben, A. Delage, B. Lamontagne, M.-J. Picard, D.-X. Xu, K. P. Yap, and W. N. Ye, "Microphotonics: current challenges and applications," *NATO Advanced Research Workshop on Frontiers in Planar Lightwave Circuit Technology*, Ottawa, Canada, Sept. 2004 (invited).
- [C135] S. Janz, P. Cheben, D. Dalacu, A. Delâge, B. Lamontagne, M.-J. Picard, D.-X. Xu, W. N. Ye, "Tuning the modal birefringence in waveguide devices," *Integrated Photonics Research Topical Meeting (IPR'04)*, San Francisco, California, USA, Jun. 2004, Paper IFG3.
- [C136] W. N. Ye, D.-X. Xu, S. Janz, P. Cheben, M.-J. Picard, B. Lamontagne, and N. G. Tarr, "Stress Induced Birefringence in Silicon-on-insulator (SOI) Waveguides," in *Proc. SPIE Int. Soc. Opt. Eng.* 5357, 57-66, Jan. 2004.
- [C137] D.-X. Xu, S. Janz, P. Cheben, M.-J. Picard, B. Lamontagne, and N. G. Tarr, W. N. Ye, "Control and compensation of birefringence in SOI waveguides," Technical Digest, *IEEE Lasers and Electro-Optics Society: LEOS 16<sup>th</sup> Annual General Meeting*, Tucson, Arizona, USA, 2, 590-591, 2003.
- [C138] L. Brzozowski, W. N. Ye, and E. H. Sargent, "Pulse switching and compression in out-of-phase superimposed linear-nonlinear grating," Technical Digest, *IEEE Lasers and Electro-Optics Society: LEOS 2003 Summer Topical Meeting*, Vancouver, British Columbia, Canada, 1, pp.25-26, 2003.
- [C139] W. N. Ye, L. Brzozowski, E. H. Sargent, and D. Pelinovsky, "Nonlinear propagation of ultrashort pulses in nonlinear periodic materials with oppositely-signed Kerr coefficients," Technical Digest, *IEEE Lasers and Electro-Optics Society: LEOS 14<sup>th</sup> Annual General Meeting*, San Diego, California, USA, 2, 441-442, 2001.
- [C140] L. Brzozowski, E. V. Johnson, W. N. Ye, and E. H. Sargent, "Nonlinear periodic structures as building blocks of all-optical signal processing devices and systems," *Canada France Conference on Molecular Photonics and Electronics*, Chateau Montebello, Canada, 2001.

### **Invited Presentations**

- [C141] W. N. Ye, D. Benedikovic, Q. Liu, S. Khajavi, W. Fraser, X. Xin, K. K. MacKay, D. Gostimirovic, M. A. Ruhul Fatin, T. Hao, S. Li, N. Kohli, N. Purwaha, Y. Sun, Y. Xiong, B. A. Dorin, O. Marsh, M. Ibrahim, C. Pérez-Armenta, A. Sánchez-Postigo, P. Ginel-Moreno, A. Hadij-ElHouati, D. Pereira-Martin, A. Ortega-Moñux, I. Molina-Fernández, J. G. Wangüemert-Pérez, R. Soref, M. Milanizadeh, D.-X. Xu, J.H. Schmid, D. Melati, P. Cheben, T. J. Smy, and A. Atieh, "High performance silicon and silicon metamaterials for integrated photonics," *23<sup>rd</sup> IEEE International Conference on Nanotechnology (IEEE-NANO 2023)*, July 2-5, 2023, Jeju, Korea (Keynote)
- [C142] W. N. Ye, "High performance silicon and silicon metamaterials for integrated photonics," Technical Seminar, Centre for Nanoscience and Nanotechnology, Paris, France.
- [C143] W. N. Ye, "Silicon based optical phased arrays," Technical Seminar, Innovusion Inc, Sunnyvale, CA, USA, March 22, 2023.

- [C144] W. N. Ye, D. Benedikovic, Q. Liu, S. Khajavi, D. Melati, A. Sanchez-Postigo, J. H. Schmid, D.-X. Xu, X. Xin, P. Cheben, T. J. Smy, and A. Atieh, “Integrated silicon photonic optical phased arrays with large beam steering and high resolution,” Photonics West 2023, San Francisco, USA, Jan 28 – Feb 2, 2023.
- [C145] H. Podmore, A. Chauhan, B. Poulsen, M. Zylstra, X. Xin, M. Essington, A. Y. Elsharabasy, M. R. Fatin, N. Zonta, G. Iu, A. Scott, T. Djokic, J. Sabarinathan, W. N. Ye, A. S. Helmy, R. Lee, “Design and analysis of on-chip optical phase array systems for satellite communications,” Photonics West 2023, San Francisco, USA, Jan 28 – Feb 2 2023.
- [C146] P. Cheben, J.H. Schmid, P. Ginel-Moreno, A. Hadij-ElHouati, S. Khajavi, J.M. Luque-González, A. Sánchez-Postigo, A. F. Hinestrosa, D. Pereira-Martín, A. Ortega-Moñux, J. G. Wangüemert-Pérez, I. Molina-Fernández, R. Halir, W. N. Ye, D. González-Andrade, D. Melati, T. T. D. Dinh, C. Alonso-Ramos, L. Vivien, R. Fernández de Cabo, A.V. Velasco, Y. Grinberg, S. Janz, D.-X. Xu, R. Cheriton, J. Zhang, M. Milanizadeh, S. Wang, M. Vachon, D. Benedikovic, M. Dado, Y. D. Sirmaci and I. Staude, “Metamaterial-inspired integrated photonics,” IEEE Photonics Conference IPC 2022, November 13 – 17, 2022, Vancouver, Canada (Keynote)
- [C147] W. N. Ye “Reconfigurable optical switches using phase-changing materials,” European Optical Society Annual Meeting, EOSAM, Porto, Portugal, September 12 – 16, 2022.
- [C148] P. Cheben, J.H. Schmid, P. Ginel-Moreno, A. Hadij-ElHouati, S. Khajavi, J.M. Luque-González, A. Sánchez-Postigo, A. F. Hinestrosa, D. Pereira-Martín, A. Ortega-Moñux, J. G. Wangüemert-Pérez, I. Molina-Fernández, R. Halir, W. N. Ye, D. González-Andrade, D. Melati, T. T. D. Dinh, C. Alonso-Ramos, L. Vivien, R. Fernández de Cabo, A.V. Velasco, Y. Grinberg, S. Janz, D.-X. Xu, R. Cheriton, J. Zhang, M. Milanizadeh, S. Wang, M. Vachon, D. Benedikovic and M. Dado, “Metamaterial engineered waveguide devices and they key role in silicon photonics,” International Symposium on Silicon Based Optoelectronics (ISSBO2022), July 14-16, 2022 in Hangzhou, China (Plenary)
- [C149] W. N. Ye, “Silicon and silicon metamaterials for integrated photonics,” International SPIE Technical Webinar, SPIE student chapter Indian Institute of Technology IIT (ISM), Dhanbad, India, March 17, 2022.
- [C150] W. N. Ye, “Silicon subwavelength gratings for telecommunication and data communications,” Photonic Materials Laboratory and Electronic Materials Research Laboratory, Massachusetts Institute of Technology (MIT), Boston, USA, March 15, 2022.
- [C151] W. N. Ye, “Magic of Light – Understanding Photonics / Optics”, Soapbox Science, Sept 23, 2021.
- [C152] W. N. Ye, “Silicon subwavelength gratings for telecommunication and data communications,” 13<sup>th</sup> International Conference and Expo on Nanotechnology & Nanomaterials (iNanotech-2021), Barcelona, Spain, July 12-14, 2021 (Keynote).
- [C153] W. N. Ye, “Silicon-based photonics for telecommunication and data communication,” 14<sup>th</sup> Pacific Rim Conference on Lasers and Electro-Optics (CLEO Pacific Rim, CLEO-PR 2020) (PR) 2020, Sydney, Australia, Aug 3-5, 2020.
- [C154] W. N. Ye, 3<sup>rd</sup> International Conference of Theoretical and Applied Nanoscience and Nanotechnology (TANN'19), Jun 2019 (Keynote).
- [C155] W. N. Ye, “Photonics: a fascinating field in nano-scale”, Ingenious Talk, the Ottawa Sunnyside Pubic Library, Apr 2019.
- [C156] W. N. Ye, “Tech Talk: Silicon Photonics for data- and tele-communications,” Intel Corporation, 3600 Juliette Ln. Santa Clara, California, USA, June 29, 2018.
- [C157] W. N. Ye, “Silicon Photonics and Its Applications,” invited talk, Department of Physics Colloquium, Concordia University, Jan 15, 2018.
- [C158] W. N. Ye, “Silicon Photonics and Its Applications,” invited talk, IEEE Carleton, Nov 29, 2017.
- [C159] W. N. Ye, “Silicon Waveguides and Waveguide-based Devices,” invited talk, Lumentum Operations LLC, Ottawa, Apr 28, 2017.

- [C160] W. N. Ye, "Silicon Photonics," invited seminar talk, IEEE Electron Devices Society (EDS) Vancouver Chapter, Vancouver, May 23, 2017.
- [C161] W. N. Ye, "Silicon-based Multimode Division Multiplexing," invited seminar talk, "Workshop on Passives" for the NSERC Silicon Electronic-Photonic Integrated Circuits (SiEPIC) Program, Ottawa, May 11, 2017.
- [C162] W. N. Ye, "Biomedical Applications of Photonics," invited seminar talk, IEEE-EMBS seminar, Nov 28, 2016.
- [C163] W. N. Ye, Y. Sun, Y. Xiong, B. Dorin, P. Cheben, J. H. Schmid, D.-X. Xu, S. Janz, "Ultracompact polarization splitter and rotators based on silicon-on-insulator," International conference on Advances in Electronic and Photonic Technologies – ADEPT'15, Štrbské Pleso, High Tatras, Slovakia, Jun 1-5, 2015 (Keynote).
- [C164] W. N. Ye, "Silicon-based nanophotonics for telecommunication, biomedical and renewable energy," Invited talk at the Physics seminar, University of Zilina, Slovakia, May 29, 2015 (invited)
- [C165] W. N. Ye, "Silicon photonics," Invited talk, the ECE seminar, University of Malaga, Spain, Sept 9, 2014.
- [C166] W. N. Ye, "Silicon photonics," Invited talk, the ECE seminar, University of Waterloo, Oct 18, 2013.
- [C167] W. N. Ye, "Silicon photonics," Invited talk, the Department of Physics Colloquium, University of Western Ontario, Oct 17, 2013.
- [C168] W. N. Ye, "Silicon Photonics at Carleton University," Invited talk at the Silicon Photonics Workshop, organized by the Canadian Photonics Industry Consortium (CPIC), Sep 10-11, 2012.
- [C169] J. H. Schmid, P. Cheben, P. J. Bock, J. Lapointe, S. Janz, D.-X. Xu, M. Ibrahim and W. N. Ye, "A new degree of freedom for silicon integrated optics," SPIE Newsroom. DOI: 10.1117/2.1201203.004145, 17 April 2012.
- [C170] W. N. Ye, "Silicon Photonics," Invited speaker at the Microwave Photonics Seminar Series organized by IEEE Ottawa Section AP / MTT Joint Chapter, IEEE Photonics Society Ottawa Chapter, and IEEE Ottawa Section on Silicon Photonics, Feb 23, 2012.
- [C171] W. N. Ye, "Introduction to Biophotonics," Invited talk, the Department of Physics Colloquium, Queen's University, Dec 2, 2011.
- [C172] M. Ibrahim, J. H. Schmid, P. Cheben, S. Janz, D.-X. Xu, and W. N. Ye, "Athermal Silicon Subwavelength Grating Waveguides," *Canadian Institute for Photonic Innovations (CIPI) Student Conference 2011*, Niagara Falls, Canada, June 2011.
- [C173] W. N. Ye, "Nanophotonics: The fascinating world of light at the nano-scale," Spring Conference, Gananoque, Canada, April 29-May 1, 2011.
- [C174] W. N. Ye, "Introduction to Biophotonics," University of Ottawa Heart Institute (UOHI), Ottawa, Jan 25, 2011.
- [C175] W. N. Ye, "Silicon Photonics," Invited talk at the Department of Physics Colloquium, Carleton University, Ottawa, Nov. 2, 2010.
- [C176] W. N. Ye, "Silicon Photonics in Nanotechnology: Biosensors and Thin-film Solar Cells," *Carleton-Israel Nanotechnology Workshop*, Ottawa, Oct 4-5, 2010.
- [C177] W. N. Ye, "Silicon-based sensors," Ottawa Hospital Research Institute (OHRI), Ottawa, Canada, Sep. 21, 2010.
- [C178] W. N. Ye, "Silicon Photonics: Devices, Applications and Challenges," *International Conference on Nanotechnology: Fundamentals and Applications*, International Academy of Science, Engineering and Technology (ASET), Ottawa, Aug. 2010 (Keynote).
- [C179] W. N. Ye, "Silicon-based sensors," Children's Hospital of Eastern Ontario (CHEO) Research Institute, Ottawa, Canada, Jul. 19, 2010.
- [C180] W. N. Ye, "Silicon-based polarization splitters and sensors," Neptec Design Group, Ottawa, Canada, Jul. 15, 2010.



- [C181] W. N. Ye, "Silicon-based polarization splitters and sensors," Ciena Corporation, Ottawa, Canada, Jun. 30, 2010.
- [C182] W. N. Ye, K. Goshu, and A. Tam, "Vertically Coupled Si-based Ring Resonators For Sensing Applications," *Canadian Institute for Photonic Innovations (CIPI) Student Conference 2010*, Niagara Falls, Canada, June 2010.
- [C183] W. N. Ye, "Optical Device Design, Fabrication and Characterization," Seminar Series, Ottawa-Carleton Optical Society of America Student Chapter, Ottawa, Canada, Nov. 19, 2009.
- [C184] W. N. Ye, "Materials and Design Optimization for Opto-electronic Integration," Department of Electronics Seminar Series, Carleton University, January 3, 2008.
- [C185] W. N. Ye, J. Michel, and L. C. Kimerling, "Athermal high-index-contrast waveguide design and its Applications in Opto-electronic Integration," poster presentation at Materials Day, Massachusetts Institute of Technology, October 16, 2007.
- [C186] W. N. Ye, D.-X. Xu, S. Janz, P. Waldron, N. Garry Tarr, "Novel Stress-induced Passive Polarization Splitters/Filters," poster presentation at the 2007 MIT Microphotonics Center Spring Meeting, Cambridge, USA, April 17-18, 2007.
- [C187] W. N. Ye, D.-X. Xu, S. Janz, P. Waldron, N. Garry Tarr, "Stress Engineering For Polarization Control In SOI And Its Applications In Novel Passive Polarization Splitters/Filters," poster presentation at the *Canadian Institute for Photonic Innovations (CIPI) Student Conference 2006*, Quebec City, QC, Canada, June 2006.
- [C188] W. N. Ye, D.-X. Xu, S. Janz, P. Cheben, B. Lamontagne, N. Garry Tarr, "Modeling, Design, and Fabrication of Novel Photonic Devices," *Japan Society for the Promotion of Science (JSPS) Summer Exchange Program*, Sokendai, Hayama, Japan, June 2005. [Won Best Poster Presentation Award.]
- [C189] W. N. Ye, D.-X. Xu, S. Janz, P. Cheben, B. Lamontagne, N. Garry Tarr, "Silicon-on-Insulator (SOI) Platform For Making Multifunctional and High-density Integrated Photonics Devices," *German-Canadian Young Scientists Photonics Forum*, Munich, Germany, June 2005.
- [C190] W. N. Ye, D.-X. Xu, S. Janz, P. Cheben, B. Lamontagne, M.-J. Picard, N. Garry Tarr, "Stress Engineering in Silicon-on-insulator (SOI) waveguides interferometric devices," poster presentation at *the Workshop for Si-based Photonics*, Hamilton, Ontario, Canada, Nov 12, 2004.
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