

Yoshitomo Okawachi, Ph.D.

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RESEARCH AND PROFESSIONAL EXPERIENCE

- Research Scientist**, Columbia University (Jul. 2015 - Present)
Principal Investigator: Alexander L. Gaeta
- Lab Manager for Gaeta Group
 - Mentoring postdoctoral associate, Ph.D. students, and undergraduates
 - Writing and editing manuscripts, progress reports, and research proposals
- Research Associate**, Cornell University (Jun. 2011 - Jun. 2015)
Principal Investigator: Alexander L. Gaeta
- Postdoctoral Associate**, Cornell University (Jun. 2008 - May 2011)
Principal Investigator: Alexander L. Gaeta
- Visiting Research Assistant**, University of Campinas (Jul. - Aug. 2007)
Principal Investigator: Hugo L. Fragnito

EDUCATION

- Cornell University**, School of Applied and Engineering Physics
- Ph.D.**, *Applied Physics*, 2006 – 2008
- Dissertation Title: “Slow Light and Tunable All-Optical Delays”
 - Thesis Committee: Alexander L. Gaeta (Chair), Michal Lipson, Chris Xu
- M. S.**, *Applied Physics*, 2004 – 2006
- Advisor: Alexander L. Gaeta
- M. Eng.**, *Engineering Physics*, 2002 – 2003
- Advisor: Alexander L. Gaeta
- B. S.**, *Engineering Physics*, 1998 – 2002

RESEARCH INTERESTS

We study and engineer nonlinear interaction between light and matter in photonic structures. Research areas include optical frequency comb generation in silicon-based waveguides and microresonators, coherent computing based on degenerate optical parametric oscillation in microresonators, parametric nonlinear interactions in photonic devices, slow light, and all-optical signal processing using space-time duality techniques.

PROFESSIONAL ACTIVITIES

- Member of the Optical Society (OSA)
- Associate Editor for Optics Letters: Nonlinear Optics and Ultrafast Photonics (2018 – Present)
- Vice Chair, Integrated Optics (PI), OSA Technical Group (2019 – Present)
- CLEO Subcommittee S&I 4: Nonlinear Optical Technologies (2015 – 2018)
- Latin America Optics and Photonics Conference Subcommittee: Nonlinear Optics (2018)
- OSA Publishing Journal Rapid Action Committee (2017)
- OSA Tellers Committee (2015 – 2017)
- Ivan P. Kaminow Outstanding Early Career Professional Prize Review Committee (2018)
- Siegman International School on Lasers Review Committee (2018)

- Reviewer: Science, Nat. Mater., Nat. Photon., Nat. Phys., Phys. Rev. X, Nat. Commun., Optica, Sci. Rep., APL Photonics, Commun. Phys., IEEE J. of Sel. Top. in Quantum Electron., Opt. Lett., Opt. Express, Appl. Phys. Lett., IEEE/OSA J. of Lightwave Technol., IEEE Photon. J., IEEE Photon. Technol. Lett., IEEE J. of Quantum Electron., Appl. Phys. B, J. of the Opt. Soc. Am. B, Appl. Opt., Opt. Commun., J. Mod. Opt.
- Conference on Lasers and Electro-Optics Session Presider (2013, 2014, 2016 – 2019)
- OSA Early Career Professionals Program
 - Frontiers in Optics Session Presider (2008, 2010)
 - Reviewer for OSA Chapter & Section Grant, OSA Foundation Jean Bennett Memorial Travel Grant, OSA Foundation Youth Science Outreach Grant, and Student Chapter and Local Section Excellence Awards
 - Young Professionals Advisory Group for OSA Publication Council
 - Student Chapter Leadership Programming Committee (2011)
 - Reviewer for OSA’s Optics Discovery Kit (youth education resource)
 - Optics and Photonics News (OPN) Electronic Information column

TEACHING EXPERIENCE

Substitute Lecturer, School of Applied and Engineering Physics
Cornell University, Ithaca, New York, USA

- A&EP 3620 Intermediate Quantum Mechanics, Spring 2015.
- A&EP 4400 Nonlinear Optics, Spring 2012, 2014.

Teaching Assistant, School of Applied and Engineering Physics
Cornell University, Ithaca, New York, USA

- A&EP 1100 Lasers and its Applications in Science, Medicine and Technology, Fall 2002, 2003.
- A&EP 4340 Continuum Physics, Spring 2003.

UNIVERSITY ACTIVITIES

Faculty Advisor, Cornell University OSA Student Chapter (Jul. 2012 - Jun. 2015)

President, Cornell University OSA Student Chapter (Apr. 2006 - Mar. 2008)

HONORS AND AWARDS

- OSA Ambassador 2017
- 2017 Recipient, Tingye Li Innovation Prize
- 2016 Semi-Finalist, Tingye Li Innovation Prize
- 2011 *Physics World* Top 10 Breakthroughs
- 2007 Finalist, New Focus/Bookham Student Award

PATENTS

1. B. Stern, M. Lipson, X. Ji, A. L. Gaeta, and **Y. Okawachi**, *Fully integrated chip platform for electrically pumped frequency comb generation*. Provisional US Patent Application, Serial No: 62/650,086.
2. A. L. Gaeta, M. Lipson, A. R. Johnson, and **Y. Okawachi**, *Parametric comb generation via nonlinear wave mixing in high-Q optical resonator coupled to built-in laser resonator*, Patent. No. 20,160,134,078 (2016).
3. M. Lipson, A. L. Gaeta, A. G. Griffith, J. Cardenas, R. K. W. Lau, **Y. Okawachi**, and R. Fain, *On-chip integrated gas sensor based on photonic sensing*, Patent. No. 20,150,323,450 (2015).

SELECT PEER REVIEWED PUBLICATIONS

[*h-index* = 39; >6200 total citations (Google Scholar); Equal contribution denoted with †]

1. B. Stern, X. Ji, **Y. Okawachi**, A. L. Gaeta, and M. Lipson, “Battery-operated integrated frequency comb generator,” *Nature* **562**, 401 (2018).
2. **Y. Okawachi**, M. Yu, J. Cardenas, X. Ji, A. Klenner, M. Lipson, and A. L. Gaeta, “Carrier envelope offset detection via simultaneous supercontinuum and second harmonic generation in a silicon-nitride waveguide,” *Opt. Lett.* **43**, 4627 (2018).
3. M. Yu, **Y. Okawachi**, A. G. Griffith, N. Picqué, M. Lipson, and A. L. Gaeta, “Silicon chip-based mid-infrared dual-comb spectroscopy,” *Nature Commun.* **9**, 1869 (2018).
4. **Y. Okawachi**[†], M. Yu[†], K. Luke, D. O. Carvalho, M. Lipson, and A. L. Gaeta, “Quantum random number generator using a microresonator-based Kerr oscillator,” *Opt. Lett.* **41**, 4194 (2016).
5. M. Yu, **Y. Okawachi**, A. G. Griffith, M. Lipson, and A. L. Gaeta, “Mode-locked mid-infrared frequency combs in a silicon microresonator,” *Optica* **3**, 854 (2016).
6. **Y. Okawachi**[†], M. Yu[†], K. Luke, D. O. Carvalho, S. Ramelow, A. Farsi, M. Lipson, and A. L. Gaeta, “Dual-pumped degenerate Kerr oscillator in a silicon nitride microresonator,” *Opt. Lett.* **40**, 5267 (2015).
7. K. Saha, **Y. Okawachi**, B. Shim, J. S. Levy, M. A. Foster, R. Salem, A. R. Johnson, M. R. E. Lamont, M. Lipson, and A. L. Gaeta, “Modelocking and femtosecond pulse generation in chip-based frequency combs,” *Opt. Express* **21**, 1335 (2013).
Selected for Spotlight on Optics (February, 2013).
8. R. Halir, **Y. Okawachi**, J. S. Levy, M. A. Foster, M. Lipson, and A. L. Gaeta, “Ultrabroadband supercontinuum generation in a CMOS-compatible platform,” *Opt. Lett.* **37**, 1685 (2012).
Selected for Virtual Journal for Biomedical Optics (June, 2012).
9. **Y. Okawachi**, K. Saha, J. S. Levy, Y. H. Wen, M. Lipson, and A. L. Gaeta, “Octave-spanning frequency comb generation in a silicon nitride chip,” *Opt. Lett.* **36**, 3398 (2011).
10. **Y. Okawachi**, M. S. Bigelow, J. E. Sharping, Z. Zhu, A. Schweinsberg, D. J. Gauthier, R. W. Boyd, and A. L. Gaeta, “Tunable all-optical delays via Brillouin slow light in an optical fiber,” *Phys. Rev. Lett.* **94**, 153902 (2005).

OTHER PEER REVIEWED PUBLICATIONS

11. M. Yu, B. Desiatov, **Y. Okawachi**, A. L. Gaeta, and M. Lončar, “Coherent two-octave-spanning supercontinuum generation in lithium-niobate waveguides,” *Opt. Lett.* **44**, 1222 (2019).
Selected for Spotlight on Optics (March, 2019).
12. D. Waldburger, A. S. Mayer, C. G. E. Alfieri, J. Nürnberg, A. R. Johnson, X. Ji, A. Klenner, **Y. Okawachi**, M. Lipson, A. L. Gaeta, and U. Keller, “Tightly locked optical frequency comb from a semiconductor disk laser,” *Opt. Express* **27**, 1786 (2019).
13. L. Koehler, P. Chevalier, E. Shim, B. Desiatov, A. Shams-Ansari, M. Piccardo, **Y. Okawachi**, M. Yu, M. Lončar, M. Lipson, A. L. Gaeta, and F. Capasso, “Direct thermo-optical tuning of silicon microresonators for the mid-infrared,” *Opt. Express* **26**, 34965 (2018).

14. J. K. Jang, A. Klenner, X. Ji, **Y. Okawachi**, M. Lipson, and A. L. Gaeta, "Synchronization of coupled optical microresonators," *Nature Photon.* **12**, 688 (2018).
15. M. Yu, **Y. Okawachi**, C. Joshi, X. Ji, M. Lipson, and A. L. Gaeta, "Gas-phase microresonator-based comb spectroscopy without an external pump laser," *ACS Photonics* **5**, 2780 (2018).
16. A. Dutt, C. Joshi, X. Ji, J. Cardenas, **Y. Okawachi**, K. Luke, A. L. Gaeta, and M. Lipson, "On-chip dual comb source for spectroscopy," *Sci. Adv.* **4**, e1701858 (2018).
17. C. S. Joshi, A. Klenner, **Y. Okawachi**, M. Yu, X. Ji, K. Luke, M. Lipson, and A. L. Gaeta, "Counter-rotating cavity solitons in a silicon nitride microresonators," *Opt. Lett.* **43**, 547 (2018).
18. **Y. Okawachi**, M. Yu, J. Cardenas, X. Ji, M. Lipson, and A. L. Gaeta, "Coherent directional supercontinuum generation," *Opt. Lett.* **42**, 4466 (2017).
19. M. Yu, **Y. Okawachi**, A. G. Griffith, M. Lipson, and A. L. Gaeta, "Microresonator-based high-resolution gas spectroscopy," *Opt. Lett.* **42**, 4442 (2017).
20. **Y. Okawachi**, M. Yu, V. Venkataraman, P. Latawiec, A. G. Griffith, M. Lipson, M. Lončar, and A. L. Gaeta, "Competition between Raman and Kerr effects in microresonator comb generation," *Opt. Lett.* **42**, 2086 (2017).
21. X. Ji, F. A. S. Barbosa, S. P. Roberts, A. Dutt, J. Cardenas, **Y. Okawachi**, A. Bryant, A. L. Gaeta, and M. Lipson, "Ultra-low-loss on-chip resonators with sub-milliwatt parametric oscillation threshold," *Optica* **4**, 619 (2017).
22. M. Yu, J. K. Jang, **Y. Okawachi**, S. Miller, K. Luke, A. G. Griffith, M. Lipson, and A. L. Gaeta, "Breather soliton dynamics in microresonators," *Nature Commun.* **8**, 14569 (2017).
23. J. K. Jang, **Y. Okawachi**, M. Yu, K. Luke, X. Ji, M. Lipson, and A. L. Gaeta, "Dynamics of mode-coupling-induced microresonator frequency combs in normal dispersion," *Opt. Express* **24**, 28794 (2016).
24. A. S. Mayer, C. R. Phillips, C. Langrock, A. Klenner, A. R. Johnson, K. Luke, **Y. Okawachi**, M. Lipson, A. L. Gaeta, M. M. Fejer, and U. Keller, "Offset-free gigahertz midinfrared frequency comb based on optical parametric amplification in a periodically poled lithium niobate waveguide," *Phys. Rev. Applied* **6**, 054009 (2016).
25. A. G. Griffith, M. Yu, **Y. Okawachi**, J. Cardenas, A. Mohanty, A. L. Gaeta, and M. Lipson, "Raman-assisted coherent, mid-infrared frequency combs in silicon microresonators," *Opt. Express* **24**, 13044 (2016).
26. C. S. Joshi, J. K. Jang, K. Luke, X. Ji, S. A. Miller, A. Klenner, **Y. Okawachi**, M. Lipson, and A. L. Gaeta, "Thermally controlled comb generation and soliton modelocking in microresonators," *Opt. Lett.* **41**, 2565 (2016).
Selected for Spotlight on Optics (June, 2016).
27. A. Klenner, A. S. Mayer, A. R. Johnson, K. Luke, M. R. E. Lamont, **Y. Okawachi**, M. Lipson, A. L. Gaeta, and U. Keller, "Self-referenced gigahertz frequency combs based on silicon nitride waveguides," *Opt. Express* **24**, 11043 (2016).
28. A. R. Johnson, A. S. Mayer, A. Klenner, K. Luke, E. S. Stranford, M. R. E. Lamont, **Y. Okawachi**, F. W. Wise, M. Lipson, U. Keller, and A. L. Gaeta, "Octave-spanning coherent supercontinuum from a silicon nitride waveguide," *Opt. Lett.* **40**, 5117 (2015).
Selected for Spotlight on Optics (November, 2015).
29. K. Luke, **Y. Okawachi**, M. R. E. Lamont, A. L. Gaeta, and M. Lipson, "Broadband mid-infrared frequency comb generation in a Si₃N₄ microresonator," *Opt. Lett.* **40**, 4823 (2015).
Selected for Spotlight on Optics (October, 2015).
30. J. Cardenas, M. Yu, **Y. Okawachi**, C. B. Poitras, R. K. W. Lau, A. Dutt, A. L. Gaeta, and M. Lipson, "Optical nonlinearities in high confinement SiC waveguides," *Opt. Lett.* **40**, 4138 (2015).
31. S. Miller, **Y. Okawachi**, S. Ramelow, K. Luke, A. Farsi, M. Lipson, and A. L. Gaeta, "Tunable frequency combs based on dual microring resonators," *Opt. Express* **23**, 21509 (2015).

32. R. K. W. Lau, M. R. E. Lamont, **Y. Okawachi**, and A. L. Gaeta, "Effects of multiphoton absorption on parametric comb generation in silicon microresonators," *Opt. Lett.* **40**, 2778 (2015).
33. A. S. Mayer, A. Klenner, A. R. Johnson, K. Luke, M. R. E. Lamont, **Y. Okawachi**, M. Lipson, A. L. Gaeta, and U. Keller, "Frequency comb offset detection using silicon nitride waveguide," *Opt. Express* **23**, 15440 (2015).
34. A. Griffith, R. K. W. Lau, J. Cardenas, **Y. Okawachi**, A. Mohanty, R. Fain, Y. H. D. Lee, M. Yu, C. T. Phare, C. B. Poitras, A. L. Gaeta, and M. Lipson, "Silicon-chip mid-infrared frequency comb generation," *Nature Commun.* **6**, 6299 (2015).
35. M. Fridman, **Y. Okawachi**, S. Clemmen, M. Menard, M. Lipson, and A. L. Gaeta, "Waveguide-based single-shot temporal cross-correlator," *J. Opt.* **17**, 035501 (2015).
36. A. R. Johnson[†], **Y. Okawachi**[†], M. R. E. Lamont, J. S. Levy, M. Lipson, and A. L. Gaeta, "Microresonator-based comb generation without an external laser source," *Opt. Express* **22**, 1394 (2014).
37. **Y. Okawachi**, M. R. E. Lamont, K. Luke, D. O. Carvalho, M. Yu, M. Lipson, and A. L. Gaeta, "Bandwidth shaping of parametric frequency combs via dispersion engineering," *Opt. Lett.* **39**, 3535 (2014).
38. S. Miller, K. Luke, **Y. Okawachi**, J. Cardenas, A. L. Gaeta, and M. Lipson, "On-chip ultra-broadband frequency conversion via simultaneous second and third-order optical nonlinearity," *Opt. Express* **22**, 26517 (2014).
39. S. Ramelow, A. Farsi, S. Clemmen, J. S. Levy, A. R. Johnson, **Y. Okawachi**, M. R. E. Lamont, M. Lipson, and A. L. Gaeta, "Strong polarization mode coupling in ring resonators," *Opt. Lett.* **39**, 5134 (2014).
40. R. K. W. Lau, M. R. E. Lamont, A. Griffith, **Y. Okawachi**, M. Lipson, and A. L. Gaeta, "Octave-spanning mid-infrared supercontinuum generation in silicon waveguides," *Opt. Lett.* **39**, 4518 (2014).
41. M. R. E. Lamont, **Y. Okawachi**, and A. L. Gaeta, "Route to stabilized ultrabroadband microresonator-based frequency combs," *Opt. Lett.* **38**, 3478 (2013).
42. **Y. Okawachi**, R. Salem, A. R. Johnson, K. Saha, J. S. Levy, M. Lipson, and A. L. Gaeta, "Asynchronous single-shot characterization of high-repetition-rate ultrafast waveforms using a time-lens-based temporal magnifier," *Opt. Lett.* **37**, 4892 (2012).
43. K. Saha[†], **Y. Okawachi**[†], J. S. Levy, K. Luke, R. K. W. Lau, M. A. Foster, M. Lipson, and A. L. Gaeta, "Broadband parametric frequency comb generation with a 1- μm pump source," *Opt. Express* **20**, 26935 (2012).
44. J. S. Levy, K. Saha, **Y. Okawachi**, M. A. Foster, A. L. Gaeta, and M. Lipson, "High-performance silicon-based multiple-wavelength source," *Photon. Technol. Lett.* **24**, 1375 (2012).
45. **Y. Okawachi**, O. Kuzucu, M. A. Foster, R. Salem, A. C. Turner-Foster, A. Biberman, N. Ophir, K. Bergman, M. Lipson, and A. L. Gaeta, "Characterization of nonlinear optical crosstalk in silicon nanowaveguides," *Photon. Technol. Lett.* **24**, 185 (2012).
46. **Y. Okawachi** and A. L. Gaeta, "Nonlinear photonics: Compressing light and sound," *Nature Photonics* **6**, 274 (2012).
47. **Y. Okawachi**, A. L. Gaeta, and M. Lipson, "Breakthroughs in nonlinear silicon photonics 2011," *Photon. J.* **4**, 601 (2012).
48. N. Ophir, R. K. W. Lau, M. Ménard, X. Zhu, K. Padmaraju, **Y. Okawachi**, R. Salem, M. Lipson, A. L. Gaeta, and K. Bergman, "Wavelength conversion and unicast of 10-Gb/s data spanning up to 700 nm using a silicon nanowaveguide," *Opt. Express* **20**, 6488 (2012).
49. A. R. Johnson[†], **Y. Okawachi**[†], J. S. Levy*, J. Cardenas, K. Saha, M. Lipson, and A. L. Gaeta, "Chip-based frequency combs with sub-100-GHz repetition rates," *Opt. Lett.* **37**, 875 (2012).

50. N. Ophir, R. K. W. Lau, M. Ménard, R. Salem, K. Padmaraju, **Y. Okawachi**, M. Lipson, A. L. Gaeta, and K. Bergman, "First demonstration of a 10-Gb/s end-to-end link at 1884 nm based on four-wave mixing of telecom-band RZ data in silicon waveguides," *Photon. Technol. Lett.* **24**, 276 (2012).
51. M. Fridman, A. Farsi, **Y. Okawachi**, and A. L. Gaeta, "Demonstration of temporal cloaking," *Nature* **481**, 62 (2012).
52. B. Shim, S. Schrauth, L. T. Vuong, **Y. Okawachi**, and A. L. Gaeta, "Dynamics of elliptical beams in the anomalous group-velocity dispersion regime," *Opt. Express* **19**, 9139 (2011).
53. R. K. W. Lau, M. Ménard, **Y. Okawachi**, M. A. Foster, A. C. Turner-Foster, R. Salem, M. Lipson, and A. L. Gaeta, "Continuous-wave mid-infrared frequency conversion in silicon nanowaveguides," *Opt. Lett.* **36**, 1262 (2011).
54. Y. Zhu, E. Cabrera-Granado, O.G. Calderon, S. Melle, **Y. Okawachi**, A.L. Gaeta, D.J. Gauthier, "Competition between the modulation instability and stimulated Brillouin scattering in a broadband slow light device," *J. Opt.* **12**, 104019 (2010).
55. Y. Dai, **Y. Okawachi**, A. C. Turner-Foster, M. Lipson, A. L. Gaeta, and C. Xu, "Continuously tunable parametric delay via a cascading discrete stage," *Opt. Express* **18**, 333 (2010).
56. O. Kuzucu, **Y. Okawachi**, R. Salem, M. A. Foster, A. C. Turner-Foster, M. Lipson, and A. L. Gaeta, "Spectral phase conjugation via temporal imaging," *Opt. Express* **17**, 20605 (2009).
57. M. A. Foster, R. Salem, **Y. Okawachi**, A. C. Turner-Foster, M. Lipson, and A. L. Gaeta, "Ultrafast waveform compression using a time-domain telescope," *Nature Photon.* **3**, 581 (2009).
58. I. H. Agha, **Y. Okawachi**, and A. L. Gaeta, "Theoretical and experimental investigation of broadband cascaded four-wave mixing in high-Q microspheres," *Opt. Express* **17**, 16209 (2009).
59. Y. Dai, X. Chen, **Y. Okawachi**, A. C. Turner-Foster, M. A. Foster, M. Lipson, A. L. Gaeta, and C. Xu, "1 μ s tunable delay using parametric mixing and optical phase conjugation in Si waveguides: reply," *Opt. Express* **17**, 16029 (2009).
60. Y. Dai, X. Chen, **Y. Okawachi**, A. C. Turner-Foster, M. A. Foster, M. Lipson, A. L. Gaeta, and C. Xu, "1 μ s tunable delay using parametric mixing and optical phase conjugation in Si waveguides," *Opt. Express* **17**, 7004 (2009).
61. **Y. Okawachi**, R. Salem, M. A. Foster, A. C. Turner-Foster, M. Lipson, and A. L. Gaeta, "High-resolution spectroscopy using a frequency magnifier," *Opt. Express* **17**, 5691 (2009).
62. J. D. Marconi, S. Arismar Cerqueira Jr., J. T. Robinson, N. Sherwood-Droz, **Y. Okawachi**, H. E. Hernandez-Figueroa, M. Lipson, A. L. Gaeta, and H. L. Fragnito, "Performance investigation of microphotonic-silicon devices in a field-trial all-optical network," *Opt. Commun.* **282**, 849 (2009).
63. **Y. Okawachi**, M. A. Foster, X. Chen, A. C. Turner-Foster, R. Salem, M. Lipson, C. Xu, and A. L. Gaeta, "Large tunable delays using parametric mixing and phase conjugation in Si nanowaveguides," *Opt. Express* **16**, 10349 (2008).
64. **Y. Okawachi**, R. Salem, and A. L. Gaeta, "Continuous tunable delays at 10 Gb/s data rates using self-phase modulation and dispersion," *J. Lightwave Technol.* **12**, 3710 (2007).
65. **Y. Okawachi**, A. D. Slepkov, I. H. Agha, D. F. Geraghty, and A. L. Gaeta, "Absorption of ultrashort optical pulses in water," *J. Opt. Soc. Am. A* **24**, 3343 (2007).
Selected for Virtual Journal of Ultrafast Science (November, 2007).
66. I. H. Agha, **Y. Okawachi**, M. A. Foster, J. E. Sharping, and A. L. Gaeta, "Four-wave mixing parametric oscillations in dispersion-compensated high-Q silica microspheres," *Phys. Rev. A* **76**, 043837 (2007).
67. **Y. Okawachi**, J. E. Sharping, C. Xu, and A. L. Gaeta, "Large widely tunable fractional delays based on wavelength conversion and dispersion," *Opt. Express* **14**, 12022 (2006).
68. **Y. Okawachi**, M. A. Foster, J. E. Sharping, A. L. Gaeta, Q. Xu, and M. Lipson, "All-optical slow-light on a photonic chip," *Opt. Express* **14**, 2317 (2006).

69. **Y. Okawachi**, J. E. Sharping, A. L. Gaeta, M. S. Bigelow, A. Schweinsberg, R. W. Boyd, Z. Zhu, and D. J. Gauthier, “All-optical tunable slow-light delays via stimulated scattering,” **Optics in 2005** in *Optics and Photonics News* **16**, 46 (2005).
70. Z. Zhu, D. J. Gauthier, **Y. Okawachi**, J. E. Sharping, A. L. Gaeta, R. W. Boyd, and A. E. Willner, “Numerical study of all-optical slow-light delays via stimulated Brillouin scattering in an optical fiber,” *J. Opt. Soc. Am. B* **22**, 2378 (2005).
71. J. E. Sharping, **Y. Okawachi**, J. van Howe, C. Xu, and A. L. Gaeta, “All-optical, wavelength and bandwidth preserving, pulse delay based on parametric wavelength conversion and dispersion,” *Opt. Express* **13**, 7872 (2005).
72. J. E. Sharping, **Y. Okawachi**, and A. L. Gaeta, “Wide bandwidth slow light using a Raman fiber amplifier,” *Opt. Express* **13**, 6092 (2005).

OTHER PUBLICATIONS

1. **Y. Okawachi**, “Social media illuminate optics,” *Optics and Photonics News* **21**, 14 (2010).

INVITED SEMINARS AND PANELS

1. Mar. 2019 – Stevens Institute of Technology PHY Seminar Series: “On-chip based nonlinear photonics”
2. Dec. 2018 – University of Electro-Communications Seminar: “Silicon chip based nonlinear photonics”
3. Jun. 2018 – Elenion Seminar: “Silicon chip-based nonlinear photonics”
4. May 2018 – Panelist at OSA Nonlinear Optics Technical Group Panel Discussion: “Emerging Trends in Nonlinear Optics – A Review of CLEO: 2018”
5. Sep. 2017 – 2017 OSA Student Leadership Conference: “Transitioning from student to early-career professional”
6. Aug. 2017 – Osaka University OSA Traveling Lecturer Seminar: “Are you getting the most of your graduate career? Networking and volunteering for career development”
7. Aug. 2017 – Keio University Seminar: “Silicon chip based nonlinear photonics”
8. Aug. 2017 – Tokyo University OSA Traveling Lecturer Seminar: “Chip based nonlinear photonics”
9. Jun. 2017 – Cornell OSA Traveling Lecturer Seminar: “Are you getting the most of your PhD? Networking and volunteering for career development”
10. May 2017 – Thorlabs Talk Series: “Chip-based nonlinear photonics”
11. Mar. 2017 – OFS Laboratories Monthly Seminar: “Silicon-based nonlinear photonics”

SELECT CONFERENCE PRESENTATIONS (PRESENTER DENOTED WITH *)

1. **Y. Okawachi***, “Coherent supercontinuum generation in a silicon nitride chip,” Conference on Lasers and Electro-Optics and Quantum Electronics and Laser Science Conference (CLEO/QELS), **invited paper** SW4H.3, San Jose, California, USA, May 7–9, 2019.
2. **Y. Okawachi***, “On-chip frequency combs,” KEIO Symposium on Microresonator Frequency Comb, **invited paper**, Yokohama, Japan, Dec. 4-6, (2018).
3. **Y. Okawachi***, “Silicon nitride chip-based frequency combs,” JSAP-OSA Joint Symposia 2018, **invited paper** 21p-221B-1, Nagoya, Japan, Sept. 18-21, (2018).
4. **Y. Okawachi***, “Silicon-microresonator-based mid-infrared comb spectroscopy,” 2018 IEEE Photonics Society Summer Topicals Meeting Series, **invited paper** WA1.3, Waikoloa, Hawaii, USA, Jul. 9–11, 2018.

5. **Y. Okawachi***, “Silicon-based degenerate Kerr oscillator for coherent optical computing,” 2016 IEEE Photonics Society Summer Topicals Meeting Series, **invited paper** MD2.1, Newport Beach, California, USA, Jul. 11–13, 2016.
6. A. L. Gaeta and **Y. Okawachi***, “Silicon-based parametric frequency combs for the mid-IR,” High-Brightness Sources and Light-Driven Interactions Congress, Mid-Infrared Coherence Sources (MICS) Topical Meeting, **invited paper** MM8C.3, Long Beach, California, USA, Mar. 20–22, 2016.
7. **Y. Okawachi***, M. Lipson, and A. L. Gaeta, “Ultrafast nonlinear Si optics,” Photonics West, **invited paper** 9347-2, San Francisco, California, USA, Feb. 7–12, 2015.
8. **Y. Okawachi***, “Microresonator-based parametric frequency combs,” Photonics North, **invited paper**, Montreal, Canada, May 28–30, 2014.
9. **Y. Okawachi***, “Silicon-based parametric frequency combs,” Photonics Europe, **invited paper** 8434-37, Brussels, Belgium, Apr. 16–20, 2012.
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