

**Lipson, M., Ph.D.**  
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Associate Professor  
School of Electrical and Computer Engineering  
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**Education**

- B.S. Physics, Technion, 1992
- M.S. Physics, Technion, 1994. Thesis: “Acceptors in GaAs/AlGaAs QW's Under an Applied Magnetic Field,” Advisor: Prof. Elisha Cohen
- Ph.D., Physics, Technion, 1998. Thesis: “Coupled Exciton-Photon Modes in Semiconductor Optical Microcavities,” Advisor: Prof. Elisha Cohen

**Academic positions**

2007- Associate Professor, Cornell University, School of Electrical and Computer Engineering  
2001 – 2007 Assistant Professor, Cornell University, School of Electrical and Computer Engineering  
1999 – 2001 Postdoctoral Associate, MIT, Department of Material Science. Worked with Prof. Lionel Kimerling on Silicon light emitters

**Honors and Awards**

- Provost’s Award for Distinguished Scholarship, 2009
- OSA Fellow, 2007
- Fulbright Fellowship, 2007
- IEEE Sr. Member, 2007
- IBM Faculty Award, 2006
- Shaping The Future, EXPO’2000

**Professional Activities**

Journal editor

1. Guest Editor, IEEE Journal of Selected Topics in Quantum Electronics 2009
2. Advisory Board of IEEE Photonics Journal 2009
3. Topical Editor, Integrated Optics, Optics Letters, 2005-2006

Society Leadership

4. IEEE Photonics Advisory Board 2009-2012
5. Chair, OSA Integrated Optics Technical Group, 2004- present
6. Chair of IEEE Ithaca chapter, 2004

Conference organization

7. 2009 NAE Frontiers of Engineering, Beckman Center, Irvine CA September 10-12, 2009

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8. Chair, Micro- & Nano-Photonics CLEO subcommittee, Baltimore Convention Center, Baltimore, Maryland, June 2-4, 2009.
9. Member Committee, the 21<sup>st</sup> Annual Meeting of the IEEE Lasers and Electro-Optics (IEEE/LEOS) Society, New Port Beach, CA, November 9-13, 2008.
10. Technical Program Committee Member, 2008 Slow and Fast Light Topical Meeting, Boston, MA, July 13-16, 2008.
11. Program Committee, Micro- & Nano-Photonics CLEO subcommittee, San Jose, CA, May 4-9, 2009.
12. Co-Chair, Frontiers in Nanophotonics and Plasmonics, Guarujá, SP Brazil, November 9-14, 2007.
13. Optical Interconnects & Processing Systems Committee, Annual meeting of the IEEE Lasers and Electro Optics Society, Lake Buena Vista, FL, October 21-25, 2007.
14. Program Committee, Frontiers in Optics (FiO) - The 91st OSA Annual Meeting San Jose, California, September 16-20, 2007.
15. Chair, Nanophotonics Devices and Applications Integrated Photonics Research and Applications (IPRA) subcommittee Salt Lake City, July 9-13, 2007.
16. Chair, Micro- & Nano-Photonics CLEO subcommittee, Baltimore, MD, May 6-11, 2007.
17. Nanophotonics Committee, Annual Meeting of the IEEE Lasers and Electro Optics (IEEE/LEOS) Society, Montreal, Quebec, Canada, October 29-November 2, 2006.
18. International Advisory Committee, Group IV Photonics, Ottawa, Ontario, Canada, September 13-15, 2006.
19. Subcommittee Chair, Nanophotonics Devices and Applications Integrated Photonics Research and Applications (IPRA), Salt Lake City, Utah, July 9-13, 2006.
20. Member, Fundamentals of Metamaterials, Periodic & Random Media CLEO subcommittee, Long Beach, CA, May 21-26, 2006.
21. Co-Chair, MRS Symposium on Silicon photonics, March, San Francisco, 2006.
22. Symposium chair, International Semiconductor Device Research Symposium ISDRS conference, Washington, 2005.
23. Technical Committee, 18<sup>th</sup> Annual Meeting of the IEEE Lasers and Electro-Optics (IEEE/LEOS) Society, Sydney, Australia, October 23-27, 2005.
24. Technical committee, International Semiconductor Device Research Symposium (ISDRS).
25. Member, Nano Optics CLEO subcommittee, Baltimore, MD, May 22-27, 2005.
26. Program Committee member, "Nanophotonics for Information Systems" (NPIS), San Diego, CA on April 13-15, 2005.
27. Program committee member, SPIE Optical Science and Technology meeting Symposium on Tuning the Optical Response of Photonic Bandgap Structures, San Diego, August 2005.
28. Co-Chair, MRS Symposium on Rare Earth Doping for Optoelectronic Applications, March, San Francisco, 2005.
29. Co-Chair, SPIE ITCOM, Symposium on NanoPhotonics for Communication: Materials and Device, Philadelphia, PA, 2004.
30. Program committee member, SPIE Optical Science and Technology meeting Symposium on Tuning the Optical Response of Photonic Bandgap Structures, Denver, August 2004.
31. Committee member, IQEC-2004 Symposium on Nano-optics, May 2004.
32. Advisory board member, IEEE Nanoscale Device & System Integration (CNDSI) meeting, Miami, Florida, February 2004.

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33. International Advisory Committee Member, International Conference of Luminescence, Jerusalem, 2002.

Reviewer

34. Reviewer for NSF panels (NER, SBIR, NIRT, CAREER).

35. Reviewer for Physical Review B, Journal of Applied Physics, IEEE Photonics Technology Letters, IEEE Journal of Lightwave Technologies.

**Journal Publications**

**Total ISI citations: 3,102 (From Cornell work only)**

1. Chen, L., Preston, K., Manipatruni, S. and Lipson, M., "Integrated GHz silicon photonic interconnect with micrometer-scale modulators and detectors", **Optics Express**, Vol. 17, No. 17, 15428, 17 Aug 2009.
2. Dong, P., Chen, L., Xu, Q. and Lipson, M., "On-chip generation of high-intensity short optical pulses using dynamic microcavities", **Optics Letters**, Vol. 34, No. 15, 2315, 01 Aug 2009.
3. Gabrielli, L.H., Cardenas, J., Poitras, C.B. and Lipson, M., "Silicon nanostructure cloak operating at optical frequencies", **Nature Photonics**, DOI: 10.1038, NPHOTON.2009.117, 20 July 2009.
4. Lee, B.G., Biberman, A., Sherwood-Droz, N., Poitras, C.B., Lipson, M. and Bergman, K., "High-Speed 2x2 Switch for Multiwavelength Silicon-Photonic Networks-On-Chip", **IEEE J. Lightwave Technol.**, Vol. 27, No. 14, pp. 2900-2907, 15 Jul 2009.
5. **Invited Paper**, Lipson, M., "Silicon Photonics: the optical spice rack", **Electronic Letters**, Volume 45, issue 12 June 2009
6. Cardenas, J, Poitras, C, Robinson, J, Preston, K, Chen, L, and Lipson, M. "Low Loss etchless silicon photonic waveguides: **Optics Express**, Vol. 17, Issue 6, 16 Mar 2009
7. Foster, M.A., Salem, R., Geraghty, D.F., Turner-Foster, A.C., Lipson, M. and Gaeta, A.L., "Silicon-chip-based ultrafast optical oscilloscope", **Nature**, Vol 456, 81-84, 06 Nov. 2008.
8. Manipatruni, S., Dong, P., Xu, Q. and Lipson, M., "Tunable Superluminal Propagation on a Silicon Micro-chip", **Optics Letters**, Vol. 33, No. 24 04 Nov. 2008.
9. Gondarenko, A. and Lipson, M., "Low modal volume dipole-like dielectric slab resonator", **Optics Express**, Vol. 16, No. 11, p. 17689, 22 Oct. 2008.
10. J. Robinson, K. Preston, O. Painter, Lipson, M., "First-principle derivation of gain in high-index-contrast waveguides" **Optics Express**, Vol. 16, Issue 21, 03 October 2008.
11. Lee, B.G., Biberman, A., Dong, P., Lipson, M., and Bergman, K., "All-Optical Comb Switch for Multiwavelength Message Routing in Silicon Photonic Networks", **IEEE Photonics Technology Letters**, Vol. 20, No. 10, 15 May 2008.
12. Manipatruni, S., Poitras, C. B., Xu, Q., and Lipson, M., "High Speed Electro-Optic Tuning of the Optical Quality Factor of a Silicon Micro-Cavity", **Optics Letters**, Vol. 33, No. 14, 15 July 2008.
13. Salem, R., Foster, M. A., Turner, A. C., Geraghty, D. F., Lipson, M. and Gaeta, A. L., "Optical Time Lens Based on Four-Wave Mixing on a Silicon Chip", **Optics Letters**, Vol. 33, No. 10, 1047, 15 May 2008.
14. Turner, A. C., Foster, M. A., Gaeta, A. L. and Lipson, M., "Ultra-Low Power Parametric Frequency Conversion in a Silicon Microring Resonator", **Optics Express**, Vol. 16, No. 7, 4881, 31 March 2008.

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15. Preston, K., Dong, P., Schmidt, B. and Lipson, M., "High-Speed All-Optical Modulation Using Polycrystalline Silicon Microring Resonators", **Appl. Phys. Lett.**, Vol. 92, 151104, 14 April 2008.
16. Robinson, J.T., Chen, L. and Lipson, M., "On-Chip Gas Detection in Silicon Optical Microcavities", **Optics Express**, Vol. 16, No. 6, 4296, 13 March 2008.
17. Robinson, J.T. and Lipson, M., "Far-Field Control of Radiation from an Individual Optical Nanocavity: Analogue to an Optical Dipole", **Phys. Rev. Lett.**, Vol. 100, 043902, 01 Feb. 2008.
18. Dong, P., Preble, S.F., Robinson, J.T., Manipatruni, S. and Lipson, M., "Inducing Photonic Transitions between Discrete Modes in a Silicon Optical Microcavity", **Phys. Rev. Lett.**, Vol. 100, 033904, 25 Jan. 2008.
19. Foster, M.A., Turner, A.C., Lipson, M., and Gaeta, A. L., "Nonlinear optics in photonic nanowires", **Optics Express**, Vol. 16, No. 2, 21 Jan. 2008.
20. Salem, R., Foster, M. A., Turner, A. C., Geraghty, D. F., Lipson, M., and Gaeta, A. L., "Signal Regeneration Using Low-Power Four-Wave Mixing on Silicon Chip", **Nature Photonics**, Vol. 2, 35-38, Jan. 2008.
21. K. Preston, Schmidt, B., and Lipson, M., "Polysilicon Photonic Resonators for Large-Scale 3D Integration of Optical Networks," **Opt. Express**, Vol. 15, No. 25, 17283-17290, 10 December 2007.
22. Rong Sun, Po Dong, Ning-ning Feng, Ching-yin Hong, Jurgen Michel, Lipson, M., and Lionel Kimerling, "Horizontal Single and Multiple Slot Waveguides: Optical Transmission at  $\lambda = 1550$  nm," **Optics Express**, Vol. 15, Issue 26, pp. 17967-17972, 2007.
23. Schmidt, B.S., Yang, A.H., Erickson, D., and Lipson, M., "Optofluidic Trapping and Transport on Solid Core Waveguides Within a Microfluidic Device", **Optics Express**, Vol. 15, Issue 22, pp. 14322-14334, 2007.
24. Chen, L., Sherwood-Droz, N., and Lipson, M., "Compact Bandwidth-tunable Microring Resonators", **Optics Letters**, Vol. 32, No. 22, 3361, Nov. 15, 2007.
25. Manipatruni, S., Xu, Q., and Lipson, M., "PINIP Based High-Speed High-Extinction Ratio Micron-Size Silicon Electrooptic Modulator, **Opt. Express** 15, 13035-13042, 2007.
26. Dong, P., Preble, S.F., and Lipson, M., "All-Optical Compact Silicon Comb Switch", **Opt. Express**, Vol. 15, No. 15, 23 July 2007.
27. Xu, Q., Dong, P. and Lipson, M., "Breaking the Delay-Bandwidth Limit in a Photonic Structure," **Nature Physics**, Vol. 3, 406, June 2007.
28. Salem, R., Foster, M.A., Turner, A.C., Geraghty, D.F., Lipson, M. and Gaeta, A.L., "All-Optical Regeneration on a Silicon Chip," **Optics Express**, Vol. 15, No. 12, 7802, 11 June 2007.
29. Preble, S., Xu, Q., and Lipson, M., "Changing the Colour of Light in a Silicon Resonator", **Nature Physics**, Vol. 1, May 2007.
30. Lee, B.G., Small, B.A., Xu, Q., Lipson, M. and Bergman, K., "Characterization of a 4x4 Gb/s Parallel Electronic Bus to WDM Optical Link Silicon Photonic Translator", **IEEE Photonics Techn. Lett.**, Vol. 19, No. 7, 01 April 2007.
31. Schmidt, B., Xu, Q., Shakya, J., Manipatruni, S. and Lipson, M., "Compact Electro-Optic Modulator on Silicon-on-Insulator Substrates Using Cavities With Ultra-Small Modal Volumes," **Optics Express**, Vol. 15, No. 6, 3140, 19 March 2007.
32. Xu, Q. and Lipson, M., "All-Optical Logic Based on Silicon Micro-Ring Resonators," **Optics Express**, Vol. 15, No. 3, 924, 02 Feb. 2007.

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33. Lipson, M., "Silicon Photonics: An Exercise in Self Control," **Nature Photonics**, Vol. 1, No. 1, 18, January 2007.
34. Xu, Q., Manapatruni, S., Schmidt, B., Shakya, J. and Lipson, M., "12.5 Gbit/s Carrier-Injection-Based Silicon Micro-Ring Silicon Modulators," **Optics Express**, Vol. 15, No. 2, 430, 22 January 2007.
35. Sharping, J.E., Lee, K.F., Foster, M.A., Turner, A.C., Schmidt, B.S., Lipson, M., Gaeta, A.L. and Kumar, P., "Generation of Correlated Photons in Nanoscale Silicon Waveguides," **Optics Express**, Vol. 14, No. 25, 12388, 11 Dec. 2006.
36. Robinson, J.T., Preble, S.F. and Lipson, M., "Imaging Highly Confined Modes in Sub-Micron Scale Silicon Waveguides Using Transmission-Based Near-Field Scanning Optical Microscopy," **Optics Express**, Vol. 14, No. 22, 10588, 30 Oct. 2006.
37. Xu, Q., Schmidt, B., Shakya, J. and Lipson, M., "Cascaded Silicon Micro-Ring Modulators for WDM Optical Interconnection," **Optics Express**, Vol. 14, 9430, 02 Oct. 2006.
38. Guo, L., Krauss, T.D, Poitras C.B, Lipson, M., "Energy Transfer Between Colloidal Semiconductor Nanocrystals in an Optical Microcavity," **Appl. Phys. Lett.**, 89, 061104 (2006)
39. Poitras, C.B., Wu, H., Turner, A., Spencer, M.G., and Lipson, M., "Luminescence Dynamics and Waveguide Applications of Europium Doped Gallium Nitride Powder," **Applied Physics Letters**, 89, 111912 (2006).
40. Lee, B., Xu Q., Lipson, M. and Bergman, K. "Transmission of High Data Rate Optical Signals Through a Micron-Scale Silicon Ring Resonator," **Optics Letters**, Vol. 31, No. 18, 25 Aug. 2006, p. 2701-2703.
41. Lipson, M., "Compact Electro-optic Modulators on a Silicon Chip," **Journal of Selected Topics in Quantum Electronics**, 12, 1520 (2006). (invited).
42. Barrios, C. and Lipson, M. "Silicon Photonic Read Only Memory," **IEEE Journal of Lightwave Technologies**, Vol. 24, 7, pp. 2898-2905, July 2006.
43. Foster, M. A, Turner, A. C, Sharpening J. F., Schmidt B. S., Lipson, M. and Gaeta A. , "Broadband Optical Parametric Gain on a Silicon Photonic Chip," **Nature**, 441, pp. 960-963, 22 June 2006.
44. Xu Q., Shakya, J., and Lipson, M. "Direct Measurement of Tunable Optical Delays on Chip Analogue to Electromagnetically Induced Transparency," **Optics Express**, 14, pp. 6463-6468, 2006.
45. Martinez, L. and Lipson, M. "High Confinement Suspended Micro-ring Resonators in Silicon-on-Insulator," **Optics Express**, Vol. 14, Issue 13, pp. 6259-6263, June 2006.
46. Chen, L., Shakya, J., and Lipson, M. "Subwavelength Light Confinement in Integrated Metal Slot Waveguide on Silicon," **Optic Letters**, Vol. 31, 14, 2006.
47. Turner, A. C., Manolatou, C., Schmidt, B. S., Lipson, M., Foster, M. A., Sharping, J. E, and Gaeta, A. L., "Tailored anomalous group-velocity dispersion in silicon channel waveguides," **Optics Express**, 14, pp. 4357-4362, May 2006.
48. Gondarenko, A., Preble, S., Robinson, J., Chen, L., Lipson, H., and Lipson, M. "Spontaneous Emergence of Periodic Patterns in a Biologically-Inspired Simulation of Photonic Structures," **Physical Review Letters**, Vol. 96, 143904, April 2006.
49. Okawachi, Y., Foster, M., Sharping, J., Gaeta, A., Xu, Q., and Lipson, M., "All-Optical Slow-Light on a Photonic Chip," **Optics Express**, Vol. 14, Issue 6, pp. 2317-2322, March 2006.

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50. Manolatu, C. and Lipson, M., "All-Optical Silicon Modulators Based on Carrier Injection by Two-Photon Absorption," **IEEE Journal of Lightwave Technology**, Vol. 24, No. 3, pp. 1433-1439, March 2006.
51. Xu, Q., Sandhu, S., Povinelli, M.L., Shakya, J., Fan, S., and Lipson, M., "Experimental Realization of an On-Chip All-Optical Analogue to Electromagnetically Induced Transparency," **Physical Review Letters**, Vol. 96, 123901, 31 Mar. 2006. (reviewed by R. Boyd and D. Gauthier Nature News and Views, June 2006)
52. DeFranco, J.A., Schmidt, B. S., Lipson, M., and Malliaras, G.G., "Photolithographic Patterning of Organic Electronic Materials," **Organic Electronics: Physics, Materials, Applications**, Vol. 7, No. 1, February 2006.
53. Xu, Q. and Lipson, M., "Carrier-induced Optical Visibility in Silicon Ring Resonators," **Optics Letters**, Vol. 31, No. 3, 01 February 2006.
54. DeFranco, J., Schmidt, B.S., Lipson, M., and Malliaras, G., "Photolithographic Patterning of Organic Electronic Materials," **Journal of Organic Electronics**, Vol. 7, No. 1, February 2006.
55. Wu, H., Poitras, C. B., Lipson, M., and Spencer, M.G., "Photoluminescence and Cathodoluminescence Analyses of GaN Powder Doped with Eu," **Appl. Phys. Lett.**, Vol. 88, 011921, 02 Jan. 2006.
56. Bhatnagar, P., Mark, S.S., Kim, I., Chen, H., Schmidt, B.S., Lipson, M., Batt, C., "Dendrimer Scaffold based Electron Beam Patterning of Biomolecules," **Advanced Materials**, Volume 18, Issue 3 , pp. 315-319, Jan. 2006.
57. Barrios, C., and Lipson, M., "Electrically-Driven Silicon Resonant Light Emitting Device Based on Slot-Waveguide," **Optics Express**, vol.13, pp. 10092-10101, 2005.
58. Preble, S. F., Xu, Q., Schmidt, B. S., and Lipson, M., "Ultrafast All-Optical Modulation on a Silicon Chip," **Optics Letters**, Vol. 30, 2891-2893, 01 Nov. 2005.
59. Robinson, J. T., Manolatu, C., Chen, L., and Lipson, M., "Ultra small Mode Volumes in Dielectric Optical Microcavities," **Physical Review Letters**, Vol. 95, 143901, 2005.
60. **(Invited)**. Lipson, M., "Guiding, Modulating and Emitting Light on Silicon- Challenges and Opportunities" **IEEE Journal of Lightwave Technologies**, Vol. 23, p. 4222, 2005
61. Almeida, V., Xu, Q., and Lipson, M., "Ultrafast Integrated Semiconductor Optical Modulator Based on the Plasma-Dispersion Effect," **Optics Letters**, Vol. 30, pp. 2403-2405, 2005.
62. Xu, Q., Almeida, V., and Lipson, M., "Micrometer-scale all-optical wavelength converter on silicon," **Optics Letters**, Vol. 30, pp. 2733-2735, 2005.
63. Xu, Q., Schmidt, B., Pradhan, S., and Lipson, M., "Micrometer-scale Silicon Electro-Optic Modulator," **Nature**, Vol. 435, pp. 325-327, June 2005.
64. Wu, H., Poitras, C.B., Lipson, M., Spencer, M. G., Hunting, J., and DiSalvo, F.J., "Green Emission from Er-doped GaN Powder," **Appl. Phys. Lett.**, Vol. 86, 191918, May 2005.
65. Preble, S.F., Lipson, H., and Lipson, M., "Novel Two-Dimensional Photonic Crystals Designed by Evolutionary Algorithms," **Appl. Phys. Lett.**, Vol. 86, p. 6111, May 2005. (*GECCO 2005 Gold Medal for Human Competitive Automated Invention*)
66. Q. Xu, Almeida, V.R., and Lipson, M., "Demonstration of High Raman Gain in a Submicrometer-Size Silicon-on-Insulator Waveguide," **Optics Letters**, Vol. 30, pp. 35-37, Jan. 2005.
67. Barrios, C. and Lipson, M., "Modeling and Analysis of High-Speed Electro-Optic Modulation in High Confinement Silicon Waveguides Using Metal-Oxide-Semiconductor Configuration," **Journal of Applied Physics**, Vol. 96, pp. 6008-6015, 2004.

68. Almeida, V. R., Barrios, C. A., Panepucci, R. R., and Lipson, M., "All-Optical Control of Light on a Silicon Chip," **Nature**, pp.1081-1084, 2004.
69. Almeida, V.R., and Lipson, M., "Optical Bistability on a Silicon Chip," **Optics Letters**, Vol. 29, pp. 2387-2389, 2004.
70. Xu, Q., Almeida, V.R., and Lipson, M., "Time-Resolved Study of Raman Gain in Highly Confined Silicon-on-Insulator Waveguides," **Optics Express**, Vol. 12, pp. 4437-4442, 2004.
71. Xu, Q., Almeida, V.R., Panepucci, R.R., and Lipson, M., "Experimental Demonstration of Guiding and Confining Light in Nanometer-Size Low-Refractive-Index Material," **Optics Letters**, Vol. 29, pp.1626-1628, 2004.
72. Schmidt, B.S., Almeida, V., Manolatu, C., Preble, S., and Lipson, M., "Nano-Cavity in a Silicon Waveguide for Ultra Sensitive Detection," **Appl. Phys. Lett.**, Vol. 85, pp. 4854-4856, 2004.
73. Almeida, V. R., Xu, Q., Barrios, C. A., and Lipson, M., "Guiding and Confining Light in Void Nanostructure," **Optics Letters**, Vol. 29, pp.1209-1211, 2004.
74. Almeida, V. R., Barrios, C. A., Panepucci, R. R., Lipson, M., Foster, M.A., Quzounov, D. G., and Gaeta, A.L., "All-Optical Switching on a Silicon Chip," **Optics Letters**, Vol. 29, pp. 2867-2869, 2004.
75. Barrios, C. A., Almeida, V., Panepucci, R.R., Schmidt, B. S., and Lipson, M., "Compact Silicon Tunable Fabry-Pérot Resonator With Low Power Consumption," **IEEE Photonics Technology Letters**, Vol. 16, pp. 506-508, 2004.
76. Barrios, C. A., Almeida, V. R., Panepucci, R. R., and Lipson, M., "Electro-optic Modulation of Silicon-on-insulator Submicron-size Waveguide Devices," **IEEE Journal of Lightwave Technologies**, Vol. 21, pp. 2332-2340, 2003.
77. Barrios, C.A., Almeida, V. R., and Lipson, M., "Low-Power-Consumption Short-Length and High-Modulation-Depth Silicon Electro-Optic Modulator," **IEEE Journal of Lightwave Technologies**, Vol. 21, pp.1089-1098, 2003.
78. Poitras, C. B., Lipson, M., Hahn, M. A, Du, H., and Krauss, T.D., "Photoluminescence Enhancement of Colloidal Quantum Dots Embedded in a Monolithic Microcavity," **Appl. Phys. Lett.**, Vol. 82, pp. 4032-4034, 2003.
79. Almeida, V. R., Panepucci, R. R., and Lipson, M., "Nano-Taper for Compact Mode Conversion," **Optics Letters**, Vol. 28, pp. 1302-1304, 2003.
80. Lipson, M., Chen, T., Chen, K., Duan, K., and Kimerling, L.C., "Erbium in Si-based Light Confining Structures," **Materials Science and Engineering B**, Vol. 81, pp. 36-39, 2001.
81. Lipson, M. and Kimerling, L. C. "Strong Er/sup 3+/-photon Interaction," **Optical Materials**, Vol.16, pp. 47-52, 2001.
82. Lipson, M, Chen, T.D., Lim, D.R., and Kimerling, L. C. , "Er/sup 3+/-photon Interaction," **Journal of Luminescence**, Vol. 87, pp. 323-325, 2000.
83. Lipson, M. and Kimerling, L.C., "Er<sup>3+</sup> in Strong Light-Confining Microcavity," **Appl. Phys. Lett**, Vol. 77, pp. 1150-1152, 2000.
84. Lipson, M., Chen, T. D., Lim, D. R., Luan, A., Agarwal, A., Michel, H., Wada, K., and Kimerling, L. C., "Er-photon Interaction," **Journal of Luminescence**, Vol. 87-89, pp. 323-325, 2000.
85. Levy, E., Peles, D., Opher-Lipson, M., and Lipson, S. G. "Random Target Method of Measuring Modulation Transfer Function," **Applied Optics**, Vol. 38, pp. 679-683,1999.

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86. Opher-Lipson, M., Cohen, E., Armitrage, A., Skolnick, M.S., Fischer, T. A., and Roberts, J. S., "Confined Excitons, Landau Transitions and Cavity Mode Coupling in GaAs Microcavities," **Physical Review B** Vol. 59, pp.10261–10267, 1999.
87. Chen, T. D., Platero, M., Opher-Lipson, M., Palm, J., Michel, J., and Kimerling, L.C. , "The Temperature Dependence of Radiative and Non-radiative Processes at Er-O Centers in Si," **Physica B: Condensed Matter**, Vol. 273, pp. 322-325, 1999.
88. Opher-Lipson, M., Cohen, E., Fischer, T. A., Skolnick, M.S., Linder, E., and Roberts, J. S., "Photoluminescence in GaAs/AlGAs Microcavities," **Journal of Luminescence**, Vol.72, pp. 386-388, 1997.
89. Opher-Lipson, M., Cohen, E., and Pfeiffer, L.N. "Spectral Line Splitting due to Exciton-photon Interaction in GaAs/AlAs Multiple Quantum Wells," **Physical Review B**, Vol. 55, pp. 13778-13782, 1997.

## **Books**

### Textbooks and Monographs

1. Pollock, C., and Lipson, M., "Integrated Photonics," Kluwer Academic Publishers, Boston, MA, Nov. 2003, ISBN 1402076355.

### Edited Volumes

2. Lipson, M., Barbastathis, G., Dutta, A.K., and Asakawa, K., Editor(s), "Nanophotonics for Communication: Materials and Devices, Proceedings of SPIE Vol 5597," Oct. 2004.
3. Gregorkiewickz, T., Fujiwara, Y., Lipson, M., and Zavada, J. Editor(s), "Rare earth doping for optoelectronic applications, MRS Symposium Proceedings," Vol. 866 Spring 2005.

## **Papers published in conference proceedings**

1. Lira, H., Manipatruni, S., and Lipson M., "Broadband Hitless Silicon Electro-optic Switcho for Optical Networks on Chip," (Group IV Photonics), September 9, 2009
2. Turner-Foster, A, Foster, M., Levy, J, Poitras, C, Salem, R, Gaeta, A and Lipson, M "Ultrashort Free Carrier Lifetime for Low Nonlinear Loss in Sili Waveguides" in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009
3. Turner-Foster, A, Foster, M., Levy, J, Poitras, C, Salem, R, Gaeta, A and Lipson, M, "Frequency Conversions in Silicon Waveguides over Two-thirds of an Octave" in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009
4. Onur Kuzucu, Yoshitomo Okawachi, Salem, R., Foster, M., Gaeta, A., Turner-Foster, A., and Lipson, M., "Dispersion and Nonlinearity Compensation Using Spectral Phase Conjugation," in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009.
5. Foster, M., Salem, R., Okawachi, Y., Turner-Foster, A., Lipson, M., and Gaeta, A., "Packet Compression from a 10-Gb/s to 270-Gb/s Using a Temporal Telescopic System," in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009
6. Okawachi, Y., Salem, R., Foster, M., Turner-Foster, A., Lipson, M., and Gaeta, A., "100× Frequency Magnification Using a Time-Lens-Based Spectral Imaging System," in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009

7. Foster, M., Salem, R., Yoshitomo Okawachi, Turner-Foster, A., Lipson, M., and Gaeta, A., "Generation of 270 Gb/s NRZ Data Packets from a 10-Gb/s Signal Using a Temporal Telescopic System," in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009
8. Broaddus, D.H., Foster, M., Kuzucu, O., Turner-Foster, A., Lipson, M., and Gaeta, A., "Temporal Imaging System with Simple External Clock Synchronization," in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009
9. Salem, R., Foster, M., Turner-Foster, A., Geraghty, D., Lipson, M., and Gaeta, A., "Single-Shot Optical Sampling of Ultrafast Signals Using a Silicon-Chip Time Lens," in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009
10. Salem, R., Foster, M., David F. Geraghty, Gaeta, A., Amy C. Turner-Foster, and Lipson, M., "High-Speed Optical Signal Sampling via Temporal Magnification," in Optical Fiber Communication Conference, (OSA), San Diego, CA. March 22-26, 2009.
11. Salem, R., Foster, M., Yoshitomo, O., Gaeta, A., Turner-Foster, A., and Lipson M., "Ultrafast Optical Waveform Characterization and Generation Using a Four-Wave Mixing Time Lens on a Silicon Chip," in Integrated Photonics and Nanophotonics Research and Application (OSA), Honolulu, Hawaii. July 12-17, 2009
12. Lee, B., Biberman, A., Ophir, N., Turner-Foster, A., Lipson, M., Gaeta, A., and Bergman, K., "160-Gb/s Broadband Wavelength Conversion on Chip Using Dispersion-Engineered Silicon Waveguides," in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009
13. Biberman, A., Lee, B., Bergman, K., Turner-Foster, A., Lipson, M., and Gaeta, A., "First Demonstration of On-Chip Wavelength Multicasting." In Optical Fiber Communication Conference (OSA), San Diego, CA March 22-26, 2009
14. Levy, J., Gondarenko, A., Turner-Foster, A., Foster, M., Gaeta, A., and Lipson, M., "CMOS –Compatible Multiple Wavelength Source" (CLEO) Post Deadline June 5, 2009
15. Levy, J., Gondarenko, A., Turner-Foster, A., Foster, M., Gaeta, A., and Lipson, M., "Four-wave Mixing in Integrated Silicon Nitride Waveguides," (CLEO), June 5, 2009
16. Gabrielli, L., Cardenas, J., Poitras, C., and Lipson, M., "Demonstration of Cloaking at Optical Frequencies" in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009
17. Nitkowski, A., and Lipson, M., "On-Chip Single Particle Spectroscopy" (in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009
18. Nitkowski, A., and Lipson, M., "Integrated Coupling to Whispering Gallery Modes of Microspheres in a Microfluidic Platform," *Frontiers in Optics*, October 2009
19. Preston, K., Manipatruni, S., Poitras, C., and Lipson, M., "2.5 Gbps Electroc-Optic Modulator in Deposited Silicon," in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009
20. Cardenas, J., Poitras, C., rovinson, J., Preston, K., Chen, L., and Lipson, M., "Low Loss Etchless Silicon Photonic Waveguides," in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009

21. Kyotoku, B., and Lipson M., "Broad Band 1 nm Channel Spacing Silicon-on-Insulator Wavelength Division Multiplexer," in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009
22. Olaosebikan, D., Gondarenko, A., Preston, K., Lipson, M., Yerci, S., Li, R., and Dal Negro, L., "Pump-Probe Measurements in Silicon-Rich Nitride Waveguides and Resonators Doped with Erbium" in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2009
23. Preston, K., Manipatruni, S., Poitras, C., and Lipson, M., "GHz Micron-Scale Electro-Optics Modulator in Deposited Polysilicon," *Frontiers in Optics* Post deadline, October 2008
24. Preston, K., Robinson, J.T., Lipson, M., "Slot waveguide cavities for electrically-pumped silicon-based light sources" in Conference on Lasers and Electro-Optics/International Quantum Electronics Conference (OSA) May 21-June 5, 2008
25. Foster, M.A., Geraghty, D., Gaeta, A., Turner, A., Lipson, M., "Time lens for ultrafast signal measurements based on four-wave mixing in silicon" - Lasers and Electro-Optics, (CLEO) 2008
26. Nitkowski, A., Lipson, M., "On-chip spectroscopy using compact silicon microring resonators integrated with microfluidic ..." - Lasers and Electro-Optics, (CLEO) 2008.
27. Manipatruni, S., Xu, Q., and Lipson, M., "Ultra fast electro-optic tuning of optical quality factor" - Lasers and Electro-Optics, 2008. (CLEO) 2008.
28. Lee, B.G., Biberman, A., Foster, M.A., Turner, A. C., Lipson, M., Gaeta, A., and Keren Bergman, "Bit-Error-Rate Characterization of Silicon Four-Wave-Mixing Wavelength Converters at 10 and 40 Gb/s Conference on Lasers and Electro-Optics (CLEO), 2008
29. **Keynote** Lipson, M., K. Preston, Manipatruni, S., and Poitras, C., "Photonics on a Silicon Chip", 6<sup>th</sup> International Conference on Nanochannels, Microchannels, and Minichannels, Darmstadt, Germany, June 23-25, 2008.
30. Salem, R., Foster, M.A., David F. Geraghty, Gaeta, A., Turner, A. C., Lipson, M., "Time Lens for Ultrafast Measurements Based on Four-Wave Mixing in Silicon", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
31. Gondarenko, A., and Lipson, M. "Small Modal Volume Integrated Dielectric Resonator", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
32. Sherwood-Droz, N., Schmidt, M., Chen, L., Lipson, H., and Lipson, M., "On-Chip High-Order Frequency Filter with Fabrication Error Recovery", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
33. Okawachi, Y., Foster, M.A., Turner, A. C., Salem, R., Levy, J., Lipson, M., and Gaeta, A., "Tunable Delays via Conversion-Dispersion Using On-Chip Four-Wave-Mixing", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
34. Robinson, J.T., Chen, L., and Lipson, M., "On-Chip Gas Detection in Silicon Optical Microcavities", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
35. Foster, M.A., Salem, R., Geraghty, D., Turner, A. C., Lipson, M., and Gaeta, A., "Silicon-Chip-Based Single-Shot Ultrafast Optical Oscilloscope", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
36. Manipatruni, S., Poitras, C.B., Xu, C., and Lipson, M., "Ultra Fast Electro-Optic Tuning of Optical Quality Factor", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.

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37. Manipatruni, S., Dong, P., Xu, Q., and Lipson, M., "Tunable Superluminal Pulse Propagation on a Silicon Chip", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
38. Chen, L., Sherwood-Droz, N., and Lipson, M., "Compact Bandwidth Tunable Microring Resonators", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
39. Dong, P., Chen, L., Nitkowski, A., and Lipson, M., "Optical Pulse Compression of a Pulse Trapped in an Optical Microcavity", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
40. Chen, L., Dong, P., and Lipson, M., "Highly Efficient, Ultra Low Dark Current Germanium Photodetectors Integrated on Submicron Silicon Waveguides", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
41. Preston, K., Robinson, J.T., and Lipson, M., "Slot Waveguide Cavities for Electrically-Pumped Silicon-Based Light Sources", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
42. Turner, A. C., Foster, M.A., Gaeta, A., and Lipson, M., "Ultra-Low-Power Parametric Frequency Conversion of High Data Rates On-Chip", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
43. Schmidt, B., Manipatruni, S., Yang, A.H.J, Erickson, D., and Lipson, M. "Optical Trapping Platform Based on Highly Confining Silicon Waveguiding Structures with Microfluidics", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
44. Nitkowski, A., and Lipson, M., "On-Chip Spectroscopy Using Compact Silicon Microring Resonators Integrated with Microfluidic Channels", Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, May 5-9, 2008.
45. Lipson, M., "Ultrafast Low-Power Photonics on Silicon", SPIE Photonics West, San Jose, CA, January, 19-24, 2008, invited.
46. Lipson, M., "Ultrafast Silicon Photonic Devices", IEEE LEOS Winter Topicals, Sorrento, Italy, January 14-16, 2008.
47. Biberman, A., Dong, P., Lee, B., Foster, J., Lipson, M., and Bergman, K., "Silicon Microring Resonator-Based Broadband Comb Switch for Wavelength-Parallel Message Routing," Lasers and Electro-Optics Society, 2007. LEOS 2007. The 20th Annual Meeting of the IEEE, Volume, Issue, 21-25 Oct. 2007 Page(s):474 - 475.
48. Lipson, M., "Tutorial: Manipulating Light on a Silicon Chip", 33rd European Conference and Exhibition on Optical Communication, Berlin, Germany, September 16-20, 2007, invited.
49. Lipson, M., "Controlling Light with Light in Silicon Micro-resonators", IEEE Photonics in Switching, San Francisco, CA, September 19-22, 2007, invited talk.
50. Lipson, M., "Nonlinear Optics in High Confinement Silicon Nanostructures", Nonlinear Optics Topical Meeting, Kona, HI, July 30-Aug. 3, 2007, invited talk.
51. Foster, M.A., Salem, R., Geraghty, D., Turner, A. C., Lipson, M., and Gaeta, A., "Broad-Band Continuous-Wave Four-Wave Mixing in Silicon Wire Waveguides", Kona, HI, July 30-Aug. 3, 2007.
52. Poitras C.B., and Lipson, M., "Manipulating light on a silicon chip", Photonics North Conference, Ottawa, Canada, June 4-7, 2007, invited talk.

53. Manipatruni, S., Xu, Q., and Lipson, M., "Breaking the Tradeoff between Speed and Extinction Ratio in Silicon Electro-optic Modulators" Conference on Lasers and Electro-Optics (CLEO), Baltimore, MD, May 6-11, 2007.
54. Dong, P., Preble, S.F., and Lipson, M., "All Optical Ultrafast Broadband Silicon Switch," Conference on Lasers and Electro-Optics (CLEO), CTuDD2, Baltimore, MD, May 6-11 2007.
55. Dong, P., Preble, S.F., Robinson, J.T., Manipatruni, S. and Lipson, M., "Inducing Photonic Transitions between Discrete Modes in a Microcavity," Conference on Lasers and Electro-Optics (CLEO), CTuQ4, Baltimore, MD, May 6-11 2007.
56. Preston, K., Schmidt, B., Dong, P., and Lipson, M., "Polysilicon-on-Insulator Photonic Devices" at Conference on Lasers and Electro-Optics (CLEO), CTuG2, Baltimore, MD, May 6-11, 2007.
57. Chen, L., Robinson, J., and Lipson, M., "Role of Radiation and Surface Plasmon in Optical Interactions between Nano-Objects on Metal Surface," Conference on Lasers and Electro-Optics (CLEO) QThE6, Baltimore, MD, May 6-11, 2007.
58. Robinson, J.T., and Lipson, M. "Far-Field Control of the Radiative Lifetime of an Individual Optical Nanocavity," Conference on Lasers and Electro-Optics (CLEO), paper QWD5, Baltimore, MD, May 6-11, 2007.
59. Robinson, J.T., and Lipson, M. "Direct Measurement of Sub-100 Nanometer Light Confinement in Dielectric Photonic Structures," Conference on Lasers and Electro-Optics (CLEO) postdeadline, paper QPDA8, Baltimore, MD, May 6-11, 2007.
60. Turner, A. C. , M. A. Foster, Gaeta, A.L., and Lipson, M., "Ultra-low Power Frequency Conversion in Silicon Micro-ring Resonators," in Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference and Photonic Applications Systems Technologies, OSA Technical Digest Series (CD) (Optical Society of America, 2007), paper CPDA3, Baltimore, MD, May 6-11, 2007.
61. Salem, R., Foster, M.A, Turner, A.C., Geraghty, D.F., Lipson, M., and Gaeta, A. "Integrated Optical Regenerator on a Silicon Chip," in Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference and Photonic Applications Systems Technologies, OSA Technical Digest Series (CD) (Optical Society of America, 2007), paper CMHH2, Baltimore, MD, May 6-11, 2007.
62. Schmidt, B., Barrios, C.A., and Lipson, M., "Si<sub>3</sub>N<sub>4</sub>-SiO<sub>2</sub>-Si Slot-waveguide Disk Resonators in a Silicon Photonic Platform", presented at Materials Research Society Fall Meeting, Boston, MA, December, 2006.
63. Chen, L. and Lipson, M., "Origin of Shape Dependence in Nano-Aperture Transmission," paper TuL3, Lasers & Electro-Optics Society Annual Meeting (LEOS), Montreal, Canada, October 29-November 2, 2006.
64. Jacob T. Robinson, Preble, S., and Lipson, M. "Imaging Sub-Micron Scale Light Confinement in Silicon Waveguides with Apertureless Transmission-based Near-Field Scanning Optical Microscopy," 2006 IEEE Lasers and Electro-Optics Society Annual Meeting (LEOS), WDD2, Montreal, Canada, October 29-November 2, 2006.
65. Schmidt, B., Xu, Q., Shakya, J., and Lipson, M., "Compact electro-optic modulator on Silicon-on-insulator substrates using cavities with ultra-small modal volumes" to be presented at 3rd International Conference on Group IV Photonics, Ottawa, ON, Canada, September 2006.

66. Poitras, C. and Lipson, M., "Nanophotonics on-Chip", 2006 IEEE/LEOS International Conference on Optical MEMS and Their Applications (MOEMS), Big Sky, Montana, August 21-24, 2006, invited talk.
67. Chen, L., J. Shakya and Lipson, M., "Metal Slot Waveguide with Silicon for Deep Subwavelength Confinement and On-Chip Integration," Conference on Lasers and Electro-Optics (CLEO), paper QMF3, Long Beach, CA, May 21-26, 2006.
68. A. C. Turner, Manolatou, C., B. S. Schmidt, Lipson, M., M. A. Foster, Y. Okawachi, and A. L. Gaeta, "Tailored Anomalous Group-Velocity Dispersion in Silicon Waveguides," in Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference and Photonic Applications Systems Technologies, Technical Digest (CD) (Optical Society of America, 2006), paper CTuU4, Long Beach, CA, May 21-26, 2006.
69. Foster, M.A., Turner, A. C., Sharping, J. E, Schmidt, B. S., Lipson, M., and Gaeta, A. L., "Broad-Bandwidth Optical Amplification and Efficient Wavelength Conversion in Silicon Waveguides," in Integrated Photonics Research and Applications/Nanophotonics, Technical Digest (CD) (Optical Society of America, 2006), paper ITuH2, Uncasville, CT, April 24-28, 2006.
70. Foster, M.A., Turner, A. C., Sharping, J. E, Schmidt, B. S., Lipson, M., and Gaeta, A. L., "Broad-Bandwidth Optical Gain and Efficient Wavelength Conversion in Silicon Waveguides," Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS and PhAST) 2006, paper CMK4, Long Beach, CA, May 21-26, 2006.
71. Martinez, L. and Lipson, M., "Suspended Silicon-On-Insulator Ring Resonators," Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS and PhAST) 2006, paper CMK4, Long Beach, CA, May 21-26, 2006.
72. Barrios, C.A., and Lipson, M., "Silicon Photonic Nonvolatile Memory Device," 2005 Frontiers in Optics/Laser Science conferences, paper JWA63, Tucson, Arizona, USA, October 2005.
73. Lipson, M., "QTuH Spectroscopy of Single Quantum Dots," CLEO/QELS and PhAST 2005, Baltimore, MD, May 22-27, 2005. (Invited)
74. Xu, Q., Lipson, M., and Almeida, V.R., "Time-Resolved Measurement of Raman Amplification in Highly Confined Silicon-on-Insulator Waveguides," Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS and PhAST) 2005, paper CThB3, Baltimore, MD, May 2005.
75. Almeida, V.R., Xu, Q., and Lipson, M., "Temperature-Insensitive Ultrafast Optical Integrated Semiconductor Switch Based on Plasma-Dispersion Effect," Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS and PhAST) 2005, paper CThD6, Baltimore, MD, May 2005.
76. Preble, S., Almeida, V.R., and Lipson, M., "All-optical Control of Light using Silicon Nanophotonic Devices," Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS and PhAST) 2005, paper CMG7, Baltimore, MD, May 2005.
77. Pradhan, S., Schmidt, B., Martinez, L., Xu, Q., Almeida, V. R., Barrios, C., and Lipson, M., "Electro-Optic Modulator on Silicon-on-Insulator Substrates Using Ring Resonators," Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS and PhAST) 2005, paper CMG2, Baltimore, MD, May 2005.

78. Jacob T. Robinson, Lipson, M., and Lipson, H., "Strong Light Confinement in Novel Compact Pseudo-Random Structures Designed via Evolutionary Algorithms," Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS and PhAST) 2005, paper JTuC63, Baltimore, MD, May 2005.
79. Stefan Preble, Lipson, H., and Lipson, M., "Using Evolutionary Algorithms for Designing Photonic Crystals, Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS and PhAST) 2005, paper CWN6, Baltimore, MD, May 2005.
80. Poitras, C., Lipson, M., Huaqiang Wu, and Michael G. Spencer, "Luminescence and lifetime properties of europium doped gallium nitride compatible with CMOS technology," 2005 Material Research Society Spring Meeting, San Francisco, CA, March 2005.
81. Lipson, M., "High-Confinement Nanophotonic Structures on Chip," Proceedings International Society for Optical Engineering (SPIE), Vol. 5729, p. 104-109, Optoelectronic Integrated Circuits VII; Louay A. Eldada, El-Hang Lee; Eds., January 2005. (Invited)
82. Lipson, M., "Manipulating Light on a Silicon Chip" Source: 2004 Institute of Electrical and Electronics Engineers Lasers and Electro-Optics Society (IEEE/LEOS) Annual Meeting Conference Proceedings (IEEE Cat. No.04CH37581) Vol.2, pp. 853-4, November 2004.
83. Barrios, C.A, Thomas, C.I.; Spencer, M., and Lipson, M., "3C-SiC Modulator for High-speed Integrated Photonics," Source: Progress in Compound Semiconductor Materials III - Electronic and Optoelectronic Applications Symposium, p 223-7, November 2004.
84. Preble, S.F., Lipson, H., and Lipson, M., "Novel two-dimensional photonic crystals designed by an evolutionary algorithm," International Society for Optical Engineering (SPIE) Optics East, Proceedings of SPIE, Vol. 5597, pp. 5597-16, Philadelphia, PA, October 2004.
85. Turner, A. C. , Almeida, V.R., and Lipson, M., "High-confinement photonic structures for light propagation in the visible range," SPIE Optics East, Proceedings International Society for Optical Engineering (SPIE), Vol. 5597, p. 146-150, Philadelphia, PA, October 2004.
86. Lipson, M., "Controlling Light on a Microelectronics' Chip: Solving the Coupling, Modulation and Switching Challenges," Source: 2004 1st IEEE International Conference on Group IV Photonics (IEEE Cat. No.04EX849), p 16-18, September 2004.
87. Preble, S.F., Almeida, V.R., and Lipson, M., "Optically Controlled Phontonic Crystal Nanocavity in Silicon," SPIE Annual Meeting 2004, Proceedings of International Society for Optical Engineering (SPIE), Vol. 5511, paper 5511-02, pg.10-17, Denver, CO, Aug. 2004.
88. Almeida, V.R. and Lipson, M., "Optical Bistability on Silicon Nanophotonics," in Proceedings of the Integrated Photonics Research Conference (IPR 2004), San Francisco, CA, June 2004.
89. Pradhan, S., Almeida, V.R., Barrios, C., and Lipson, M., "Tunable Electro-Optic Modulator in Silicon-on-Insulator Substrates Using Ring Resonators," in Proceedings of the Integrated Photonics Research Conference (IPR 2004), IWAS, June 2004.
90. Schmidt, B., V. Almeida, Manolatou, C. , S. Preble, and Lipson, M., "1-D Photonic Crystal Waveguide Micro-Cavity for Ultra Sensitive Nano-Particle Detection," in Proceedings of the Conference on Lasers and Electro-Optics, Vol. 1, 16-21, pg.505-506, San Francisco, CA, May 2004.
91. Q. Xu, Almeida, V.R., C.A. Barrios, R.R Panepucci, and Lipson, M., "Silicon Void Nano-Waveguides for Guiding and Confining Light," in Proceedings of the Conference on Lasers and Electro-Optics, San Francisco, CA, May 2004.

92. Almeida, V.R., C.A. Barrios, R.R. Panepucci and Lipson, M., "All-Optical Switch on a Silicon Chip," in Proceedings of the Conference on Lasers and Electro-Optics, San Francisco, CA, May 2004.
93. C.A. Barrios, Almeida, V.R., R.R. Panepucci, B.S. Schmidt, and Lipson, M., "Tunable silicon Fabry-Perot microcavity," in Proceedings of the Conference on Lasers and Electro-Optics San Francisco, CA, May 2004.
94. Xu, Q., Almeida, V.R., Michal . Lipson, "Light amplification on silicon using highly confined photonic structures," Proceedings International Society for Optical Engineering (SPIE), Vol. 5597, p. 13-19, Nanophotonics for Communication: Materials and Devices; Michal F. Lipson, George Barbastathis, Achyut K. Dutta, Kiyoshi Asakawa; Eds., February 2004.
95. Lipson, M., "Switching and modulating light on silicon Publication" Proceedings International Society for Optical Engineering (SPIE), Vol. 5730, p. 102-113, Optoelectronic Integration on Silicon II; Joel A. Kubby, Ghassan E. Jabbour; Eds., January 2004. (Invited)
96. Poitras, C., Lipson, M., Hahn, M., Du, H., and T. Krauss "Enhanced Spontaneous Emission from Colloidal Quantum Dots Embedded in a Monolithic Microcavity," Quantum Electronics and Laser Science (QELS). Postconference Digest (IEEE Cat No.CH37420-TBR), p 3, 2003.
97. Poitras, C., Lipson, M., Hahn, M., Du, H., and Krauss, T., "Enhanced Spontaneous Emission from Colloidal Quantum Dots Embedded in a Monolithic Microcavity," Material Research Society, Boston, MA, Dec. 2003.
98. Schmidt, B., Almeida, V., and Lipson, M., "Silicon micro-photonic Structure for Ultra-sensitive Biosensing," Material Research Society 2003 Fall Meeting Proceedings, Symposium W, Vol. 797 Engineered Porosity for Microphotonics and Plasmonics, Editors: Ralf Wehrspohn, Francisco Garcial-Vidal, Masaya Notomi, Axel Scherer, Boston, MA, Dec. 2003.
99. Almeida, V., Xu, Q., Panepucci, R. R., Barrios, C., and Lipson, M., "Light Guiding in Low Index Materials using High-Index-Contrast Waveguides," Material Research Society 2003 Fall Meeting Proceedings, Symposium W, Vol. 797 Engineered Porosity for Microphotonics and Plasmonics, Editors: Ralf Wehrspohn, Francisco Garcial-Vidal, Masaya Notomi, Axel Scherer, Boston, MA, Dec. 2003.
100. Barrios, C., Thomas, C., Spencer, M., and Lipson, M., "3C-SiC for high-speed integrated photonics," Material Research Society 2003 Fall Meeting Proceedings, Symposium W, Vol. 797 Engineered Porosity for Microphotonics and Plasmonics, Editors: Ralf Wehrspohn, Francisco Garcial-Vidal, Masaya Notomi, Axel Scherer, Boston, MA, Dec. 2003.
101. Barrios, C. A., Almeida, V. R., Panepucci, R. R., Schmidt, B., and Lipson, M., "Low Power Compact Silicon Electro-optic Modulator," Integrated Photonics Research (IPR) Conference, IMD5-1, pp. 49-51, Washington, DC 2003.
102. Almeida, V.R., Panepucci, R.R. and Lipson, M., "Compact mode conversion for highly-confined waveguides," Integrated Photonics Research (IPR) Conference, , paper IMD5-1, pp. 230-233, Washington, DC 2003.
103. Poitras, C. B., Lipson, M., Hahn, M. A., Du, H., and Krauss, T.D. "Enhanced Spontaneous Emission from Colloidal Quantum Dots Embedded in a Monolithic Microcavity," papers presented at Conference on Lasers and Electro-Optics, Opt. Soc. America, Baltimore, MD, May 2003.

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104. Almeida, V. R., Panepucci, R., and Lipson, M., "Nano-taper Mode-size Converter," papers presented at Conference on Lasers and Electro-Optics, Opt. Soc. America, Baltimore, MD, May 2003.
105. Almeida, V. R., and Lipson, M., "Lossless high-index contrast Distributed Bragg Reflector," papers presented at Conference on Lasers and Electro-Optics, Opt. Soc. America, vol.1, p. 199, Long Beach, CA, May 2002.
106. Chen, K. M., Saini, S., Lipson, M., Duan, X., and Kimerling, L.C. , "Growth, Crystallization, and Room Temperature Photoluminescence of Er<sub>2</sub>O<sub>3</sub> thin films," Proc. SPIE, Vol. 4282, p. 168-173, Rare-Earth-Doped Materials and Devices V, Shibin Jiang, Ed., Adelaide, Australia, Dec. 2001.
107. Lipson, M., Chen, K., Saini, S., and Kimerling, L.C. , "CMOS Compatible Micro-emitters," Material Research Society Spring Meeting, Volume 637, San Francisco, CA, April 2000.
108. Opher-Lipson, M., Cohen, E., Armitrage, A., Skolnick, M. S., Fischer, T.A, and Roberts, J.S., "Confined excitons, Landau transitions and cavity mode coupling in GaAs microcavities," Optics of Excitons in Confined Systems, Goettingen, Germany, August 1997.
109. Opher-Lipson, M., E. Cohen and L. N. Pfeiffer, "Spectral Line Splitting due to Exciton-photon Interaction in GaAs/AlAs Multiple Quantum Wells," International Conference of Photoluminescence, Prague, Czech Republic, August 1996.
110. Opher-Lipson, M., Cohen, E., Fischer, T.A, Skolnick, M. S., Linder, E., and Roberts, J.S., "Photoluminescence and Resonant Raman Scattering Enhancement in GaAs/AlGaAs Microcavities," Semiconductors Heteroepitaxy, Growth, Characterization and Device Applications, edited by B. Gil and Roger-Louis Culombord, p. 413, Singapore (1995), proc. of International Conference of Semiconductor Heterostructures, Montpellier, France, June 1995.

## **Invited lectures**

### *Conferences*

1. **Plenary Talk**, 3rd International Conference on Nanoscience and Nanotechnology, Sydney, Australia, February 22-26, 2010.
2. IMOC 2009, SBMO/IEEE MT-S International Microwave and Optoelectronics Conference, Para Brazil, November 3-6, 2009
3. QuantumComm 2009, International Conference on Quantum Communication and Quantum Networking, Sorrento Naples, Italy, October 26-30, 2009.
4. Universidade Federal de Pernambuco - 4th Symposium on Lasers and Applications, Recife, Brazil, August, 6, 2009
5. 2009 Frontiers in Nanoscale Science and Technology Workshop, Harvard University, May 29, 2009.
6. 2009 IEEE/LEOS Winter Topical Meeting, Innsbruck, Austria, January 12-14, 2009.
7. Photonics 2008, New Delhi, India, December 13-17, 2008.
8. LEOS 2008 Annual Meeting, Newport Beach, CA, November 9-13, 2008.
9. Frontiers in Optics/Laser Science XXIV Annual Meeting, Rochester, NY, October 19-23, 2008.
10. International Union of Radio Science (URSI), Chicago, IL, August 9-16, 2008.
11. Photonics in Switching, Sapporo, Japan, August 4-7, 2008.
12. International Conference on Electronic Materials, Sydney, Australia, July 28-August 1, 2008.

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13. **Plenary Talk** Opto-Electronics and Communications Conference, Sydney, Australia, July 8-10, 2008.
14. **Keynote** 6<sup>th</sup> International Conference on Nanochannels, Microchannels and Minichannels, Darmstadt, Germany, June 23-25, 2008.
15. The Optical Fiber Communication Conference, "High Performance Photonics on Silicon", San Diego, CA, February 24-28, 2008.
16. Photonics West, "Ultrafast low-power photonics on silicon," San Jose, CA, January, 19-24, 2008.
17. Photonics West, "Breaking the delay-bandwidth limit in photonic structures," San Jose, CA, January, 19-24, 2008.
18. The Jorge Andre Swieca Summer School on Quantum and Nonlinear Optics, Sao Paulo, Brazil, February 11-22, 2008.
19. 2008 IEEE/LEOS Winter Topical Meeting, Sorrento, Italy, January 14-16, 2008.
20. 33rd European Conference and Exhibition on Optical Communication International Congress Center (ICC), "Manipulating Light on a Silicon Chip" Tutorial, Berlin, Germany, September 16 - 20, 2007.
21. Non Linear Optics Topical Meeting, "Nonlinear Optics in High Confinement Silicon Nanostructures", Kona, HI, July 31-August 3, 2007.
22. 4<sup>th</sup> CRI Workshop – The Physics of Microresonators, Charlotte, NC, June 6-7, 2007.
23. European Conference on Integrated Optics 2007, Copenhagen, Denmark, April 25-27, 2007.
24. Material Research Society (MRS) Spring Meeting, San Francisco, CA, April 9-13, 2007.
25. Optical Fiber Communication Conference & Exposition and the National Fiber Optic Engineers Conference, Anaheim, CA, March 25-29, 2007.
26. Photonics 2006 Biennial Conference, Hyderabad, India, December 13-December 16, 2006.
27. Fall 2006 Materials Research Society Meeting (MRS), Boston, MA, November 27-December 1, 2006.
28. Lasers and Electro-Optics Society (LEOS) Annual 2006, "Slowing Light and Changing Its Color on a Silicon Chip," Montreal, Quebec, Canada, October 29-November 2, 2006.
29. Third International Conference on Group IV Photonics, Ottawa, Canada, September 13-15, 2006.
30. Optical Micro-Electro-Mechanical Systems (MEMS) 2006, "High Confinement Micro-Ring Resonators in Silicon-on-Insulator," Big Sky, MT, August 21-24, 2006.
31. Slow and Fast Light Topical Meeting, "Tunable Optical Delay on Silicon Chip with a Double-Ring Resonator," Washington, DC, July 23-26, 2006.
32. Slow and Fast Light Topical Meeting, "Raman Slow Light in Fibers and on Chip," Washington, DC, July 23-26, 2006.
33. European Material Research Society (E-MRS), "A Silicon Electro-optic Modulator," Nice, France, May 29-June 2, 2006.
34. European Material Research Society (E-MRS), "High Confinement Silicon Nanophotonic Devices for On-chip Sensing" Nice, France, May 29-June 2, 2006.
35. Conference on Lasers and Electro-Optics (CLEO), "High confinement Photonic Structures," Long Beach, CA, May 21-26, 2006.
36. 2006 High Speed Interconnect Conference, "Manipulating light on a silicon chip," Santa Fe, NM, May 14-17, 2006.
37. Integrated Photonics Research and Applications Topical Meeting (IPRA) 2006, "Manipulating Light on Chip," Uncasville, CT, April 24-28, 2006.

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38. Center for Electronic Imaging Systems (CEIS) University Technology Showcase, "Manipulating Light on Chip," Rochester, NY, February 8, 2006.
39. International Society of Electrical Engineers Photonics West, "On-chip Nanophotonics," San Jose, CA, January 21-26, 2006.
40. IEEE Lasers and Electro-Optics Society (LEOS) 2005 Annual Meeting, Interconnect symposia, "Silicon Photonics for Optical Interconnects," Sidney, Australia, October 23-27, 2005.
41. 2005 Frontiers in Optics/Laser Science XXI, "High Confinement Nanophotonic Structures for Functional On-Chip Devices," Tucson, AZ, October 16-20, 2005.
42. European Conference on Optical Communication (ECOC) 2005, "All-optical and Electro-optical Control of Light on a Silicon Chip," Glasgow, Scotland, September 25-29, 2005.
43. IEEE Lasers and Electro-Optics Society (LEOS) Group IV Photonics International Conference, "Using Nanophotonic Structure for Enabling Active Devices on the Chip," Antwerp, Belgium, September 21-23, 2005.
44. Conference on Lasers and Electro-Optics (CLEO) Pacific Rim, "Modulating Light on Si Chip," Tokyo, Japan, July 11-15, 2005.
45. Information Photonics Optical Society of America (OSA) Topical Meeting, "Modulating and Switching Light on a Silicon Chip," NC June 6-8, 2005.
46. Integrated Photonics Research and Applications OSA topical meeting (IPRA), "Controlling Light with Light in On-Chip Nanophotonic Structures," San Diego, CA, April 13-15, 2005.
47. Nanophotonics for Information Systems OSA Topical Meeting, San Diego, CA, April 13-15, 2005.
48. Marco (SRC/Darpa) Interconnect Workshop, MIT, March 2005.
49. IEEE Conference on Nanoscale Devices and System Integration, Arizona, "Controlling Light with Light on a Microelectronics' Chip" Feb. 15-19, 2005.
50. 35th Winter Colloquium on the Physics of Quantum Electronics, "Manipulating Light Using Highly Confining Nanophotonic Structures," Snowbird, Utah, January 2-6, 2005.
51. Photonics West, Optoelectronic Integrated Circuits VIII, "High Confinement Nanophotonic Structures," San Jose, January 22-27, 2005.
52. Photonics West, Optoelectronic Integration on Silicon II, "High Confinement Nanophotonic Structures," San Jose, California, January 22-27, 2005.
53. Optoelectronic Industry Association (OIDA), "High Confinement Nanophotonic Structures," Washington, DC, November 18-19, 2004.
54. IEEE Lasers and Electro-Optics Society (LEOS) 2004 Annual Meeting, "High Confinement Nanophotonic Structures," Puerto Rico November 7-11, 2004.
55. US-Japan Workshop on Nanophotonics, Tokyo, Japan, October 24, 2004.
56. IEEE International Conference on Group IV Photonics, "High Confinement Nanophotonic Structures," Hong Kong, September 29- October 4, 2004.
57. Integrated Photonic Research Conference (IRPA), OSA topical meeting, "All-Optical Manipulation of Light on a Silicon Chip" San Francisco, CA, June 2004.
58. European Material Research Society (E-MRS) Spring meeting, "Manipulating Light on a Silicon Chip" Strasbourg, France, May 24-28, 2004.
59. IEEE Conference on Nanoscale Devices and System Integration, "Controlling Light with Light on a Microelectronics' Chip," Miami, FL, February 15-19, 2004.
60. American Association for the Advancement of Science, Seattle, WA, February 12-16, 2004.

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61. International Society of Optical Engineering (SPIE) Photonics West, Micromachining Technology for Micro-optics & Nano-optics II, San Jose, California, January 18-22, 2004.
62. US-Japan Young Nano Scientists Exchange, Tokyo, Japan, November 2003.
63. US-Japan International Symposium on Nanofabrication, Cornell, January 2003.
64. European Material Research Society Spring meeting, Strasbourg, France, June 2001.
65. EXPO'2000 Shaping the Future, Hannover, Germany, August 2000.

Invited Seminars

66. Universidade Federal de Pernambuco, Recife, Brazil "Silicon Photonics: The Optical Spice Rack", August 3-7, 2009.
67. Columbia University, "Silicon Photonics: The Optical Spice Rack", April 20-21, 2009.
68. Interconnect Focus Center, "Manipulating Light on Silicon Chip", March 13, 2008.
69. Corning, Inc. "Manipulating Light on Silicon Chip", March 13, 2008.
70. PhotonIc, "On-Chip Photonics", January 24, 2008.
71. University of Rochester, December 3, 2007.
72. University of Colorado at Boulder, "On-Chip Photonics," October 8, 2007.
73. University of Delaware, "On-Chip Photonics," May 16, 2007.
74. University of California, San Diego, "Stopping Light on-Chip", February 22, 2007.
75. Princeton, "On-Chip Photonics," December 6, 2006.
76. University of Sao Paulo, "Stopping light on-chip", August 11, 2006
77. Georgia Tech, "Manipulating Light on Chip," September 21, 2006.
78. MIT, Microphotonics Center Industry Consortium Spring Meeting, "Manipulating Light on Chip," May 18, 2006.
79. Harvard, "Manipulating Light on Chip," April 10, 2006.
80. Samsung Advanced Institute of Technology, Special Seminar Series, "Manipulating Light on Chip," February 20, 2006.
81. RPI, "Manipulating Light on Chip," Physics Colloquium, September 14, 2005.
82. IBM, T.J. Watson, "High Confinement Nanophotonic Structures," June 17, 2005.
83. Berkeley University, "High Confinement Nanophotonic Structures," May 13, 2005.
84. UCLA, "Manipulating Light on a Chip Using Nanophotonic Structures," March 15, 2005.
85. Stanford University, "High Confinement Nanophotonic Structures," March 5, 2005.
86. National Research Council, Ontario, Canada, "Active and Passive Photonic Devices On-Chip," March 2004.
87. Columbia University, "High Confinement Nanophotonic Structures," January 20, 2004.
88. Penn State, ECE MRSEC seminar series, "Active and passive photonic devices on-chip," October 2003.
89. University of Campinas, Brasil, "Active and passive photonic devices on-chip" July, 2003.
90. UCSD ECE colloquium, "Manipulating light on Chip," April 2003.
91. RPI, Material Science and Engineering colloquium, February 2003.
92. SUNY Buffalo, ECE seminar series, "Manipulating light on Chip," February 2003.
93. IEEE/LEOS Boston Chapter, November 2002.
94. Univ. of Toronto, IEEE Distinguished Lecturer Series, "Manipulating light on Chip," June 2002.
95. Materials Research Institute Lawrence Livermore National Laboratory, October 2001.
96. Cornell, ECE, "High Confinement Photonics on Chip," April. 2001.
97. MIT, ECE, "High Confinement Photonics on Chip" March 2001.
98. Rice university, ECE, "High confinement photonics on chip," March 2001.

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99. Boston University, ECE, "High Confinement Photonics on Chip," February 2001.
100. Princeton, ECE, "High Confinement Photonics on Chip," February 2001.
101. Northwestern, ECE, "High Confinement Photonics on Chip" February 2001.
102. UIUC, ECE, "High Confinement Photonics on Chip," January 2001.

Invited Courses

102. University of Campinas, "Photonics," Six week course, July-August 2007.

**Professional Society Memberships:**

- IEEE Senior Member
- Optical Society of America, Fellow

**University Activities**

- Women in ECE, Advisor 2005-2009
- Freshman Advising 2009-2010
- Member, Cornell University Electrical and Computer Engineering General Recruiting Committee 2009-2012
- Member, Cornell Center for Nanoscale Systems Executive Committee (2007-present)
- Member, Cornell Center for Nanoscale Systems Director Search Committee (2005-06)
- Member, Cornell Center for Nanoscale Systems Executive Committee (2006-present)
- Member, Cornell ECE Graduate Admission Committee. (2003-2005)
- Member, Applied and Engineering Physics Graduate Committee

**Student Supervision** (*I am chair of graduate committee or sole supervisor for all students except those listed under "Minor advisor"*)

Ph.D.

Current:

1. Manipatruni, S., PhD, "High Speed Electro-Optic Silicon Modulators," (tentative title) Electrical and Computer Engineering, Expected Graduation: August 2009.
2. Preston, K., PhD, Electrical and Computer Engineering, Expected Graduation: August 2010.
3. Nitkowski, A., PhD, Applied and Engineering Physics, Expected Graduation: August 2010.
4. Nicolas Sherwood, PhD, Electrical and Computer Engineering, Expected Graduation: August 2010.
5. Jacob Levy, PhD, Electrical and Computer Engineering, Expected Graduation: August 2011.
6. Hugo Lira, PhD, Electrical and Computer Engineering, Expected Graduation: August 2011.
7. Gbadebowale Olaosebikan, PhD, Physics, Expected Graduation, August 2011.
8. Lian-Wee Luo, PhD, Electrical and Computer Engineering, Expected Graduation: August 2011.
9. Lucas Gabrielli, PhD, Electrical and Computer Engineering, Expected Graduation: May 2012.

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10. Biswajeet Ghuha, PhD, Electrical and Computer Engineering, Expected Graduation: May 2014
11. Stueti Gupta, PhD, Electrical and Computer Engineering, Expected Graduation: May 2014
12. Taige Hu, PhD, Electrical and Computer Engineering, Expected Graduation: May 2014

Previous

13. Vilson Almeida, PhD, Electrical and Computer Engineering, “Active and passive Si photonic devices,” Graduated July 2004.
14. Carl Poitras, PhD, Electrical and Computer Engineering, “Active Components for Nanophotonics: Colloidal Quantum Dots as Light Emitters,” Graduated July 2006.
15. Stefan Preble, PhD, Electrical and Computer Engineering, “Photonic Crystals,” Graduated May 2007.
16. Xu, Q., PhD, Electrical and Computer Engineering, “Integrated Waveguides and Devices on Silicon,” Graduated May 2007.
17. Brad Schmidt, PhD, Electrical and Computer Engineering, “High Refractive-Index-Contrast Silicon Photonics for Life Science Applications: Sensing, Sorting, and Trapping,” Graduated December 2007.
18. Jacob Robinson, PhD, Applied and Engineering Physics, “Photonic Structures with Ultra-Small Modal Volume (tentative title),” Graduated: August 2008.
19. Turner, A., PhD, Electrical and Computer Engineering, “Nanophotonic Devices in Visible Wavelengths,” Graduated: December 2008
20. Long Chen, PhD, “High Optical Confinement On-Chip for Device Applications,” (tentative title) Electrical and Computer Engineering, Graduated: December 2008.
21. Alexander Gondarenko, PhD, “Design of Photonic Structures Using Evolutionary Algorithms,” (tentative title) Applied and Engineering Physics, Graduated: August 2009.

Postdoctoral Supervision

Current

1. Gustavo Wiederhecker, University of Campinas, Brazil, (2008-present)
2. Jaime Cardenas, University of Alabama, Huntsville, (2007-present)
3. Danilo Spadoti, University of Campinas, Brazil (2008-present)
4. Turner, A. Foster, Cornell University, (2008-present)
5. Michael Menard, Canada, (2009-present)

Previous

6. Carl Poitras, Cornell University, (2006-2007)
7. Po Dong, McGill University, (2005-2007)
8. Christina Manolatos, MIT, (2003-2007)
9. Jagat Shakya, Kansas State University (2004-05 )
10. Carlos Angulo Barrios, KTH (2002-04)
11. Panepucci, R.R., UIUC (2002-04)
12. Sameer Pradhan, University of Michigan Ann Arbor (2003-04)

Master of Science

Previous

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1. Linnell Martinez, MSc, "High Confinement Suspended Micro-Ring Resonators in Silicon-On-Insulator," Electrical and Computer Engineering, Graduated July 2006.

Master of Engineering

Current

1. Sunwoo Lee, Expected Graduation, May 2010

Previous

2. You Zhang, Graduated December 2008.
3. Stephen Emellet, Graduated August 2006.
4. Yue Shi, "Power Transmission Optimization in Nanotaper to Fiber Coupling," Graduated August 2006.
5. Morgan Winer, "Nanotaper Simulations," Graduated May 2006. Richard Brown, "Fabrication of Low Loss Silicon Structures," Graduated May 2004.
6. Robert John Meyers (2004), "Self-assemble waveguides," Graduated July 2004.
7. Michael Karpelson, "Waveguide Fabrication by Teflon Stamping," Graduated May 2004.
8. Chris Petersen, MEng, "Fabricating Photonic Circuits Using Embossed Polymers," Graduated May 2004.
9. Jonathan Sterk, "Simulations and Measurements of Gratings," Graduated May 2004.
10. Heather Chapman, MEng, "controlling Lifetime of Carriers in Silicon," Graduated December 2004.
11. Tameem Albash, "White Light Interferometer and DBR Band-edge Measurements, Graduated December 2003.
12. Praveen Anumolu, "Numerical Simulations of Modulated Media," Graduated December 2002.

Minor Advisor

Previous

1. Yi-Fan Chen, PhD, Applied and Engineering Physics
2. Xuchun Liu, PhD, Electrical and Computer Engineering
3. Joel Buckley, PhD, Applied and Engineering Physics
4. Lioubov Kouznetsova, Applied and Engineering Physics
5. Chong, Chin Yu, PhD, Applied and Engineering Physics
6. Okawachi, Yoshi, PhD, Applied and Engineering Physics

**Teaching**

FA09	Lasers (ECE 4300)
SP09	Fibers and Integrated Optics (ECE 437), enrollment 39
FA07	Lasers (ECE 430), enrollment 18
SP07	Fibers and Integrated Optics (ECE 437), enrollment 17
FA06	Lasers (ECE 430), enrollment 30
SP06	Fibers and Integrated Optics (ECE 437), enrollment 20
FA05	Lasers (ECE 430), enrollment 31
SP05	Fibers and Integrated Optics (ECE 437), enrollment 27
SP04	Fibers and Integrated Optics (ECE 437), enrollment 30
FA03	Microphotonics (ECE 630), enrollment 17
SP03	Fibers and Integrated Optics (ECE 437), enrollment 29
FA02	Microphotonics (ECE 630), graduate course, enrollment 21

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SP02     Fibers and Integrated Optics (ECE 530), enrollment 23  
FA01     Microphotonics (ECE 696), enrollment 20