

## Georgios Veronis

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### Education

Ph.D.	Electrical Engineering	Stanford University, Stanford, California	2002
M.S.	Electrical Engineering	Stanford University, Stanford, California	1999
Diploma	Elec. and Comp. Eng.	Nat. Technical University of Athens, Greece	1997

### Research Interests

Theory and simulation of photonic materials, nanoscale photonic devices, plasmonics, computational electromagnetics.

### Professional Experience

- Associate Professor, Division of Electrical & Computer Engineering, School of Electrical Engineering & Computer Science and Center for Computation & Technology (CCT), Louisiana State University, January 2014 – present.
- Assistant Professor, Division of Electrical & Computer Engineering, School of Electrical Engineering & Computer Science and Center for Computation & Technology (CCT), Louisiana State University, January 2008 – December 2013.
- Engineering Research Associate, Stanford University, June 2003 – December 2007.
- Postdoctoral Fellow, Stanford University, September 2002 – May 2003.
- Research Assistant, Stanford University, 1997 – 2002.
- Teaching Assistant, Stanford University, April 2000 – June 2000 and September 2000 – December 2000.

### Honors and Awards

- Rubicon Professorship of Engineering, College of Engineering, Louisiana State University, 1/2014-present.
- National Science Foundation Career Award, 2013.
- Charles P. Siess, Jr. Professorship for career development, College of Engineering, Louisiana State University, 1/2012-12/2014.
- Silver medal awarded by the Dean of National Technical University of Athens for ranking 2<sup>nd</sup> in class, 1997.
- Technical Chamber of Greece Award, 1995, 1996, 1997.
- Greek State Scholarships Foundation (I.K.Y.) Award, 1993, 1994, 1995, 1996.
- N. Kritikos Award: Awarded for excellence in all undergraduate mathematics courses, 1993.

### Grants and Contracts

1. T. Monroe, D. Hayes, L. Haber, R. Lipton, G. Veronis, *Integrated FRG: Nanoplasmonic Materials for Gene and Drug Delivery*, Faculty Research Grant, Louisiana State University, \$30,000. 7/2014-6/2015 (Role: Co-PI)

2. G. Veronis, *Design of nanophotonic structures for thermophotovoltaics*, Pilot Funding for New Research (Pfund) program, NSF EPSCoR, Louisiana Board of Regents, \$10,000. 1/2014-12/2014 (Role: PI)
3. G. Veronis, *Enhancing the efficiency of solar cells with metallic nanostructures*, Economic Development Assistantships, Louisiana State University, \$100,000. 1/2014-12/2018 (Role: PI)
4. G. Veronis, *CAREER: Physics-based modeling techniques to enable high-performance nanoplasmonic devices*, NSF CAREER program, \$400,000. 4/2013-3/2018 (Role: PI)
5. G. Veronis, *Analysis of the effect of fabrication-related disorders and yield optimization of nanoplasmonic devices*, Research Initiation Grant, Southeastern Center for Electrical Engineering Education, \$19,000. 7/2012-6/2013 (Role: PI)
6. G. Veronis, *Enhancing the efficiency of photovoltaic solar cells through coupling to slow light modes*, Fund for Innovation in Engineering Research, College of Engineering, Louisiana State University, \$33,333. 4/2012-3/2013 (Role: PI)
7. G. Veronis, *Slow-light enhanced nanoscale plasmonic devices*, Pilot Funding for New Research (Pfund) program, NSF EPSCoR, Louisiana Board of Regents, \$10,000. 3/2012-2/2013 (Role: PI)
8. G. Veronis, *Plasmonic devices for controlling light at the nanoscale*, NSF Electronics, Photonics, and Magnetic Devices (EPMD), \$240,000. 6/2011-5/2014 (Role: PI)
9. G. Veronis, *Efficiency enhancement in thin-film photovoltaic solar cells using metallic nanowires*, Faculty Research Grant, Louisiana State University, \$10,000. 7/2010-6/2011 (Role: PI)
10. G. Veronis, *Slow-light subwavelength periodic plasmonic waveguides*, Pilot Funding for New Research (Pfund) program, NSF EPSCoR, Louisiana Board of Regents, \$10,000. 1/2010-9/2010 (Role: PI)
11. G. Veronis, *Nanoscale plasmonic devices for enhancement of nonlinear optical effects and sensing*, Research Competitiveness Subprogram, Louisiana Board of Regents, \$118,423. 7/2009-6/2012 (Role: PI)
12. G. Veronis, *Analysis of the effect of fabrication disorders in nanoscale plasmonic waveguides*, Summer Stipend Program, Louisiana State University, \$5,000. 7/2009 (Role: PI)
13. G. Veronis, *Nanoscale plasmonic devices for broadband enhancement of nonlinear optical effects*, Faculty Research Grant, Louisiana State University, \$10,000. 7/2008-6/2009 (Role: PI)

## Citations

Total citations in Web of Science as of June 30, 2014: 1727. h-index: 22.

## Publications

Most available at [www.ece.lsu.edu/gveronis/](http://www.ece.lsu.edu/gveronis/)

## Patents

1. U. S. Inan and G. Veronis, "Plasma display panel with improved cell geometry," U.S. Patent 7,288,892 (Issued on October 30, 2007).

## Book Chapters

1. P. Dastmalchi, A. Haddadpour, and G. Veronis, "Nanophotonics: devices for manipulating light at the nanoscale," in *Nanolithography: The art of fabricating nanoelectronic and nanophotonic devices*, M. Feldman (Ed.), Woodhead Publishing Series in Electronic and Optical Materials, no. 42, Chapter 11, pp. 376-398, Woodhead Publishing, 2013.
2. G. Veronis, "Finite-difference frequency-domain technique," in *Encyclopedia of Nanotechnology*, B. Bhushan (Ed.), pp. 843-852, Springer, 2012.
3. G. Veronis and S. Fan, "Plasmonic slot waveguides," in *Plasmonic Nanoguides and Circuits*, S. I. Bozhevolnyi (Ed.), Chapter 6, pp. 159-188, World Scientific, 2009.
4. G. Veronis and S. Fan, "Overview of simulation techniques for plasmonic devices," in *Surface Plasmon Nanophotonics*, M.L. Brongersma and P.G. Kik (Eds.), Springer Series in Optical Sciences, vol. 131, Chapter 12, pp. 169-182, Springer, 2007.

## Refereed Journal Publications

1. C. H. Granier, F. O. Afzal, C. Min, J. P. Dowling, and G. Veronis, "Optimized aperiodic highly directional narrowband infrared emitters," *Journal of the Optical Society of America B*, vol. 31, no. 6, pp. 1316–1321, June 2014.
2. P. Dastmalchi and G. Veronis, "Efficient design of nanoplasmonic waveguide devices using the space mapping algorithm," *Optics Express*, vol. 21, no. 26, pp. 32160-32175, December 2013.
3. W. Shin, W. Cai, P. B. Catrysse, G. Veronis, M. L. Brongersma, and S. Fan, "Broadband sharp 90-degree bends and t-splitters in plasmonic coaxial waveguides," *Nano Letters*, vol. 13, no. 10, pp. 4753–4758, October 2013.
4. Y. Huang, C. Min, and G. Veronis, "Compact slit-based couplers for metal-dielectric-metal plasmonic waveguides," *Optics Express*, vol. 20, no. 20, pp. 22233-22244, September 2012.
5. Y. Huang, C. Min, L. Yang, and G. Veronis, "Nanoscale plasmonic devices based on metal-dielectric-metal stub resonators," *International Journal of Optics*, vol. 2012, art. no. 372048, September 2012.
6. C. Min, L. Yang, and G. Veronis, "Microcavity enhanced optical absorption in subwavelength slits," *Optics Express*, vol. 19, no. 27, pp. 26850-26858, December 2011.
7. Y. Huang, C. Min, and G. Veronis, "Subwavelength slow-light waveguides based on a plasmonic analogue of electromagnetically induced transparency," *Applied Physics Letters*, vol. 99, no. 14, art. no. 143117, October 2011.
8. L. Yang, C. Min, and G. Veronis, "Guided subwavelength slow-light mode supported by a plasmonic waveguide system," *Optics Letters*, vol. 35, no. 24, pp. 4184-4186, December 2010.
9. C. Min and G. Veronis, "Theoretical investigation of fabrication-related disorders on the properties of subwavelength metal-dielectric-metal plasmonic waveguides," *Optics Express*, vol. 18, no. 20, pp. 20939-20948, September 2010.
10. C. Min, J. Li, G. Veronis, J.-Y. Lee, S. Fan, and P. Peumans, "Enhancement of optical absorption in thin-film organic solar cells through the excitation of plasmonic modes in metallic gratings," *Applied Physics Letters*, vol. 96, no.13, art. no. 133302, March 2010.
11. T.-W. Lee, S. D. Huver, H. Lee, L. Kaplan, S. B. McCracken, C. Min, D. B. Uskov, C. F. Wildfeuer, G. Veronis, and J. P. Dowling, "Optimization of quantum interferometric metrological sensors in the presence of photon loss," *Physical Review A*, vol. 80, no. 6, art. no. 063803, December 2009.
12. G. Veronis, S. E. Kocabas, D. A. B. Miller, and S. Fan, "Modeling of plasmonic waveguide components and networks," *Journal of Computational and Theoretical Nanoscience*, vol. 6, no. 8, pp. 1808-1826, August 2009 (*invited paper*).
13. Z. Ruan, G. Veronis, K. L. Vodopyanov, M. M. Fejer, and S. Fan, "Enhancement of optics-to-THz conversion efficiency by metallic slot waveguides," *Optics Express*, vol. 17, no. 16, pp. 13502-13515, August 2009.
14. C. Min and G. Veronis, "Absorption switches in metal-dielectric-metal plasmonic waveguides," *Optics Express*, vol. 17, no. 13, pp. 10757-10766, June 2009.
15. G. Veronis, Z. Yu, S. E. Kocabas, D. A. B. Miller, M. L. Brongersma, and S. Fan, "Metal-dielectric-metal plasmonic waveguide devices for manipulating light at the nanoscale," *Chinese Optics Letters*, vol. 7, no. 4, pp. 302-308, April 2009 (*invited paper*).
16. J. S. White, G. Veronis, Z. Yu, E. S. Barnard, A. Chandran, S. Fan, and M. L. Brongersma, "Extraordinary optical absorption through subwavelength slits," *Optics Letters*, vol. 34, no. 5, pp. 686-688, March 2009.
17. S. E. Kocabas, G. Veronis, D. A. B. Miller, and S. Fan, "Modal analysis and coupling in metal-insulator-metal waveguides," *Physical Review B*, vol. 79, no. 3, art. no. 035120, January 2009.
18. S. E. Kocabas, G. Veronis, D. A. B. Miller, and S. Fan, "Transmission line and equivalent circuit models for plasmonic waveguide components," *IEEE Journal of Selected Topics in Quantum Electronics*, vol. 14, no. 6, pp. 1462-1472, November-December 2008.
19. W. T. Lau, J. -T. Shen, G. Veronis, S. Fan, and P. V. Braun, "Tuning coherent radiative thermal conductance in multilayer photonic crystals," *Applied Physics Letters*, vol. 92, no. 10, art. no. 103106, March 2008.
20. G. Veronis and S. Fan, "Crosstalk between three-dimensional plasmonic slot waveguides," *Optics Express*, vol. 16, no. 3, pp. 2129-2140, February 2008.
21. Z. Yu, G. Veronis, S. Fan, and M. L. Brongersma, "Gain-induced switching in metal-dielectric-metal plasmonic waveguides," *Applied Physics Letters*, vol. 92, no. 4, art. no. 041117, January 2008.

22. Z. Yu, G. Veronis, Z. Wang, and S. Fan, "One-way electromagnetic waveguide formed at the interface between a plasmonic metal under a static magnetic field and a photonic crystal," *Physical Review Letters*, vol. 100, no. 2, art. no. 023902, January 2008.
23. G. Veronis and S. Fan, "Modes of subwavelength plasmonic slot waveguides," *Journal of Lightwave Technology*, vol. 25, no. 9, pp. 2511-2521, September 2007 (*invited paper*).
24. W. T. Lau, J. -T. Shen, G. Veronis, and S. Fan, "Spatial coherence of the thermal electromagnetic field in the vicinity of a dielectric slab," *Physical Review E*, vol. 76, no. 1, art. no. 016601, July 2007.
25. G. Veronis and S. Fan, "Theoretical investigation of compact couplers between dielectric slab waveguides and two-dimensional metal-dielectric-metal plasmonic waveguides," *Optics Express*, vol. 15, no. 3, pp. 1211-1221, February 2007.
26. P. B. Catrysse, J. -T. Shen, G. Veronis, H. Shin, and S. Fan, "Metallic metamaterials with a high index of refraction," *Optics & Photonics News*, vol. 17, no. 12, p. 34, December 2006.
27. Z. Yu, G. Veronis, M. L. Brongersma, and S. Fan, "Design of mid-infrared photodetectors enhanced by surface plasmons on grating structures," *Applied Physics Letters*, vol. 89, no. 15, art. no. 151116, October 2006. Also highlighted in *Nature Photonics*, 2006.27, October 2006.
28. G. D. Moss, V. P. Pasko, N. Liu, and G. Veronis, "Monte Carlo model for analysis of thermal runaway electrons in streamer tips in transient luminous events and streamer zones of lightning leaders," *Journal of Geophysical Research (Space Physics)*, vol. 111, no. A2, art. no. A02307, February 2006.
29. P. B. Catrysse, G. Veronis, H. Shin, J. -T. Shen, and S. Fan, "Guided modes supported by plasmonic films with a periodic arrangement of sub-wavelength slits," *Applied Physics Letters*, vol. 88, no. 3, art. no. 031101, January 2006.
30. G. Veronis and S. Fan, "Guided subwavelength plasmonic mode supported by a slot in a thin metal film," *Optics Letters*, vol. 30, no. 24, pp. 3359-3361, December 2005.
31. G. Veronis and S. Fan, "Bends and splitters in subwavelength metal-dielectric-metal plasmonic waveguides," *Applied Physics Letters*, vol. 87, no. 13, art. no. 131102, September 2005.
32. G. Veronis, R. W. Dutton, and S. Fan, "Metallic photonic crystals with strong broadband absorption at optical frequencies over wide angular range," *Journal of Applied Physics*, vol. 97, no. 9, art. no. 093104, May 2005.
33. G. Veronis and U. S. Inan, "Simulation of self-erase discharge waveforms in plasma display panels," *IEEE Transactions on Plasma Science*, vol. 33, no. 2, pp. 516-517, April 2005.
34. G. Veronis and U. S. Inan, "Improvement of the efficiency of plasma display panels by combining waveform and cell geometry design," *IEEE Transactions on Plasma Science*, vol. 33, no. 1, pp. 147-156, February 2005.
35. G. Veronis, W. Suh, Y. Liu, M. Han, Z. Wang, R. W. Dutton, and S. Fan, "Coupled optical and electronic simulations of electrically pumped photonic-crystal-based light emitting diodes," *Journal of Applied Physics*, vol. 97, no. 4, art. no. 044503, February 2005.
36. G. Veronis, R. W. Dutton, and S. Fan, "Method for sensitivity analysis of photonic crystal devices," *Optics Letters*, vol. 29, no. 19, pp. 2288-2290, October 2004.
37. G. Veronis and U. S. Inan, "Cell geometry designs for efficient plasma display panels," *Journal of Applied Physics*, vol. 92, no. 9, pp. 4897-4905, November 2002.
38. G. Veronis and U. S. Inan, "Simulation studies of the coplanar-electrode and other plasma display panel cell designs," *Journal of Applied Physics*, vol. 91, no. 12, pp. 9502-9512, June 2002.
39. G. Veronis, U. S. Inan, and V. P. Pasko, "He-Xe microdischarges: Comparison of simulation results with experimental data," *Applied Physics Letters*, vol. 78, no. 1, pp. 25-27, January 2001.
40. G. Veronis, U. S. Inan, and V. P. Pasko, "Fundamental properties of inert gas mixtures for plasma display panels," *IEEE Transactions on Plasma Science*, vol. 28, no. 4, pp. 1271-1279, August 2000.
41. J. L. Tsalamengas and G. Veronis, "Radiation and receiving characteristics of parallel plate-fed slot antennas loaded by a dielectric cylinder: TM-case," *Journal of Electromagnetic Waves and Applications*, vol. 13, no. 7, pp. 923-941, July 1999.
42. J. L. Tsalamengas and G. Veronis, "Radiation and receiving characteristics of parallel plate-fed slot antennas loaded by a dielectric cylinder: TE-case," *Journal of Electromagnetic Waves and Applications*, vol. 13, no. 7, pp. 903-922, July 1999.
43. G. Veronis, V. P. Pasko, and U. S. Inan, "Characteristics of mesospheric optical emissions produced by lightning discharges," *Journal of Geophysical Research (Space Physics)*, vol. 104, no. A6, pp. 12645-12656, June 1999.

## Refereed Conference Papers

1. C. H. Granier, F. O. Afzal, C. Min, J. P. Dowling, and G. Veronis, "Design of highly directional and narrowband infrared emitters," *Proceedings of the SPIE*, 2014 (*accepted*).
2. P. Dastmalchi and G. Veronis, "Compact multisection cavity switches in metal-dielectric-metal plasmonic waveguides," *Conference on Lasers and Electro-Optics, CLEO: 2014*, June 8-13 2014, San Jose, CA, paper FTu3K.7, 2014.
3. Y. Huang, P. Dastmalchi, and G. Veronis, "Slow-light enhanced nanoscale plasmonic waveguide sensors and switches," *Proceedings of the SPIE*, 8988, 89880V, 2014.
4. P. Dastmalchi and G. Veronis, "Efficient design of nanoscale metal-dielectric-metal plasmonic waveguide devices," *Frontiers in Optics 2013/Laser Science XXIX*, October 6-10 2013, Orlando, FL, paper FW1E.4, 2013.
5. C. H. Granier, F. O. Afzal, G. Veronis, and J. P. Dowling, "Multilayer structures with highly directional absorptivity for solar thermophotovoltaics," *Proceedings of the SPIE*, 8824, 88240M, 2013.
6. W. Shin, W. Cai, P. B. Catrysse, G. Veronis, M. L. Brongersma, and S. Fan, "Plasmonic nano-coaxial waveguides for 90-degree bends and T-splitters," *Conference on Lasers and Electro-Optics, CLEO: 2013*, June 9-14 2013, San Jose, CA, paper QW3N.5, 2013.
7. P. Dastmalchi and G. Veronis, "Efficient optimization of nanoplasmonic devices using space mapping," *Proceedings of the SPIE*, 8627, 862712, 2013.
8. G. Veronis, C. Min, C. H. Granier, and J. P. Dowling, "Enhancing the efficiency of photovoltaic solar cells with photonic nanostructures," *IEEE Photonics Conference 2012*, September 23-27 2012, Burlingame, CA, paper MW1, 2012.
9. M. B. Kim, T.-W. Lee, G. Veronis, H. Lee, and J. P. Dowling, "Investigation for the macroscopic quantum electrodynamics to describe light in dielectric material," *43rd Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics*, June 4-8 2012, Orange County, CA, paper G6.00008, 2012.
10. Y. Huang, C. Min, and G. Veronis, "Efficient coupling to metal-dielectric-metal plasmonic waveguides with subwavelength slit structures," *Conference on Lasers and Electro-Optics, CLEO: 2012*, May 6-11 2012, San Jose, CA, paper JTh2A.113, 2012.
11. G. Veronis, "Compact photodetectors and couplers based on plasmonic nanocavities," *The 2012 Villa Conference on Advanced Optical Materials, Workshop G: Plasmonic Materials, The 2012 Energy Materials Nanotechnology (EMN) Meeting*, April 16-20 2012, Orlando, FL, 170, 2012.
12. C. Min, Y. Huang, L. Yang, and G. Veronis, "Compact optical microcavity structures for enhancement of absorption and transmission cross sections of subwavelength plasmonic devices," *Proceedings of the SPIE*, 8264, 826413, 2012.
13. C. Min, L. Yang, and G. Veronis, "Enhancement of light absorption in subwavelength plasmonic slits by optical microcavities," *Frontiers in Optics 2011/Laser Science XXVII*, October 16-20 2011, San Jose, CA, paper FWW4, 2011.
14. C. Min and G. Veronis, "Active plasmonic devices enhanced by waveguide dispersion engineering," *Proceedings of the SPIE*, 8095, 80951C, 2011.
15. C. Min and G. Veronis, "Slow-light enhanced absorption switches in metal-dielectric-metal plasmonic waveguides," *Conference on Lasers and Electro-Optics, CLEO: 2011*, May 1-6 2011, Baltimore, MD, paper QThL6, 2011.
16. G. Veronis, "Plasmonic waveguide-cavity systems for manipulating light at the nanoscale," *The 2011 Villa Conference on Interactions Among Nanostructures, VCIAN-2011*, April 21-25 2011, Las Vegas, NV, 109, 2011.
17. Y. Huang, C. Min, and G. Veronis, "Plasmon-induced transparency in subwavelength metal-dielectric-metal waveguides," *Proceedings of the SPIE*, 7941, 79410X, 2011.
18. L. Yang, Y. Huang, C. Min, and G. Veronis, "Slow-light subwavelength plasmonic waveguides based on plasmonic analogues of periodically-loaded transmission lines and electromagnetically induced transparency," *The 23rd Annual Meeting of the IEEE Photonics Society*, November 7-11 2010, Denver, CO, 395, 2010.
19. C. Min and G. Veronis, "Investigation of the effect of fabrication-related disorders in subwavelength metal-dielectric-metal plasmonic waveguides," *Proceedings of the SPIE*, 7757, 77573E, 2010.
20. C. Min and G. Veronis, "All-optical nonlinear switches based on Y-shaped plasmonic waveguides," *Proceedings of the SPIE*, 7756, 775612, 2010.

21. C. Min and G. Veronis, "Theoretical investigation of fabrication-related disorders on the properties of subwavelength metal-dielectric-metal plasmonic waveguides," *Photonic Metamaterials and Plasmonics (META) 2010*, June 7-9 2010, Tucson, AZ, paper MMD2, 2010.
22. C. Min, J. Li, G. Veronis, J. Y. Lee, S. Fan, and P. Peumans, "Optical absorption enhancement in thin-film organic photovoltaic solar cells through the excitation of plasmonic modes in metallic gratings," *Optics for Solar Energy (SOLAR) 2010*, June 7-9 2010, Tucson, AZ, paper SWA2, 2010.
23. L. Yang, C. Min, and G. Veronis, "Guided subwavelength slow-light mode supported by a periodic plasmonic waveguide," *Conference on Lasers and Electro-Optics, CLEO/QELS 2010*, May 16-21 2010, San Jose, CA, paper JThE3, 2010.
24. L. Yang, C. Min, and G. Veronis, "Guided subwavelength optical mode with slow group velocity supported by a periodic plasmonic waveguide," *Proceedings of the SPIE*, 7604, 760418, 2010.
25. Z. Ruan, G. Veronis, K. L. Vodopyanov, M. M. Fejer, and S. Fan, "Enhancement of optics-to-THz conversion efficiency by metallic slot waveguides," *Proceedings of the SPIE*, 7582, 75820W, 2010.
26. C. Min, J. Li, G. Veronis, J. Y. Lee, S. Fan, and P. Peumans, "Enhancement of optical absorption efficiency in thin-film organic photovoltaic solar cells through the excitation of plasmonic modes in metallic gratings," *2009 MRS Fall Meeting*, November 30-December 4 2009, Boston, MA, paper R3.8, 2009.
27. S. B. McCracken, T. W. Lee, S. D. Huver, L. Kaplan, H. Lee, C. Min, D. B. Uskov, C. F. Wildfeuer, G. Veronis, and J. P. Dowling, "Optimization of states in a lossy metrology," *Single Photon Workshop 2009*, November 3-6 2009, Boulder, CO, 98, 2009.
28. C. Min and G. Veronis, "All-optical absorption switches in subwavelength metal-dielectric-metal plasmonic waveguides," *Frontiers in Optics 2009/Laser Science XXV*, October 11-15 2009, San Jose, CA, paper FThW5, 2009.
29. J. S. White, G. Veronis, Z. Yu, E. S. Barnard, A. Chandran, S. Fan, and M. L. Brongersma, "Extraordinary optical absorption through subwavelength slits," *SPIE Optics + Photonics 2009*, August 2-6 2009, San Diego, CA, paper 7395-42, 2009.
30. C. Min and G. Veronis, "All-optical absorption switches in subwavelength metal-dielectric-metal plasmonic waveguides," *Proceedings of the SPIE*, 7394, 73941Y, 2009.
31. S. B. McCracken, T. W. Lee, S. D. Huver, L. Kaplan, H. Lee, C. Min, D. B. Uskov, C. F. Wildfeuer, G. Veronis, and J. P. Dowling, "Optimization of states in a lossy interferometer," *40th Annual Meeting of the Division of Atomic, Molecular and Optical Physics*, May 19-23 2009, Charlottesville, VA, paper J1.00005, 2009.
32. J. S. White, G. Veronis, Z. Yu, E. S. Barnard, A. Chandran, S. Fan, and M. L. Brongersma, "Extraordinary optical absorption through plasmonic subwavelength slits," *2009 APS March Meeting*, March 16-20 2009, Pittsburgh, PA, paper B27.00008, 2009.
33. W. T. Lau, J. -T. Shen, G. Veronis, and S. Fan, "Ultra-small coherent thermal conductance using multi-layer photonic crystal," *Proceedings of the SPIE*, 7223, 722317, 2009.
34. G. Veronis and S. Fan, "Large enhancement of second-harmonic generation in subwavelength metal-dielectric-metal plasmonic waveguides," *Proceedings of the SPIE*, 7218, 72180Y, 2009.
35. S. E. Kocabas, G. Veronis, D. A. B. Miller, and S. Fan, "Spectral analysis of scattering in metal-insulator-metal waveguides and related equivalent circuit models," *Frontiers in Optics, META 2008*, October 19-24 2008, Rochester, NY, paper MTuD5, 2008.
36. G. Veronis, Z. Yu, S. Fan, and M. L. Brongersma, "Gain-induced switching and enhancement of nonlinear effects in metal-dielectric-metal plasmonic waveguides," *Frontiers in Optics, META 2008*, October 19-24 2008, Rochester, NY, paper MTuD1, 2008.
37. G. Veronis and S. Fan, "Properties of three-dimensional plasmonic slot waveguides," *Proceedings of the SPIE*, 7032, 703216, 2008.
38. W. T. Lau, J. -T. Shen, G. Veronis, and S. Fan, "Tuning coherent radiative thermal conductance in multilayer photonic crystals," *Conference on Lasers and Electro-Optics, CLEO/QELS 2008*, May 4-9 2008, San Jose, CA, paper QFH2, 2008.
39. G. Veronis and S. Fan, "Crosstalk between three-dimensional plasmonic slot waveguides," *Conference on Lasers and Electro-Optics, CLEO/QELS 2008*, May 4-9 2008, San Jose, CA, paper QWA4, 2008.
40. J. White, E. S. Barnard, G. Veronis, S. Fan, and M. L. Brongersma, "Near-field localization with surface plasmon resonant nano-apertures for efficient, high-speed photodetectors," *MRS 2008 Spring Meeting*, March 24-28 2008, San Francisco, CA, paper L5.4, 2008.

41. G. Veronis, Z. Yu, M. L. Brongersma, and S. Fan, "Subwavelength plasmonic devices for guiding and concentrating light," *15th International Conference on Computational and Experimental Engineering and Sciences*, March 16-22, Honolulu, HI, 22, 2008.
42. S. Fan, Z. Yu, G. Veronis, Z. Wang, and J. T. Shen, "One-way waveguide and high-index metamaterials," *15th International Conference on Computational and Experimental Engineering and Sciences*, March 16-22, Honolulu, HI, 22, 2008.
43. W. T. Lau, J. -T. Shen, G. Veronis, and S. Fan, "Spatial coherence of the thermal electromagnetic field in the vicinity of a dielectric slab," *Proceedings of the SPIE*, 6901, 690109, 2008.
44. Z. Yu, G. Veronis, M. L. Brongersma, and S. Fan, "Gain-induced switching in metal-dielectric-metal plasmonic waveguides," *Proceedings of the SPIE*, 6896, 68960L, 2008.
45. Z. Yu, G. Veronis, Z. Wang, and S. Fan, "One-way electromagnetic waveguide," *The 20th Annual Meeting of the Lasers and Electro-Optics Society, LEOS 2007*, 278, 2007.
46. J. White, Z. Yu, G. Veronis, S. Fan, and M. L. Brongersma, "Surface plasmon-enhanced photodetectors," *SPIE Optics + Photonics 2007*, August 26-30 2007, San Diego, CA, paper 6642-20, 2007.
47. S. Fan, J. T. Shen, Z. Yu, G. Veronis and Z. Wang, "One-way waveguide and strong photon-photon interactions in nanophotonic structures," *IEEE/LEOS International Conference on Optical MEMS and Nanophotonics 2007*, 181, 2007.
48. G. Veronis, W. Shin, and S. Fan, "Compact couplers between dielectric and metal-dielectric-metal plasmonic waveguides," *Conference on Lasers and Electro-Optics, CLEO/QELS 2007*, May 6-11 2007, Baltimore, MD, paper CWC2, 2007.
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51. G. Veronis and S. Fan, "Subwavelength plasmonic waveguide structures based on slots in thin metal films," *Conference on Lasers and Electro-Optics, CLEO/QELS 2006*, May 21-26 2006, Long Beach, CA, paper JThC94, 2006.
52. G. Veronis and S. Fan, "Frequency-domain modeling of photonic crystal and plasmonic devices," *Proceedings of the XV International Workshop on Optical Waveguide Theory and Numerical Modeling*, 12, 2006.
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54. G. Veronis and S. Fan, "Subwavelength plasmonic waveguide structures based on slots in thin metal films," *Proceedings of the SPIE*, 6123, 612308, 2006.
55. G. Veronis and S. Fan, "Frequency domain modeling of nanophotonic devices," *Proceedings of the SPIE*, 6038, 60380X, 2006.
56. S. Fan, H. Shin, M. L. Brongersma, G. Veronis, J. -T. Shen, and P. B. Catrysse, "Sub-wavelength resonances in metal-dielectric-metal plasmonic structures," *The 18th Annual Meeting of the Lasers and Electro-Optics Society, LEOS 2005*, 537, 2005.
57. G. Veronis, Y. Liu, W. Suh, M. Han, Z. Wang, R. W. Dutton and S. Fan, "Coupled optical and electronic simulations of electrically pumped photonic-crystal-based LEDs," *Proceedings of the SPIE*, 5733, 422, 2005.
58. G. Veronis, R. W. Dutton and S. Fan, "A new method for sensitivity analysis of photonic crystal devices," *Proceedings of the SPIE*, 5733, 348, 2005.
59. G. D. Moss, V. P. Pasko, and G. Veronis, "Monte Carlo model for analysis of runaway electrons in streamer tips in sprites," *American Geophysical Union 2004 Fall Meeting*, December 13-17, San Francisco, California, AE31A - 0158, 2004.
60. G. Veronis, Y. -C. Lu, and R. W. Dutton, "Modeling of wave behavior of substrate noise coupling for mixed-signal IC design," *5th International Symposium on Quality Electronic Design (IEEE ISQED 2004)*, 22-24 March 2004, San Jose, CA, Proceedings of the 5th International Symposium on Quality Electronic Design, 303, 2004.
61. G. Veronis and U. S. Inan, "Cell geometry designs for efficient plasma display panels," *IEEE International Conference on Plasma Sciences*, May 26-30, Banff, Alberta, Canada, IEEE Conference Record -Abstracts. The 29th IEEE International Conference on Plasma Science, 101, 2002.
62. G. Veronis and U. S. Inan, "Improvement of the luminous efficiency of plasma display panels by numerical simulation," *IEEE International Conference on Pulsed Power and Plasma Sciences*, June 17-22, Las Vegas, Nevada, IEEE Conference Record -Abstracts. Pulsed Power Plasma Science, 303, 2001.

63. G. Veronis and U. S. Inan, "Optimization of the luminous efficiency of plasma display panels using numerical modeling," *Society for Information Display 2001 International Symposium*, June 5-7, San Jose, California, Digest of Technical Papers, 32, 770, 2001.
64. G. Veronis, U. S. Inan, and V. P. Pasko, "Comparison between simulation models and experimental results for a planar He-Xe microdischarge," *Gaseous Electronics Conference*, October 24-27, Houston, Texas, Bulletin of the American Physical Society, Vol. 45, No. 6, 70, 2000.
65. G. Veronis, U. S. Inan, and V. P. Pasko, "Fundamental properties of inert gas mixtures for plasma display panels," *IEEE International Conference on Plasma Science*, June 4-7, New Orleans, Louisiana, IEEE Conference Record -Abstracts. The 27th IEEE International Conference on Plasma Science, 128, 2000.
66. G. Veronis, V. P. Pasko, and U. S. Inan, "Characteristics of mesospheric optical flashes (Elves) produced by lightning discharges," *American Geophysical Union 1998 Fall Meeting*, December 6-10, San Francisco, California, EOS, 79, N 45, F137, 1998.

### Invited Talks

1. G. Veronis, C. Min, C. H. Granier, and J. P. Dowling, "Enhancing the efficiency of photovoltaic solar cells with photonic nanostructures," IEEE Photonics Conference 2012, Burlingame, CA, September 2012.
2. G. Veronis, "Plasmonics for controlling light at the nanoscale: cavity and slow-light enhanced devices, and the effect of disorder," Workshop on Linear and Nonlinear Optical Interactions in Metamaterials and Plasmonic Nanostructures, Huntsville, AL, June 2012.
3. G. Veronis, "Compact photodetectors and couplers based on plasmonic nanocavities," The 2012 Energy Materials Nanotechnology (EMN) Meeting, Orlando, FL, April 2012.
4. G. Veronis, "Plasmonics for controlling light at the nanoscale: cavity and slow-light enhanced devices, and the effect of disorder," Computational Mathematics Seminar Series, Louisiana State University, Baton Rouge, LA, October 2011.
5. G. Veronis, "Nanoscale integrated photonic devices and photovoltaic nanostructures based on plasmonic resonances," 2nd Southeast Symposium on Contemporary Engineering Topics (SSCET), New Orleans, LA, August 2011.
6. G. Veronis, "Plasmonic waveguide-cavity systems for manipulating light at the nanoscale," The 2011 Villa Conference on Interactions Among Nanostructures, Las Vegas, NV, April 2011.
7. G. Veronis, "Plasmonic devices for densely integrated optics and for photovoltaics," Mechanical Engineering Seminar Series, Louisiana State University, Baton Rouge, LA, September 2010.
8. G. Veronis, Z. Yu, M. L. Brongersma, and S. Fan, "Subwavelength plasmonic devices for guiding and concentrating light," 15th International Conference on Computational and Experimental Engineering and Sciences, Honolulu, HI, March 2008.
9. G. Veronis, "Modeling of nanophotonic and plasmonic devices," Foundation for Research and Technology-Hellas (FORTH), Heraklion, Greece, September 2007.
10. G. Veronis and S. Fan, "Frequency-domain modeling of photonic crystal and plasmonic devices," International Workshop on Optical Waveguide Theory and Numerical Modeling, Varese, Italy, April 2006.
11. G. Veronis and S. Fan, "Frequency domain modeling of nanophotonic devices," SPIE International Symposium on Microelectronics, MEMS, and Nanotechnology, Brisbane, Australia, December 2005.
12. G. Veronis, U. S. Inan, and V. P. Pasko, "Fundamental properties of inert gas mixtures for plasma display panels," The 27th IEEE International Conference on Plasma Science, New Orleans, LA, June 2000.

### Teaching and Advising Activities

#### Courses Taught

- EE2120: Circuits I, Spring 2010.
- EE3320: Electrical and Magnetic Fields, Spring 2009, Fall 2012, Spring 2013.
- EE4340: Fiber Optic and Microwave Propagation, Spring 2012.
- EE7200: Nanophotonics, Fall 2009, Fall 2011, Spring 2014.



- EE7000: Computational Electromagnetics, Fall 2008, Spring 2011.

### **Special Topics Courses Developed and Taught**

- EE 7200 (Nanophotonics): The course covers nanoscale structures and devices and their applications for manipulating light at the nanoscale. Content: Maxwell's equations, light-matter interaction, dispersion, optical properties of nanostructures. Photonic crystals. Photonic nanocircuits. Metal optics. Manipulating light with plasmonic nanostructures. Metamaterials.
- EE 7000 (Computational Electromagnetics): Introduction to numerical techniques for the solution of electromagnetic problems in the time and frequency domains with an emphasis on finite-difference methods. Content: Review of Electromagnetics and Maxwell's equations. Finite differencing of partial differential equations. One-dimensional wave equation. The Finite-Difference Time-Domain (FDTD) method. Numerical stability and dispersion. Scattered field formulation. Absorbing boundary conditions. The Finite-Difference Frequency-Domain (FDFD) method. Modeling of dispersive materials. Eigenvalue problems.

### **Graduate Student Supervision**

#### **Theses/Dissertations Directed**

- Yin Huang (Ph.D., Major Professor), ECE LSU, graduated in December 2012. Dissertation title: *Plasmonic Devices for Manipulating Light at the Nanoscale: Slow-light Waveguides and Compact Couplers*.

#### **Theses/Dissertations in Progress**

- Christopher Granier (PhD in Physics & Astronomy, jointly with Prof. J. P. Dowling), started in Fall 2010.
- Pouya Dastmalchi (PhD), started in Fall 2011.
- Ali Haddadpour (PhD), started in Fall 2012.
- Amirreza Mahigir (PhD), started in Summer 2013.
- Iman Zand (PhD), started in Fall 2013.

### **Undergraduate Student Supervision**

- Jennifer Li (LA-STEM research scholar), August 2008-June 2010.
- Ian Reynolds (CCT REU student), June 2010-July 2010.
- Lindsey Whitehurst (CCT REU student), June 2011-July 2011.
- Sumit Sarbadhichary (Physics & Astronomy student, jointly with Prof. J. P. Dowling), June 2011-May 2012.
- Harrison Norman (ECE student), August 2011-May 2012.
- Francis Afzal (CCT REU student), June 2012-July 2012, June 2013-August 2013.
- Mario Reyes (CCT REU student), June 2013-August 2013.
- Simon Lorenzo (Physics & Astronomy student, jointly with Prof. J. P. Dowling), August 2013-present.

### **Post-Doctoral Fellow Supervision**

- Dr. Changjun Min (jointly with Prof. J. P. Dowling and Dr. T. W. Lee), September 2008-June 2011.

### **Professional Activities**

#### **Program Committee Membership**

- *The 58th International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication (EIPBN) 2014*, May 2014, Washington, DC.

- *Optics for Solar Energy (SOLAR 2013)*, OSA Topical Meeting, November 2013, Tucson, AZ.
- *The 57th International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication (EIPBN) 2013*, May 2013, Nashville, TN.
- *Optics for Solar Energy (SOLAR 2012)*, OSA Topical Meeting, November 2012, Eindhoven, The Netherlands.
- *Optics for Solar Energy (SOLAR 2011)*, OSA Topical Meeting, November 2011, Austin, TX.
- *3rd Annual IEEE Green Technologies Conference*, April 2011, Baton Rouge, LA.
- *Optics for Solar Energy (SOLAR 2010)*, OSA Topical Meeting, June 2010, Tucson, AZ.

### **Editorship**

- Guest editor, special issue on “Nanoplasmonics and Metamaterials,” *International Journal of Optics*, 2011-2012.
- Editorial board member, *ISRN Optics*, 2011-present.

### **Book/Proposal Reviewing**

- Proposal reviewer for the National Science Foundation (NSF) (EPAS and EPMD in ECCS, DMR).
- Proposal reviewer for the Department of Energy (DoE) (MSE in BES).
- Proposal reviewer for the Indo-US Science & Technology Forum, the Israeli Ministry of Science and Technology, the Kuwait Foundation for the Advancement of Sciences, the Georgian National Science Foundation.
- Reviewer for the Department of Energy (DoE) Office of Science Graduate Fellowship (DOE SCGF) program, 2012.
- Book proposal reviewer for John Wiley & Sons, Wiley-VCH, CRC Press.

### **Refereeing for Journals**

- Optics Letters (frequent).
- Optics Express (frequent).
- Journal of the Optical Society of America B (frequent).
- Optics Communications (frequent).
- IEEE Journal of Lightwave Technology (frequent).
- IEEE Journal of Quantum Electronics (frequent).
- IEEE Journal of Selected Topics in Quantum Electronics (frequent).
- IEEE Photonics Technology Letters (frequent).
- IEEE Photonics Journal (frequent).
- Photonics and Nanostructures - Fundamentals and Applications (frequent).
- Journal of Applied Physics (frequent).
- Applied Physics Letters (frequent).
- IEEE Transactions on Nanotechnology (frequent).
- IEEE Microwave and Wireless Components Letters (frequent).
- IEEE Transactions on Antennas and Propagation (frequent).
- IEEE Transactions on Plasma Science (frequent).
- Journal of Electromagnetic Waves and Applications/Progress in Electromagnetic Research (frequent).
- Nature Photonics (occasional).
- Nature Nanotechnology (occasional).
- Nature Communications (occasional).
- Nano Letters (occasional).
- Scientific Reports (occasional).
- Journal of the Optical Society of America A (occasional).
- Applied Optics (occasional).
- Optical Engineering (occasional).

- Journal of Physics B: Atomic, Molecular & Optical Physics (occasional).
- Applied Physics B: Lasers and Optics (occasional).
- Journal of Modern Optics (occasional).
- Chinese Optics Letters (occasional).
- International Journal of Photoenergy (occasional).
- Current Applied Physics (occasional).
- Physica E (occasional).
- Materials (occasional).
- ACS Applied Materials & Interfaces (occasional).
- Organic Electronics (occasional).
- IEEE Electron Device Letters (occasional).
- IEEE Transactions on Electron Devices (occasional).
- IEEE Transactions on Microwave Theory and Techniques (occasional).
- Nanophotonics (occasional).
- Solar Energy Materials and Solar Cells (occasional).
- Sensors & Actuators B: Chemical (occasional).
- Journal of Computational Physics (occasional).
- Journal of Vacuum Science and Technology (occasional).
- European Physical Journal - Applied Physics (occasional).
- Journal of Mathematical Analysis and Applications (occasional).
- Journal of Geophysical Research (Space Physics) (occasional).

#### **Refereeing for Conferences**

- Optics for Solar Energy (SOLAR) 2013.
- The 57th International Conference on Electron, Ion, and Photon Beam Technology, & Nanofabrication (EIPBN) 2013.
- Optics for Solar Energy (SOLAR) 2012.
- The 56th International Conference on Electron, Ion, and Photon Beam Technology, & Nanofabrication (EIPBN) 2012.
- Optics for Solar Energy (SOLAR) 2011.
- The 55th International Conference on Electron, Ion, and Photon Beam Technology, & Nanofabrication (EIPBN) 2011.
- 3rd Annual IEEE Green Technologies Conference 2011.
- Optics for Solar Energy (SOLAR) 2010.
- The 54th International Conference on Electron, Ion, and Photon Beam Technology, & Nanofabrication (EIPBN) 2010.

#### **Professional Memberships**

- Member of IEEE.
- Member of OSA.

#### **Departmental, College and University Service**

- Member of the Ph.D. committee of eight students.
- Member of the M.S. thesis committee of three students.
- Member of Ph.D. Committee as Dean's representative of four students.
- Member of the Undergraduate thesis committee of one student.
- Member, College Policy Committee, College of Engineering, Louisiana State University, 2012-present.
- Member, Graduate Admissions Committee, Department of Electrical and Computer Engineering, Louisiana State University, 2011-2012.

- Member, Graduate Studies Committee, Division of Electrical and Computer Engineering, Louisiana State University, 2013-present.
- Secretary (Department Meeting Minutes), Division of Electrical and Computer Engineering, Louisiana State University, 2013-present.
- Member, Faculty Search Committee, Nuclear Engineering position (joint MIE/CCT hire), Center for Computation and Technology, Louisiana State University, 2013.
- Member, Faculty Search Committee, Computational Science Applications, Center for Computation and Technology, Louisiana State University, 2011-2012.
- Reviewer, CCT REU program, Center for Computation and Technology, Louisiana State University, 2013, 2014.
- Reviewer, CCT Distinguished Graduate Dissertation Fellowship program, Center for Computation and Technology, Louisiana State University, 2010.