Curriculum Vitae of Alan Xiaolong Wang

Contact Information:

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Current Position:

2011.9-Present	Oregon State University	Assistant Professor

Previous Professional Positions:

2010.6-2011.8	Omega Optics, Inc.	Chief Research Scientist
2008.7-2010.5	Omega Optics, Inc.	Senior Research Scientist
2007.1-2008.6	Omega Optics Inc.	Research Scientist
2003.9-2006.12	University of Texas at Austin	Research Assistant

Education:

2006.12	Ph.D., Electrical and Computer Engineering, University of Texas at Austin Advisor: Ray T. Chen
2003.07	M.S.E, Solid State Electronics, Chinese Academy of Sciences, China
2000.06	B.S., Materials Science and Engineering, Tsinghua University, China

Received Grants at OSU:

- **Principal Investigator**, *Hewlett Packard Inc. Corvallis Sponsored Industrial Research Project*, "**Measuring Ink-jet Printed Liquid Diffusion in Porous Medium by Optical Scattering Method**"

  06/15/2012~10/14/2013, $**31,000**

Received Grants at Omega Optics, Inc.

- **Principal Investigator**, *Defense Advanced Research Project Agency (DARPA)* SBIR Project, "High Speed E-O Polymer Photonic Devices by Nickel Template Replication with Transferred Traveling Wave Electrode"

  Phase I, 3/1/2011~9/30/2011, **$149,000**
- Co-Principal Investigator, *Air Force Office of Scientific Research (AFOSR)* Small Business Technology Transfer (STTR) Project, "Printable Silicon Nanomembranes for Solar-Powered, Bi-directional Phased-Array Antenna Communication System on Flexible Substrates"

  Phase II, 11/15/2010~11/14/2012, **$750,000**
- Co-Principal Investigator, *ARMY* Small Business Innovative Research (SBIR) Project, "Monolithic Photonic Crystal On-Chip Spectrometer for Laser Absorption Spectroscopy"
  Phase I, 11/2010~09/2011, **$120,000**
- **Principal Investigator**, *National Institute of Health / National Institute of Biomedical Imaging and Bioengineering (NIH/NIBIB)* STTR Project, "Planar Lightwave Circuit based Surface Enhanced Raman Scattering Spectrometer"

  Phase I, 09/27//2010~09/26/2011, **$85,668**
- Co-Principal Investigator, *NIH/National Cancer Institute (NIH/NCI)* SBIR Project, "Photonic Crystal Microarray based Nano-platform as a Personalized Diagnostic Assay for High

Throughput Detection and Identification of Cancers"
Phase I, 09/2010~06/2011, **$200,000**

- **Principal Investigator**, *ARMY Research Office* (*ARO*) STTR Project, "Resonant Cavity Enhanced On-Chip Raman Spectrometer Array with Precisely Positioned Metallic Nano-Gaps for Single Molecule Detection"

  Phase I, 09/23//2010~03/22//2011, **$100,000**
- **Principal Investigator**, *U.S. ARMY Space & Missile Defense Command/Army Forces Strategic Command(USASMDC/ARSTRAT)* SBIR Project, "Electromagnetic Attack Sensor"

  Phase I, 05/14/2010~04/13/2011, **$120,000**
- Co-Principal Investigator, *National Science Foundation (NSF)* SBIR Project, "Photonic Crystal Slot Waveguide Miniature Spectrometer for In-Situ Groundwater Contaminant and Greenhouse Gas Detection and Identification"

  Phase I, 02/2010~08/2010, **$150,000**
- Co-Principal Investigator, *Environmental Protection Agency (EPA)* SBIR Project, "Photonic Crystal Slot Waveguide Spectrometer for Volatile Organic Compounds in Hazardous Pollutants in Air"
  Phase I, 3/2010-9/2010, **$70,000**
- **Principal Investigator**, *Defense Advanced Research Project Agency (DARPA)* SBIR Project, "E-O Polymer-based Bias-Free Highly-Linear Domain Inverted Directional Coupler"

  Phase II, 05/2009~05/2011, **$750,000**

  Phase I, 03/2008~09/2008, **$100,000**
- **Principal Investigator**, *Air Force Office of Scientific Research (AFOSR)* STTR Project "Ultra Compact Power Efficient Nano-photonic Waveguide Modulator using Functional Polymer on Silicon Platforms"

  Phase II, 11/2008~11/2010, **$750,000**

  Phase I, 09/2007~06/2008, **$100,000**
- **Principal Investigator**, *National Science Foundation (NSF)* STTR Project, "Fully Embedded Optical Interconnects based on Optical Bus Architecture for Large Size Printed Circuit Boards".

  Phase II, 08/2007~02/2010, **$500,000**

Journal Publications:

1. F. Ren, X-Y Wang, **A. X. Wang**, "Thermo-Optic Modulation of Plasmonic Bandgap on Metallic Photonic Crystal Slab," *Applied Physics Letters*, accepted
2. X. B. Xu, H. Li, Dihan Hasan, R. Ruoff, **A. X. Wang** and D. L. Fan, "Near-Field Enhanced Magnetic Plasmonic Bifunctional Nanotubes for Single Cell Bioanalysis", *Advanced Functional Materials*, doi: 10.1002/adfm.201203822 (2013).
3. X. Zhang, B-S Lee, C-Y Lin, **A. X. Wang**, and R. T. Chen, "Highly Linear, Broadband Optical Modulator Based on Electro-optic Polymer," *IEEE Journal of Photonics*, 4, 2214-2228 (2012)
4. Che-Yun Lin, Harish Subbaraman, Amir Hosseini, Liang Zhu, **Alan X. Wang**, and Ray T. Chen, "Silicon Nanomembrane Based Photonic Crystal Waveguide Array for Wavelength-Tunable True-Time-Delay Lines," *Applied Physics Letters*, 101, 051101 (2012)
5. **Alan X. Wang**, "The Right Choice for Optical Bus Interconnect: Metallic-Hollow-Core-Waveguides or Multimode Polymer Waveguides?" *Optical Engineering*, 51, 075401 (2012)

6. Xiaobin Xu, Dihan Hasan, Lei Wang, Swapnajit Chakravarty, Ray T. Chen, D. L. Fan, and **Alan X. Wang**, "Guided-Mode-Resonance-Coupled Plasmonic-Active SiO2 Nanotubes for Surface Enhanced Raman Spectroscopy", *Applied Physics Letters*, 100, 191114 (2012).

   Also appeared as May 21, 2012 issue of Virtual Journal of Nanoscale Science & Technology
7. Che-Yun Lin, **Alan X. Wang**, and Ray T. Chen, "Coupling loss minimization of slow light slotted photonic crystal waveguides using mode matching with continuous group index perturbation", *Optics Letters*, 37, 232-234 (2012)
8. **Alan X. Wang**, Che-Yun Lin, Beom Suk Lee, Xingyu Zhang, and Ray T. Chen, "High dynamic range electric field sensor for electromagnetic pulse detection," Optics Express, 19, 17372-17377 (2011)
9. Xinyuan Dou, **Alan X. Wang**, Xiaohui Lin, and Ray T. Chen, "Photolithography-free polymer optical waveguide arrays for optical backplane bus," Optics Express, 19, 14403-14410 (2011)
10. Beom Suk Lee, Che-Yun Lin, **Xiaolong Wang**, and Ray T. Chen, "Demonstration of a linearized traveling wave Y-fed directional coupler modulator based on electro-optic polymer," IEEE *J. Lightwave Technol*, 29, 1931-1936 (2011).
11. Wei-Cheng Lai, Swapnajit Chakravarty, **Xiaolong Wang**, Cheyun Lin, and Ray T. Chen, "On-Chip Near-Infrared Absorption Spectroscopy of Methane with a Photonic Crystal Slot Waveguide Spectrometer," *Optics Letters*, 36, 984-986 (2011)
12. Xiaohui Lin, Xinyuan Dou, **Xiaolong Wang**, and Ray T. Chen, "Nickel Electroplating for Nano Structure Mold Fabrication," *Journal of Nanoscience and Nanotechnology*, 11, 7006-7010 (2011)
13. **Xiaolong Wang**, Che-Yun Lin, Swapnajit Chakravarty, and Ray T. Chen, "Effective In-Device r_{33} of 735pm/V on Electro-Optic Polymer Infiltrated Silicon Photonic Crystal Slot Waveguide," *Optics Letters*,36, 882-884 (2011)
14. Wei-Cheng Lai, Swapnajit Chakravarty, **Xiaolong Wang**, Che-Yun Lin, and Ray T. Chen, "Photonic Crystal Slot Waveguide Absorption Spectrometer for On-Chip Near-Infrared Spectroscopy of Xylene in Water", *Applied Physics Letters*, 98, 023304 (2011)
15. Beom Suk Lee, Che-Yun Lin, **Xiaolong Wang,** Raluca Dinu, and Ray T. Chen, "Linearized Electro-Optic Polymer Modulators based on Two-Section Y-fed Directional Coupler," *Applied Optics*, Vol.49, no.33, 6485-6488 (2010)
16. **Xiaolong Wang**, Che-Yun Lin, Swapnajit Chakravarty,Beom Suk Lee, Wei-Cheng Lai, and Ray T. Chen, "Wideband Group Velocity Independent Coupling into Slow Light Silicon Photonic Crystal Waveguide," *Applied Physics Letters*, Vol.97, 183302 (2010)
17. Che-Yun Lin, **Xiaolong Wang**, Swapnajit Chakravarty, Weicheng Lai, Beom-Suk Lee, Jingdong Luo, Alex K-Y. Jen, Ray T. Chen, "Electro-optic polymer infiltrated silicon photonic crystal slot waveguide modulator with 23 dB slow light enhancement", *Applied Physics Letters*, Vol. 97, 093304 (2010)
18. Xinyuan Dou, **Xiaolong Wang**, Xiaohui Lin, David Z. Pan, and Ray T. Chen, "Highly Flexible Polymeric Optical Waveguide for Out-of-Plane Optical Interconnects," *Optics Express***,** Vol.18, No.15, 16227-16233 (2010)
19. **Xiaolong Wang**, Boem-Suk Lee, Che-Yun Lin, Dechang An, and Ray T. Chen, "Toward 120dB/Hz Spurious Free Dynamic Range: the Design and Experimental Works of Electro-Optic Polymer Linear Modulator based on Multiple-Domain Y-fed Directional Coupler," *IEEE Journal of Lightwave Technol.*, Vol.28, No.11, 1670-1676 (2010)

20. Xinyuan Dou, **Xiaolong Wang**, Haiyu Huang, Xiaohui Lin, and Ray T. Chen, Polymeric waveguides with embedded micro-mirrors formed by Metallic Hard Mold," *Optics Express*, Vol.18, No.1, pp.378-385 (2010)
21. Xinyuan Dou, Xiaonan Chen, Maggie Yihong Chen, **Xiaolong Wang**, Wei Jiang, Ray T. Chen, "Packaging consideration of two dimensional polymer-based photonic crystals for laser beam steering," *J. Nanosci. Nanotechnol.*, Vol.10, No.3, 1650-1655 (2010)
22. **Xiaolong Wang**, Swapnajit Chakravarty, Boem-Suk Lee, Che-Yun Lin, and Ray T. Chen, "Ultra-Efficient Control of Light Transmission through Photonic Potential Barrier Modulation," *Optics Letters*, Vol.34, No.20, pp.3202-3204 (2009)
23. Boem-Suk Lee, Che-Yun Lin, **Xiaolong Wang**, Jingdong Luo, Alex K.Y. Jen, and Ray T. Chen, "Bias-free electro-optic polymer based two-section Y-branch waveguide modulator with 22-dB linearity enhancement," *Optics Letters*, Vol.34, No.21, pp.3277-3279 (2009)
24. Xiaonan Chen, **Xiaolong Wang**, Swapnajit Chakravarty, Ray T. Chen, "Electrooptically-active Slow-light-enhanced Silicon Slot Photonic Crystal Waveguides," *Journal of Selected Topics in Quantum Electronics*, Vol.15, No.15, pp.1506-1509 (2009)
25. **Xiaolong Wang**, Wei Jiang, Li Wang, Hai Bi, and R. T. Chen, "Fully Embedded Board Level Optical Interconnects: From Waveguide Fabrication to Device Integration," *IEEE Journal of Lightwave Technol.*, Vol.26, No.2, pp.243-250 (2008)
26. **Xiaolong Wang**, Li Wang, Wei Jiang, and R. T. Chen, "51cm-long Hard-molded Waveguide Array with 150 GHz Bandwidth for Board Level Optical Interconnects", *Optics Letters*, Vol. 32, Issue 6, pp. 677-679 (2007)
27. **Xiaolong Wang**, Ray T. Chen, "Image Enhanced Polymer-based Multi-mode Interference Coupler Covering C- and L- Bands Using Deeply Etched Air Trenches," *Applied Physics Letters*, Vol.90, 111106 (2007)
28. **Xiaolong Wang**, Brie Howely, Maggie Chen, Ray T.Chen, "Phase Error Corrected 4-Bit True Time Delay Module Using Cascaded 2x2 Polymer Waveguide Switch Array," *Applied Optics*, Vol.46, no.3, pp.379-383 (2007)
29. Brie Howley, **Xiaolong Wang**, Maggie Chen, and Ray T. Chen, "Reconfigurable Delay Time Polymer Planar Lightwave Circuit for an X-band Phased-Array Antenna Demonstration," *IEEE Journal of Lightwave Technology*, vol. 25, no. 3, pp. 883-890, (2007)
30. **Xiaolong Wang**, Brie Howely, Maggie Chen, Ray T.Chen, "4x4 Non-blocking Polymeric Thermo-optic Switch Matrix using the Total Internal Reflection Effect," *IEEE Journal of Selected Topics in Quantum Electronics*, Vol.12, pp.997-1000, Sep/Oct (2006)
31. **Xiaolong Wang**, Brie Howley, Maggie Chen and Ray Chen, "Polarization-independent All-wave Polymer Based TIR Thermo-optic Switch," *IEEE Journal of Lightwave Technol*., Vol.24, pp.1558-1565 (2006)
32. **Xiaolong Wang**, Brie Howley, Maggie Y. Chen, and Ray T. Chen, "Crosstalk-Minimized Polymeric 2X2 Thermo-optic Switch," *IEEE Photonics Technology Letters*, Vol.18, pp.16-18, (2006)
33. Brie Howley, **Xiaolong Wang**, and Ray T. Chen, Yihong Chen, "Experimental evaluation of curved polymer waveguides with air trenches and offsets," *Journal of Applied Physics*, Vol.100, 023114 (2006)
34. Li Wang, **Xiaolong Wang**, Wei Jiang, Jinho Choi, Hai Bi, and Ray Chen, "45º polymer-based total internal reflection coupling mirrors for fully embedded intraboard guided wave optical interconnects," *Applied Physics Letters*, Vol.87, 141110, (2005)

35. Brie Howely, Yihong Chen, **Xiaolong Wang**, Qingjun Zhou, Zhong Shi, Yongqiang Jiang, and Ray T. Chen, "2-bit Reconfigurable True Time Delay Lines Using 2X2 Polymer Waveguide Switches," *IEEE Photonics Technology Letters*, Vol.17, No.9, pp.1944-1946 (2005)
36. Jingwei Liu, **Xiaolong Wang**, Shaowu Chen, and Jinzhong Yu, "Analyses of Relations between Modulating Area Structure and Switch Speed and Power Consumption of SOI Thermo-Optic Switch Based on Finite Element Method," Chinese Journal of Semiconductors, Vol.25 No.10, pp.1324-1330 (2004)
37. **Xiaolong Wang**, Qingfeng Yan, Jingwei Liu, Shaowu Chen and Jinzhong Yu, "SOI Waveguides Fabricated by Wet-etching Method," *Jounral of Chinese Semiconductors*, Vol.24, No.10, pp.1025-1029 (2003)
38. **Xiaolong Wang**, Jingwei Liu, Qingfeng Yan and Jinzhong Yu, "SOI Thermo-optic Modulator and Switch with Fast Response," *Chinese Optics Letters*, Vol.1, No.9, pp.527-528 (2003)
39. **Xiaolong Wang**, Yu Jinzhong, "The Latest Progress of Optical Waveguide Switches," *China Physics*, Vol.32, No.3, pp.165-170 (2003)
40. Yuanyuan Chen, Jinzhong Yu, **Xiaolong Wang**, Yanping Li, "Investigation of SOI optical Switch Loss and Speed," Chinese Photonic Technology, Vol.1, no.1, pp.15-19, (2003)
41. Jinzhong Yu, Qingfeng Yang, Jinsong Xia, **Xiaolong Wang**, **"**SOI (Silicon on Insulator) based integrated optoelectronics," *Journal of Functional Materials and Devices*, Vol.9 No.1, pp.1-7 (2003)
42. **Xiaolong Wang**, Jinzhong Yu, "Multimode Interference Couplers with different background refractive index," *Acta Photonica Sinica*, Vol.32, No.9, pp.1045-1048 (2002)
43. **Xiaolong Wang**, Jinzhong Yu, and Shaowu Chen, "Mode Analysis of SOI Waveguide with Trapezoidal Cross Section," *Chinese Optoelectronics/Laser*, Vol.13, No.11, pp.1120-1123 (2002)

Conference Papers & Presentations:

1. Fanghui Ren, Xiangyu Wang, **Alan Wang**, "Surface-Normal Plasmonic Modulation for Three-Dimensional Optical Interconnects," IEEE CLEO 2013, CM2F.7, San Jose, CA, June 9-14, 2013
2. Fanghui Ren, Jeremy Campbell, Dihan Hasan, Xiangyu Wang, Greg Rorrer, **Alan Wang**, "Bio-Inspired Plasmonic Sensors by Diatom Frustules," IEEE CLEO 2013, CTh3I.4, San Jose, CA, June 9-14, 2013
3. Dihan Hasan, and **Alan X. Wang**, "Enhanced Localized Surface Plasmonic Resonances in Dielectric Photonic Band-Gap Structures: Fabry-Perot Nanocavities & Photonic Crystal Slot Waveguides ," SPIE Photonics West conference, Paper 8632-3, San Francisco, Feb 2-7th, 2013
4. Fanghui Ren, Jeremy Campbell, Dihan Hasan, Xiangyu Wang, Gregory L. Rorrer, **Alan X. Wang**, "Surface-Enhanced Raman Scattering on Diatom Biosilica Photonic Crystals," SPIE Photonics West conference, Paper 8598-24, San Francisco, Feb 2-7th, 2013
5. **Alan X. Wang**, Ray T. Chen, and Donglei Fan, Che-Yun-Lin, Xiaobin Xu, Lei Wang, "Ultra-Efficient Nano-Photonic Devices using Hybrid Material Systems for Optical Communication and Sensing," **Invited Presentation**, IEEE Avionics, Fiber-Optics and Photonics Conference (AVFOP), Cocoa Beach, FL, September 11-13, 2012
6. Xiaohui Lin, Amir Hosseini, **Alan X. Wang**, and Ray T. Chen, "Reduced Surface Roughness with Improved Imprinting Technique for Polymer Optical Components," IEEE Photonics

Conference, Burlingame, CA, September 23-27th, 2012

7. C.-Y. Lin, A. Hosseini, H. Subbaraman, Z. Xue, **A. X. Wang**, R. T. Chen, "Wavelength-Tunable on-Chip True Time Delay Lines Based on Photonic Crystal Waveguides for X-Band Phased Array Antenna Applications," IEEE/OSA CLEO, CTu31.7, San Jose, CA, May 6-11, 2012
8. X. Zhang, B. Lee, C.-Y. Lin, **A. X. Wang**, A. Hosseini, R. T. Chen, "Highly Linear Electro-optic Polymer Based Traveling Wave MMI-fed Directional Coupler Modulator," IEEE/OSA CLEO, CF1A.6, San Jose, CA, May 6-11, 2012
9. X. Lin, X. Dou, A. Hosseini, **A. X. Wang**, and R. T. Chen, "Manufacturing of Board Level Waveguide Bus Using Hard Mold," IEEE Optical Interconnects Conference, WD2, Santa Fe, New Mexico, May 20-23, 2012
10. Xinyuan Dou, **Alan X. Wang**, Xiaohui Lin, and Ray T. Chen, "Manufacturable Polymeric Optical Waveguide based Bus Structures for Board Level Optical Interconnects," Proc. MRS Spring Meeting, 1270786, 2012
11. **Alan X. Wang**, "Evaluation of multimode optical waveguides for optical bus interconnects," SPIE Photonics West conference, Paper 8267-49, San Francisco, January 22-26, 2012
12. Xiaohui Lin, **Alan X. Wang**, Ray T. Chen, "Polymer optical waveguide based bi-directional optical bus architecture for high speed optical backplane," SPIE Photonics West conference, Paper 8267-7, San Francisco, January 22-26, 2012
13. Che-Yun Lin, **Alan X. Wang**, Xingyu Zhang, Beomsuk Lee, Ray T. Chen, "EO-polymer waveguide based high dynamic range EM wave sensors," Invited Presentation, SPIE Photonics West conference, Paper 8258-35, San Francisco, January 22-26, 2012
14. Xingyu Zhang, Beom-Suk Lee, Che-Yun Lin, **Alan X. Wang,** Amir Hosseini, Xiaohui Lin, Ray T. Chen, "Improved performance of traveling wave directional coupler modulator based on electro-optic polymer," SPIE Photonics West conference, Paper 8267-44, San Francisco, January 22-26, 2012
15. **Xiaolong Wang**, Che-Yun Lin, Swapnajit Chakravarty, Jingdong Luo, Alex K-Y. Jen, and Ray T. Chen, "Slow Light Enhanced E-O Polymer Nano-Photonic Modulator with Ultra-High Effective In-Device r_{33}," IEEE CLEO, Baltimore, MD, May 1-6, 2011
16. **Xiaolong Wang**, Beom-Suk Lee, Ray T. Chen, "Large Dynamic Range Electromagnetic Field Sensor based on Domain Inverted Electro-Optic Polymer Directional Coupler," **Invited Presentation**, SPIE Photonics West conference, RF and Millimeter-Wave Photonics (Conference 7936), San Francisco, January 22-27, 2011
17. Che-Yun Lin, **Xiaolong Wang**, Beomsuk Lee, Wei-Cheng Lai, Swapnajit Chakravarty, and Ray T. Chen, "Group velocity independent coupling into slow light photonic crystal waveguide on Silicon Nanophotonic Integrated Circuits," Proc. SPIE (2011).
18. **Xiaolong Wang**, Ray T. Chen, "Integration and Function Enhancements of Planar Lightwave Circuits (PLCs) for Optical Communication," **Plenary Session Presentation**, SPIE/COS Photonics Asia, China National Convention Center, Beijing, China, 18-21 October, 2010
19. **Xiaolong Wang**, Ray T. Chen, "Manufacturability of Intra- and Inter-chip Guided Wave Optical interconnects," **Invited Presentation**, The 9th International Conference on Optical Communications and Networks, Nanjing, China, 24-27 October, 2010
20. **Xiaolong Wang**, Xinyuan Dou, and Ray T. Chen, "Flexible polymer optical layer for board-level optical interconnects by highly durable metal imprinting method," SPIE Photonics West conference, Optoelectronic Interconnects and Component Integration X, 7607-26, San Francisco, January 24-28th, 2010

21. Che-Yun Lin, Beomsuk Lee, **Xiaolong Wang**, Ray T. Chen, Jingdong Luo, Alex K. Jen, "Ultra-compact silicon nanophotonic modulator based on electro-optic polymer infiltrated slot photonic crystal waveguide," SPIE Photonics West conference, Optoelectronic Interconnects and Component Integration X, 7607-48, San Francisco, January 24-28th, 2010
22. Beomsuk Lee, Che-Yun Lin, **Xiaolong Wang**, Ray T. Chen, "Bias-free Y-branch waveguide modulator based on domain-inverted modulation of electro-optic polymer," SPIE Photonics West conference, Optoelectronic Interconnects and Component Integration X, 7607-32, San Francisco, January 24-28th, 2010
23. Xinyuan Dou, **Xiaolong Wang**, Haiyu Huang, and Ray T. Chen, "Point-to-point waveguide array with buried mirrors for board-level optical interconnect," SPIE Photonics West conference, Optoelectronic Interconnects and Component Integration X, 7607-32, San Francisco, January 24-28th, 2010
24. **Xiaolong Wang**, Swapnajit Chakravarty, Boem Suk Lee, Cheyun Lin, Jingdong Luo, Alex K.Y Jen, Ray T. Chen, "Nano-Photonic Electro-Optic Polymer Modulator Based on Photonic Band Gap Engineering," **post-deadline paper** PDPC4, Integrated Photonics Research and Applications (IPRA) Topical Meeting/ Nanophotonics (NANO) Topical Meeting, Honolulu, HI, July 12-17, 2009
25. Xinyuan Dou, Xiaonan Chen, Maggie Yihong Chen, **Xiaolong** Wang, Wei Jiang, and Ray T. Chen, "Packaging consideration of two dimensional polymer-based photonic crystals for laser beam steering," Proc. SPIE, Vol. 7221, pp. 722104-1 (2009)
26. Beomsuk Lee, Cheyun Lin, **Xiaolong Wang**, Ray T. Chen, Jingdong Luo, and Alex K. Y. Jen, "Domain-Inversion-Equivalent EO Polymer based Y-fed Directional Coupler Modulator with High Linearity," IEEE/LEOS Winter Topical Meeting, 12-14 Jan 2009, Innsbruck, Austria (2009)
27. **Xiaolong Wang**, Chakravarty Swapnajit, Boem Suk Lee, Che-Yun Lin, and Chen R. T., "Electro-optic polymer based nanophotonic modulator with ultra-high efficiency", Avionics, Fiber-Optics and Phototonics and Photonics Technology Conference, 2009. AVFOP '09. IEEE, San Antonio, TX, (2009)
28. Xinyuan Dou, Xiaonan Chen, Maggie Yihong Chen, **Xiaolong Wang**, Wei Jiang, Ray T. Chen, "Vertically stacked square lattice photonic crystals for Large Angle Optical Beam Steering," IEEE/LEOS Winter Topical Meeting, 12-14 Jan 2009, Innsbruck, Austria (2009)
29. **Xiaolong Wang**, Ray T. Chen, "Recent progress on Polymer Photonics and Optical Interconnects," **Invited presentation**, Asia Optical Fiber Communication and Optoelectronic Exposition and Conference (AOE), Shanghai, China, October 31, 2008
30. **Xiaolong Wang**, Ray T. Chen, "Optical bus for intra- and inter-chip optical interconnects," IEEE LEOS 21th Annual Meeting, **Invited Presentation**, WM3, 9-13 November 2008, Newport Beach, California
31. **Xiaolong Wang**, Ray T. Chen, "Fully Embedded Optical Interconnects based on Optical Bus Architecture for Large Size Printed Circuit Boards," **Invited presentation**, SPIE Photonic West Conference, San Jose, CA, Jan 19-24, 2008
32. **Xiaolong Wang**, Ray T. Chen, "Image quality improved 1X8 multimode interference coupler," Proceedings of SPIE Vol.6475, 64751C (2007)
33. **Xiaolong Wang**, Brie Howley, Maggie Y.Chen, Panoutsopoulos Basile and Ray T. Chen, "Fully-integrated 4-bit True Time Delay Module using Polymer Optical Switches and Waveguide Delay Lines," paper presented in Integrated Photonics Research and Applications (IPRA) Topical Meeting/ Nanophotonics (NANO) Topical Meeting, Uncasville, CT, April

26-28, 2006

34. Brie Howley, **Xiaolong Wang**, Yihong Chen, and Ray T. Chen, "Integrated Polymer Optoelectronic Time Delay Device for an X-band Phased Array Antenna System," *Optoelectronic Integrated Circuits VIII, Proc. of SPIE*, Vol. 6124, 61240Z, (2006)
35. Maggie Yihong Chen, Brie Howley, **Xiaolong Wang**, Panoutsopoulos Basile, and Ray T. Chen, "2-D Scalable Optical Controlled Phased-Array Antenna System," *Nanophotonic Packaging, Proceedings of SPIE*, Vol. 6126, 61260I, (2006)
36. **Xiaolong Wang**, Brie Howley, Maggie Y. Chen, Qingjun Zhou, Ray T.Chen and Panoutsopoulos Basile, "Polymer Based Thermo-optic Switch for Optical True Time Delay," Proceedings of SPIE Vol.5728, pp.60-67 (2005)
37. Brie Howley, **Xiaolong Wang**, Qingjun Zhou, Yihong Chen, Ray T. Chen, "Polymer Waveguides and Thermo-Optic Switches for an Optical True Time Delay Phased Array Antenna ," *Proceedings of SPIE* ,Vol.5731,pp.12-19 (2005)
38. Li Wang, **Xiaolong Wang**, Jinho Choi, David Hass, Jerry Magera, and Ray T. Chen, " Low-loss, thermally stable waveguide with 45 ºmicromirrors fabricated by soft molding for fully embedded board-level optical interconnects," *Proceedings of SPIE*, Vol.5731, pp.87-93 (2005)
39. Ray T Chen, Li Wang, Jinho Choi, **Xiaolong Wang**; "Packaging efforts for inter- and intra-board level optical interconnects," *Lasers and Electro-Optics Society,* 2004. LEOS 2004. The 17th Annual Meeting of the IEEE ,Volume: 1 , Nov. 8-9, Pages:441 – 442 (2004)
40. Li Wang, Jinho Choi, **Xiaolong Wang**, Ray T. Chen, David Hass, and Jerry Magera, "Thin film optical waveguide and optoelectronic device integration for fully embedded board level optical interconnects," *Proc. SPIE Int. Soc. Opt. Eng*. 5556, 1 (2004)
41. Jinho Choi, Li Wang, **Xiaolong Wang**, D. Hass, J. Magera, R.T. Chen, "Performance evaluation of fully embedded board level optical interconnection ,Biophotonics/Optical Interconnects and VLSI Photonics/WBM Microcavities," 2004 Digest of the LEOS Summer Topical Meetings , 28-30 June Pages:9- 10 (2004)
42. Jinzhong Yu, **Xiaolong Wang**, Jingwei Liu, Qinfeng Yan, Jinsong Xia, Zhongchao Fan, Zhangtao Wang, Shaowu Chen, "MMI optical couplers and switches with SOI technology," Optoelectronics, Proceedings of the Sixth Chinese Symposium, Sep 12-14, page: 251-254, (2003)

Patents:

- **Alan X. Wang**, Ray T. Chen, "Photonic Crystal Band-Shifting Device for Dynamic Control of Light Transmission," pending U.S. patent
- **Alan X. Wang**, Gregory L. Rorrer, "Ultra-sensitive Surface-Enhanced Raman Scattering Substrates Patterned by Diatom Frustules," U.S. patent in preparation

Professional Services and Affiliations:

- Technical program review committee and technical program committee, IEEE International Microwave Symposium, Seattle, WA, 2013
- International Program Committee of PHOTOPTICS 2013 ("International Conference on Photonics, Optics and Laser Technology"), Barcelona, Spain, Feb 20-21st, 2013
- *Program committee member and Session Chair*, SPIE Photonics West conference, Optoelectronic Interconnects and Component Integration XI, San Francisco, January 22-27, 2011

- *Conference Chair*, PA105, SPIE/COS Photonics Asia, China National Convention Center, Beijing, China, 18-21 October 2010
- *Program committee member and Session Chair*, SPIE Photonics West conference, Optoelectronic Interconnects and Component Integration X, San Francisco, January 24-28th, 2010
- Reviewer, IEEE Journal of Photonics, PHOTOPTICS 2013
- Member of the Institute of Electrical and Electronics Engineers (IEEE), 2004-present
- Member of Optical Society of America (OSA), 2006-present
- Member of International Society for Optical Engineering (SPIE), 2005-present

Awards and Honors:

- World News report in Laser Focus World (Dec 2010) for the outstanding work to couple light into slow photonic devices
- R&D News report in *LIGHTWAVE Europe* (Jan./Feb.2006) for the outstanding work on reducing polymer optical switch cross talk
- Outstanding Master's Thesis Award from the Chinese Academy of Sciences, 2003
- Award of the Knowledge Creative Project of Chinese Academy of Sciences, 2001, 2002
- Scholarship for Excellent Junior Student, Tsinghua University, 1998
- Scholarship for Excellent Sophomore Student, Tsinghua University, 1997
- Scholarship for Excellent Freshman Student, Tsinghua University, 1996

More information:

U.S. Permanent Resident