

First Degree Innovation

INVITED PRESENTATIONS

1. "Topological optimization of nonlinear optical quantum wire networks," R. Lytel, S. Shafei, and MG Kuzyk, SPIE OP210-15, San Diego CA (2013).
2. "Computer System Scaling," Plenary Lecture, IEEE Workshop on Interconnects within High-speed Digital Systems, Santa Fe NM (May 2008).
3. "Interconnects for throughput computing and networking," with A. Krishnamoorthy et. al, IEEE Workshop on Interconnects within High-speed Digital Systems, Santa Fe NM (May 2004).
4. "Moore's law meets the genome: Panelist," Milken Institute Global Conference, Beverly Hills CA (April 2004).
5. "An interactive discussion of issues affecting faster cures: Panelist," Milken Institute Global Conference, Beverly Hills CA (April 2004).
6. "High-throughput computing via high-throughput R&D," AIP Industrial Physics Symposium, San Jose CA (Oct 2003).
7. "Distributed Knowledge Assembly," Genome Sequencing and Analysis Conference (GSAC) XV, Savannah, GA (Sept 2003).
8. "Optical and molecular technologies in modern computer systems," sixth ICONO conference on nonlinear optical materials and devices, Tucson AZ (2002).
9. "Physical and architectural limits for molecular-scale devices in high-performance computing systems," Spring meeting of the Materials Research Society, San Francisco CA (April 2001).
10. "Light matters: The use of photonics in computing environments," presented at the Xerox PARCforum, Feb 17, 2000.
11. "Opportunities for nanotechnology in high-performance computing systems," Materials Research Society Fall Meeting, Boston MA (Nov 1999).
12. "Prospects for free-space optical interconnects in computers," IEEE LEOS Annual Meeting, San Francisco, CA (Nov 1999).
13. "Optical interconnections in computing systems," Distinguished Lecture Series, Santa Barbara, CA (Nov 1999).
14. "Optical switching in high-performance computing systems," Optical Society of America Topical Meeting on Photonic Switching, Santa Barbara, CA (July 1999)
15. "Mesoscopic and nano-devices in computing and memory systems," First Annual DARPA P.I. Meeting on Moletronics, Reston, VA (July 1999)
16. "Critical requirements for optical interconnects in computer systems," SPIE Photonics West, San Jose, CA (January 1999)
17. "Packaging and applications of active polymer optical switching arrays", R. Lytel and G.F. Lipscomb, Critical Reviews of Optical Science and Technology, SPIE Symp. CR62, San Jose, CA (January 1996).
18. "Performance of Active Polymer Integrated Optics", 4th Pacific Polymer Conference, Kauai, Hawaii (December 1995).
19. "Packaging of Single-Mode Polymer Waveguide Devices", SPIE Symposium on Nonlinear Optics, San Diego, CA (July 1995).
20. "Fundamental Limits of Active Polymer Integrated Optics", 1995 Spring meeting, MRS, San Francisco, CA (April 1995).
21. "Integration of Polymers in Optoelectronic Devices", Plenary Lecture, ACS/OSA Symposium on Polymeric Thin Films for Photonic Applications, Washington, DC (Aug. 22, 1994).
22. "EO Polymer Materials and Devices: From Research to Reality", OSA Topical Meeting on Nonlinear Optics, Hawaii (July 25, 1994).
23. "Electro-optic polymer Devices: Physics and Applications", TMS 36th Electronic Materials Conference, Boulder, CO (June 23, 1994).
24. "External Modulation using EO Polymer Arrays in Digital Systems", Proc. SPIE OE-LASE (January 1994).
25. "Electro-optic Polymer Waveguide Arrays in Digital Systems", Proc. ICONO'1, Val Thorens (January 1994).
26. "Applications of Electro-optic Polymer Integrated Optic Devices", with G.F. Lipscomb and A.J. Ticknor, ACS/OSA Topical Meeting: Organic Thin Films for Photonic Applications, Toronto, Canada (October 8, 1993).
27. "Large-Scale Integration of Electro-optic Polymer Devices", ASM International Symposium on Opto-electronic Packaging and Interconnect Technology II, San Jose, CA (August 31, 1993).
28. "Datacom Applications of Electro-optic Polymer Devices", SPIE Symposium 2025, Nonlinear Optical Properties of Organic Materials VI, San Diego, CA (July 13, 1993).
29. "Parallel Optical Signals from a Single Laser Diode", with H. Fujimoto, Santa Fe Workshop on Interconnects within High-speed Digital Systems, Santa Fe, CA (May 24, 1993).
30. "Electro-optic Polymer Devices for Interconnects", with G.F. Lipscomb, Materials Research Society Spring Meeting, Symposium J, Organic Materials for Nonlinear Optical Applications", San Francisco, CA (April 16, 1993).

31. "Fundamental Limits of Electro-optic Polymer Devices", American Physical Society Spring Meeting, Symposium on Organic Solid State Devices, Seattle, WA (March 1993).
32. "Electro-optic Polymer Materials and Devices: The Fundamental Limits", SPIE OE-LASE '93 Symposium on Nonlinear Optical Properties of Advanced Materials, Los Angeles, CA (January 20, 1993).
33. "Optoelectronic Packaging Methodologies using EO Polymers", presented at the Defense Sciences Research Council summer workshop on Optical Arrays and Packaging, La Jolla, CA (July 17, 1992).
34. "Electro-optic Polymer Devices", R. Lytel, Materials Research Society Symposium on Electronic Packaging Materials Science IV₂, San Francisco, CA (April 30, 1992).
35. "Electro-optic Polymers: Realization of Practical Devices", Workshop on Organic Optoelectronic Materials, American Chemical Society, Monterey, CA (April 2, 1992).
36. "Electro-optic Polymer Waveguides: Toward Realization of Practical Devices", Distinguished Lecture Series, University of Southern California, Los Angeles, CA (February 14, 1992).
37. "Nonlinear Organic Electro-optic Devices-Advances in EO Polyimide Materials and Process", seventh annual DARPA Optics Review, Melbourne, FL (January 7, 1992).
38. "Electro-optic Polymers: Materials Requirements", AFOSR Nonlinear Optical Materials Review, Wright Research and Development Center, Dayton, OH (December 7, 1991).
39. "Materials Requirements for Electro-optic Polymers", Materials Research Society Symposium on Electrical, Optical, and Magnetic Properties of Organic Solid State Materials (December 2, 1991).
40. "Applications of Electro-optic Polymers to Optical Interconnects", invited lecture, IBM East Fishkill, NY (August 28, 1991).
41. "Materials Requirements for Electro-optic Polymers", R. Lytel, American Chemical Society National Meeting, Polymer Division, New York, NY (August 26, 1991).
42. "Organic Electro-optic Devices for Optical Interconnection", SPIE Symposium on Nonlinear Optics of Organic Materials (Symp. 1560), San Diego, CA (July, 1991).
43. "Applications of Electro-optic Polymers to Optical Interconnects", SPIE Symposium on Optical Enhancements to Electronic Computing (Symp. 1563), San Diego, CA (July, 1991).
44. "Photonic Large Scale Integration", R. Lytel and G.F. Lipscomb, Nonlinear Optics of Organic and Polymeric Systems and Photonic Devices Symposium, University of Pennsylvania (April 1991).
45. "Electro-optic Polymer Waveguides", American Chemical Society 25th Midwest Regional Meeting, Lawrence, Kansas (November 9, 1990).
46. "Nonlinear Organic Electro-optic Devices-Progress and New Directions", sixth annual DARPA Optics Review, Reston, VA (October 1990).
47. "Application of Electro-optic Polymer Waveguides to Optical Interconnects", Organic Materials for Nonlinear Optics II (OMNO), Royal Society of Chemistry, Oxford UK (September 1990).
48. "Applications of Photonic Materials", UCLA Workshop on Science and Applications of Photonic Materials, Los Angeles, CA (July 9, 1990).
49. "Electro-optic Polymer Waveguide Devices: Status and Outlook", AFOSR Nonlinear Optical Materials Review, National Academy of Sciences, Washington, DC (June 4, 1990).
50. "Nonlinear and Electro-optic Polymer Devices", Gordon Conference on Organic Thin Films, Ventura, CA (February 14, 1990).
51. "Electro-optic Polymer Waveguides: Status and Future", Golden Gate Polymer Symposium, IBM Almaden Research Center, Almaden, CA (November 1989).
52. "Electro-optic Polymer Waveguide Devices", Optical Society of America Annual Meeting, Orlando, FL (October, 1989).
53. "Electro-optic Polymer Waveguides-Status and Future", second annual AFOSR Nonlinear Optical Polymer Materials Review, Long Beach, CA (September, 1989).
54. "Nonlinear Organic Electro-optic Devices-Progress and New Directions", fifth annual DARPA Optics Review, Warrington, VA (August 1989).
55. "Photonics: A Promising New Technology for Tomorrow", National Press Club, Washington, DC (Nov. 15, 1988).
56. "Organic Integrated Optical Devices", 192nd Meeting, American Chemical Society, Los Angeles, CA (Sept. 26, 1988).
57. "Advances in Organic Integrated Optical Devices", Proc. Royal Society of Chemistry Optical Materials for Nonlinear Optics (OMNO) Conference, Oxford, U.K. (June 1988).
58. "Organic Integrated Optics: Fundamentals and Applications", American Chemical Society Nonlinear Optical Polymer Workshop, Virginia Beach (May 1988).
59. "Directions for Polymer Nonlinear Optics", AFOSR Nonlinear Materials Review, Washington, D.C. (April 19, 1988).
60. "Nonlinear Organic Electro-optic Devices", fourth annual DARPA Optics Review, Leesburg, VA (March 29, 1988).

61. "Recent Progress in Nonlinear Optical Devices Based Upon Liquid Crystal Polymers", National Materials Research Council, IBM Almaden Research Center (Feb. 16, 1988).
62. "Organic and Polymeric Materials for Laser Hardening Applications", JASON Committee on Sensor Hardening, La Jolla, CA (July, 1987).
63. "Organic and Polymeric Materials and Devices: An Overview of Current Progress", DARPA Materials Research Council, La Jolla, CA, 7/87.
64. "Nonlinear Organic Electro-optics Devices", third annual DARPA Optics Review, Leesburg, VA, (Feb. 10, 1987).
65. "Control of Light by Light via Third-Order Processes", U. of Pennsylvania Symposium on Nonlinear Optics, June, 1986.

CONTRIBUTED PRESENTATIONS

1. "Topological control of optical nonlinearities in quantum-confined systems," Shores Shafei, Rick Lytel, and Mark G. Kuzyk, CLEO San Jose, CA (2013).
2. "Nonlinear optics of quantum graphs," R. Lytel, S. Shafei, and MG Kuzyk, Proc SPIE 8474 (2012).
3. "Packaging of Single-mode Optical Waveguide Devices", R. Lytel, G.F. Lipscomb, and A.J. Ticknor, Proc. SPIE (July 1995).
4. "Manufacturable Integrated Optical Interconnect Networks for Electronic Systems", T. E. Van Eck, D. G. Girton, J. F. Valley, S. Ermer, G. F. Lipscomb, A. J. Ticknor, and R. Lytel, Annual Meeting IEEE/LEOS (1992).
5. "Thermally stable polyimide nonlinear optical materials and waveguide devices", T. E. Van Eck, D. G. Girton, J. F. Valley, D. L. Culbert, S. Ermer, M. A. Stiller, A. J. Ticknor, G. F. Lipscomb, and R. Lytel, Annual Meeting of the Optical Society of America (1992).
6. "Multi-level Electro-optic Polymer Waveguides", D.G. Girton, R. Lytel, and G.F. Lipscomb, Annual Meeting of the Optical Society of America (1992).
7. "Large-Scale Integration of Electro-optic Polymer Devices", R. Lytel, G.F. Lipscomb, A.J. Ticknor, and J.F. Valley, Topical Meeting on Nonlinear Optics, Optical Society of America, Maui, HI (1992).
8. "Multilevel Electro-optic Polymer Waveguide Structures", D.G. Girton, R. Lytel, and G.F. Lipscomb, Conference on Lasers and Electro-optics (CLEO), Technical Digest Vol. 12, paper JFB2 (1992).
9. "Electro-Optic Polyimide Thin Films for Integrated Photonic Interconnects on Silicon" , J.F. Valley, S.P. Ermer, D.G. Girton, J.W. Wu, G.F. Lipscomb, and R. Lytel, Integrated Photonics Research, New Orleans (April 15, 1992), session WB: Waveguide and Device Technology.
10. "CMOS-Compatible Interconnect With Poled Polymer Integrated Optic Switch", T. Van Eck, G.F. Lipscomb, A.J. Ticknor, J.F. Valley, and R. Lytel, Integrated Photonics Research, New Orleans (April 15, 1992), session WB: Waveguide and Device Technology.
11. "Transmission of Digital Signals in Electronic Systems with Electro-optic Polymer Waveguides and Switches", T.E. Van Eck, G.F. Lipscomb, A.J. Ticknor, and R. Lytel, IEEE LEOS Annual meeting, Nov. 1991, paper OE2.3.
12. "Poled Polyimides as Thermally Stable Electro-optic Materials", J.W. Wu, J. Valley, M. Stiller, S. Ermer, E. Binkley, J. Kenney, G.F. Lipscomb, and R. Lytel, Proc. Optical Society of America Annual Meeting, Nov. 1991, paper FQ4.
13. "Polymer-based Electro-optic Modulators", D.G. Girton, G.F. Lipscomb, and R. Lytel, Proc. Optical Society of America Annual Meeting, Nov. 1991, paper WD6.
14. "Characterization of Polymer Integrated Optical Devices", D.L. Culbert, S.P. Ermer, A.J. Ticknor, T.E. Van Eck, G.F. Lipscomb, and R. Lytel, Proc. OSA Annual Meeting, Nov. 1991, paper MC5.
15. "Nonlinear Absorption in a Strained InGaAs/GaAs MQW/nipi Structure", T.E. Van Eck, K.P. Aron, G.A. Hansen, and R. Lytel, paper TP12, IEEE/LEOS Nonlinear Optics, Kauai, HI (July 1990).
16. "Organic Polymer Electro-optic Filters and Shutters", J. Altman, K. Aron, and R. Lytel, SPIE Symposium on Nonlinear Optics and Sensor Protection, Orlando, FL (March 1989).
17. "Nonlinear Optical Properties of Strained Layer GaAs-InGaAs Multiple Quantum Wells", K. Aron, G. Hansen, R. Stone, W. Anderson, and R. Lytel, Proc. SPIE O-E Lase '88, Los Angeles, CA (January 1988).
18. "Nonlinear Optical Properties of Strained Layer GaAs-InGaAs Multiple Quantum Well Structures Using a Titanium Sapphire Laser Probe", K. Aron, G. Hansen, R. Stone, W. Anderson, and R. Lytel, 1987 International Laser Science Conference Technical Digest, Atlantic City, paper WE-2 (1987).
19. "Nonlinear Picosecond Response in Select Liquid Crystal Polymers", B.J. Sullivan, P. Elizondo, G.F. Lipscomb, and R. Lytel, Opt. Soc. Am. Annual Meeting, Seattle, WA, Oct., 1986.