Publications

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BOOK CHAPTERS

- A. J. Lowery, Chapter 12, "Photonic Simulation Tools" in *Optical Fiber Telecommunications IV-B: Systems and Impairments*, by Ivan Kaminow and Tingye Li (Academic Press, 2002, New Jersey)
- A. J. Lowery, Chapter 10, "WDM Systems Simulations" in *DWDM Network Designs and Engineering Solutions*", by Ashwin Gumast and Tony Anthony, (CISCO Press, 2003), pp. 303-323 (including software examples)
- Simulation Examples for "Optical Communications Essentials (Telecommunications)" by Gerd Keiser, McGraw-Hill Professional, 2003 (see www.vpiphotonics.com/VPIplayer for free downloads and simulator).
- G. Morthier and A. J. Lowery, "Modelling of DFB Laser Diodes", Chapter 7 in G. Guekos, Ed., *Photonic Devices for Telecommunications: How to Model and Measure*, (Springer, Berlin 1998). pp. 183-211
- A. J. Lowery, Chapter "Active Photonic Integrated Circuits" in *Advanced Simulation and Analysis of Optoelectronic Devices* (Springer, Berlin, 2004) (Ed: J. Piprek, University of California, USA)

SELECTED PATENTS

- Optical Transmission System (PCT, Aug 2006)
- Optical Transmission System (PCT, Aug 2007)
- Dispersion Compensator (US 6,882,772)
- Noise Suppression in Lightwave Communications Systems (US 6,711,309)
- Self-Tuned Mode-Locked Laser (US 5,509,022)
- one provisional patent (Logic Probe)

PRODUCTS

The web pages for www.vpiphotonics.com show the products I was responsible for (VPIplayer, VPItransmissionMaker and VPIcomponentMaker) while General Manager at VPIsystems, Melbourne (1996-2004).

VPIsystems was the result of a merger between Virtual Photonics Inc and BNeD Inc. Virtual Photonics Inc was founded by Dr Phil Gurney and Dr Arthur Lowery in March 1996. VPI has become the leading global supplier of Photonic Design Automation tools to the electronics industry.

PUBLISHED PAPERS to November 2008

1. L. B. Du and A. J. Lowery, " Improved nonlinearity precompensation for long-haul high-data-rate transmission using coherent optical OFDM," In press, Opt. Express (2008)

2. A. J. Lowery "Optical Orthogonal Frequency Division Multiplexing: the story so far....", **Keynote Speech**, International Symposium on Global Optical Infrastructure Technologies towards the Next Decades (A New Horizon of Innovations in Optical Communications Technologies), Wed 12th Nov. 2008, organised by NiCT, Tokyo, Japan.

3. A. J. Lowery "Electronic Dispersion Compensation and Optical OFDM", **Keynote Speech**, opening of Malaysia Photonics 2008, Kuala Lumpar, Malaysia, August 2008.

4. L. B. Du and A. J. Lowery, "Improving nonlinear precompensation in direct-detection optical OFDM communications systems," Presented at the European Conference on Optical Communications (ECOC), Brussels, Sept. 2008, paper P. 4.08.

5. Arthur Lowery, "Fiber nonlinearity and its compensation in direct-detection optical OFDM systems" (**Invited**) Workshop on multi-tone transmission techniques for optical networks, European Conference on Optical Communications (ECOC), Brussels, Sept. 2008

6. Hu Chen, L. B. Du and A. J. Lowery, "Fiber nonlinearity precompensation for long-haul links using direct-detection optical OFDM," Joint Opto-Electronics and Communications Conference (OECC) and the Australian Conference on Optical Fibre Technology (ACOFT), Sydney, July 2008. http://www.iceaustralia.com/OECC_ACOFT2008/index.html

7. L. B. Du and A. J. Lowery, "Fiber nonlinearity precompensation for long-haul links using direct-detection optical OFDM," Opt. Express 16, 6209-6215 (2008) http://www.opticsinfobase.org/abstract.cfm?URI=oe-16-9-6209

8. A. J. Lowery, "Optical OFDM," **Invited Talk**, Conference on Lasers and Electro-Optics (CLEO 2008), San Jose, May 2008, paper CWN1

9. Zuraidah Zan, Malin Premaratne and A. J. Lowery, " Laser RIN and linewidth requirements for direct detection optical OFDM," Conference on Lasers and Electro-Optics (CLEO 2008), San Jose, May 2008, paper CWN2

10. A. J. Lowery, "Improving sensitivity and spectral efficiency in direct-detection OFDM lightwave systems," Optical Fiber Telecommunications (OFC 2008), San Diego, paper OMM4

11. A. J. Lowery, "Amplified-spontaneous noise limit of optical OFDM lightwave systems," Opt. Express **16**, 860-865 (2008) http://www.opticsinfobase.org/abstract.cfm?URI=oe-16-2-860

12. B. J. C. Schmidt, A. J. Lowery, and J. Armstrong, "Experimental demonstrations of electronic dispersion compensation for long haul transmission using direct-detection optical OFDM," J. Lightwave Technology, Volume 26, Issue 1, Jan.1, 2008 Page(s):196 – 203

13. A. J. Lowery, S. Wang, and M. Premaratne, "Calculation of power limit due to fiber nonlinearity in optical OFDM systems," Opt. Express **15**, 13282-13287 (2007) http://www.opticsinfobase.org/abstract.cfm?URI=oe-15-20-13282

14. A. J. Lowery, "Fiber nonlinearity pre- and post-compensation for long-haul optical links using OFDM," Opt. Express **15**, 12965-12970 (2007) http://www.opticsinfobase.org/abstract.cfm?URI=oe-15-20-12965

15. A. J. Lowery, "Fiber nonlinearity mitigation in optical links that use OFDM for dispersion compensation," IEEE Photon. Technol. Lett. 1819, 1556-1558 (2007)

16. A. J. Lowery, "**Invited Tutorial**: Adaptation of orthogonal frequency division multiplexing, OFDM, to compensate impairments in optical transmission systems" European Conference on Optical Communications (ECOC), 2007, Berlin, Germany, paper 4.2.1.

17. A. J. Lowery, "Nonlinearity and its compensation in optical-OFDM systems", Workshop on Electronic Signal Processing for Transmission Impairment Mitigation: Future Challenges,

European Conference on Optical Communications (ECOC), 2007, Berlin, Germany, paper 4.2.1.

18. B. J. C. Schmidt, A. J. Lowery, and J. Armstrong, " Experimental demonstrations of 20 Gbit/s direct-detection optical OFDM and 12 Gbit/s with a colorless transmitter," in Optical Fiber Communication Conference and Exposition and The National Fiber Optic Engineers Conference, OSA Technical Digest Series (CD) (Optical Society of America, 2007), paper PDP18. http://www.opticsinfobase.org/abstract.cfm?URI=OFC-2007-PDP18 (**Postdeadline Paper**)

19. A. J. Lowery and J. Armstrong, "Dispersion compensation in long haul transmission systems, an orthogonal approach", **Invited paper**: Australian Conference on Optical Fibre Technology, *ACOFT* 2007 24-27, Melbourne, June 2007.

20. A. J. Lowery and J. Armstrong, "Orthogonal frequency division multiplexing for optical dispersion compensation," (**Invited Paper**) *Technical Digest of Optical Fibre Communication (OFC/NFOEC 2007)*, 25-29 March 2007, Anaheim, USA.

21. A. J. Lowery, L. B. Y. Du, and J. Armstrong, "Performance of optical OFDM in ultralong-haul WDM lightwave systems," J. Lightwave Technol. 25, 131-138 (2007).

22. L. B. Y. Du, A. J. Lowery and J. Armstrong , "WDM channel spacing in ultra long haul optical OFDM systems", Australian Conference on Optical Fibre Technology, *ACOFT* 2006, Melbourne, June 2006

23. A. J. Lowery and J. Armstrong , "Comparison of power-efficient optical orthogonal frequency division multiplexing transmission methods", Australian Conference on Optical Fibre Technology, *ACOFT* 2006, Melbourne, June 2006

24. A. J. Lowery and J. Armstrong, "Orthogonal-frequency-division multiplexing for dispersion compensation of long-haul optical systems," Opt. Express 14, 2079-2084 (2006) http://www.opticsinfobase.org/abstract.cfm?URI=oe-14-6-2079

25. J. Armstrong and A. J. Lowery, "Power efficient optical OFDM", Electronics Letters, Vol. 42, Issue 6, 16 March 2006, pp. 370 – 372

26. Dallaali, M.A.; Premaratne, M.; Lowery, A.J., **"**Cost optimal strategies for placement of amplifiers in a point to point optical link" Numerical Simulation of Semiconductor Optoelectronic Devices, 2006 International Conference on, Sept. 2006 Page(s): pages 69 - 70

27. Gopalakrishnapillai, B.S.; Lee, K.L.; Lowery, A.J.; Premaratne, M.; Shinada, S.; Wada, N.; Miyazaki, T.; Nirmalathas, A.; Lim, C., "Experimental demonstration of a simple time-of-flight rangefinder based on semiconductor optical amplifier" Optical Fiber Communication Conference, 2006 and the 2006 National Fiber Optic Engineers Conference 5-10 March 2006 Page(s):3 pp

28. Lowery, A.J., Liang Du, Armstrong, J., **"**Orthogonal frequency division multiplexing for adaptive dispersion compensation in long haul WDM systems"**,** Optical Fiber Communication Conference, 2006 and the 2006 National Fiber Optic Engineers Conference 5-10 March 2006 Page(s):1 – 3 (**Postdeadline Paper**)

29. Armstrong, Jean; Schmidt, Brendon J. C.; Kalra, Dhruv; Suraweera, H. A.; Lowery, Arthur J.; "Performance of asymmetrically clipped optical OFDM in AWGN for an intensity modulated direct detection system"**,** Global Telecommunications Conference, 2006. GLOBECOM '06. IEEE, Nov. 27 2006-Dec. 1 2006 Page(s):1 - 5

30. M. Premaratne and A. J. Lowery, "Semiclassical analysis of the impact of noise in SOA-based optical pulse delay discriminator." IEEE J. Special Topics in Quantum Electronics, 2006.

31. A. J. Lowery and J. Armstrong, “10 Gbit/s multimode fiber link using power-efficient orthogonal-frequency-division multiplexing”, Optics Express. Vol. 13(25), Dec 2005 http://www.opticsexpress.org/abstract.cfm?URI=OPEX-13-25-10003

32. A. J. Lowery and M. Premaratne, “Programmed wavelength-hopping semiconductor laser," IEEE Lasers and Electro-Optics Society (LEOS) 2005 Meeting, Sydney, Australia, paper ThK6, Oct 27th 2005.

33. A. J. Lowery and M. Premaratne, “Active photonic circuits and biophotonics and Monash University, Australia,” IEEE Lasers and Electro-Optics Society (LEOS) 2005 Meeting, Sydney, Australia, paper CARP9, Sun Oct 23rd 2005

34. M. Premaratne and A. J. Lowery , "Analytical characterization of SOA-based optical pulse delay discriminator," *J. Lightwave Technology*, vol. 23(9), pp.2778-2787, September 2005

35. A. J. Lowery , “Performance predictions and improvements for optical serrodyne comb generators,” *J. Lightwave Technology*, vol. 23(8), pp.2371-2379, August 2005

36. A. J. Lowery and M. Premaratne, "Design and simulation of a simple laser rangefinder using a semiconductor optical amplifier-detector," Opt. Express 13 (10), 3647-3652 (2005), http://www.opticsexpress.org/abstract.cfm?URI=OPEX-13-10-3647

37. Malin Premaratne, Erosha Premaratne and Arthur James Lowery, “ The photon transport equation for turbid biological media with spatially varying isotropic refractive index”, Accepted for publication by Optics Express (Optical Society of America), Jan. 2005 http://www.opticsexpress.org/abstract.cfm?URI=OPEX-13-2-389

38. Arthur James Lowery and Malin Premaratne, “Reduced component count optical delay discriminator using a semiconductor optical amplifier-detector”, Optics Express (Optical Society of America), vol. 13, 1, pp. 290-295, 2005. http://www.opticsexpress.org/abstract.cfm?URI=OPEX-13-1-290

39. André Richter, Igor Koltchanov and Arthur Lowery “Photonic design automation of optical communication systems”, Asia Pacific Optical Communications Conference, 7-11th November, Beijing, China, 2004

40. Arthur J Lowery, Eugene Myslivets, Jerry Wood, “Efficient Simulation of Electronic Dispersion Compensation for 10 Gbps Single-Mode Links” (Presented at the Australian Conference on Optical Fibre Technology, Canberra, July 5-8, 2004.)

41. Arthur J Lowery, “Effect of Laser Intensity and Frequency Noise on an Optical Signal Processing Circuit”. (Presented at the Australian Conference on Optical Fibre Technology, Canberra, July 5-8, 2004.)

42. Arthur J Lowery, “Efficient Simulation of Microwave Photonic Systems”. (Presented at the Australian Conference on Optical Fibre Technology, Canberra, July 5-8, 2004.)

43. Arthur J Lowery and Don F Hewitt, “Improving Performance of Red-Shift Wavelength Converters”. (Presented at the Australian Conference on Optical Fibre Technology, Canberra, July 5-8, 2004.)

44. A. J. Lowery, "Free take-home virtual laboratories using professional simulation software", Presentation EMD2, Education and Training in Photonics (ETOP'03), Oct 6-8, 2003, Tucson, Arizona (organized by the Optical Society of America, available on CD-ROM)

45. I. Poloyko, A. Khilo, E. Myslivets, V. Volkov, I. Koltchanov, A. Richter, A. Lowery, "Photonic Design Automation of Raman-amplified Systems" Technical Proceedings of National Fiber Optics Engineers Conference, 7-11 September 2003, Orlando, FL, USA, pp. 192-201

46. Arthur Lowery, Konstantine Kuzmin, Vasily Volkov, Igor Koltchanov, Steven Gemelos, "Efficient design of coarse WDM systems" Technical Proceedings of National Fiber Optics Engineers Conference, 7-11 September 2003, Orlando, FL, USA, pp. 208-217

47. André Richter, Richard Devatine, Igor Koltchanov, Arthur Lowery, Dmitry Khomchenko, Dmitry Yevseyenko, Peter Moar, "Virtual product prototyping of Erbium doped fiber amplifiers for applications in dense WDM systems", National Fiber Optic Engineers Conference 2002, Dallas TX, Technical Proceedings pp. 1245-1252, September 15-19, 2002.

48. André Richter, Michael Dazert, Igor Koltchanov, Eugene Myslivets, Arthur Lowery, "Performance degradations in high-speed (+40Gbit/s) transmission systems due to Polarization Mode Dispersion", National Fiber Optic Engineers Conference 2002, Dallas TX, Technical Proceedings pp. 626-633, September 15-19, 2002.

49. Tony Martin and Arthur Lowery, "Systems performance predictions for lossy ring-resonator dispersion compensators for WDM", National Fiber Optic Engineers Conference 2002, Dallas TX, Technical Proceedings pp. 1771- 1781, September 15-19, 2002.

50. A. Richter, A. J. Lowery, and P. Wildhagen, "Estimation of BER in the presence of timing jitter in WDM transmission systems using RZ modulation formats" presented at National Fiber Optic Engineers Conference, Baltimore, MD, Paper C5-2, Jul 8-12 2001, pp. 485-490 (880-888)

51. Olaf Lenzmann, Arthur J Lowery, and P. Harshavardhana, "Software tools for the analysis and design of optical components, systems and networks", Annual Review of Communications, Volume 54, 2001, pp.485-490 (International Engineering Consortium, Chicago, IL, 2001)

52. S. D. Dods and A. J. Lowery, "Temporal statistics of crosstalk-induced errors in WDM optical networks", Technical Proceedings of the National Fiber Optic Engineers Conference 2001, Baltimore MD, July 81-12 2001, (published by Telcordia), pp. 876-879

53. Don F. Hewitt and Arthur J. Lowery, "Unexpected Limits on Digital QAM Cable Access Systems Due to Four-Wave Mixing", Technical Proceedings of the National Fiber Optic Engineers Conference 2001, Baltimore MD, July 8-12 2001, (published by Telcordia), pp. 1145-1150

54. A. J. Lowery, O. Lenzmann, I. Koltchanov, R. Moosburger, R. Freund, A. Richter, S. Georgi, D. Breuer, and H. Hamster, "Multiple signal representation simulation of photonic devices, systems, and networks" *IEEE J. Selected Topics in Quantum Electronics*, vol. 6, 2, pp. 282-96, 2000

55. A. J. Lowery, "'Phase portraits' for characterizing advanced lasers", Technical Digest of Optical Fiber Communications 2000 (OFC'2000), San Diego, CA, (published by the Optical Society of America) Paper TuJ-1, pp. 125-127

56. A. J. Lowery, "System challenges drive component choices WDM optical communications" *Laser Focus World*, suppl. issue, April 2000, pp. 23-6, 2000.

57. R. Freund, I. Koltchanov, A. Richter, and A. J. Lowery, "A new modeling approach for hybrid (Raman/EDF) amplified dense WDM transmission systems" presented at European Conf. Optical Communications, Munich, Germany, *proceedings of workshop 'Modelling and design of optical networks and systems'*, 2000.

58. A. J. Lowery, P. C. R. Gurney, "270-km 10 Gbit/s WDM dispersion compensation using a chirped AWGM" presented at OFC/IOOC'99. Optical Fiber Communication Conference and the International Conference on Integrated Optics and Optical Fiber Communications (Cat. No.99CH36322). IEEE. Part vol. 4, 1999, pp. 74-6, vol. 4. Piscataway, NJ, USA., 1999

59. M. F. C. Stephens, A. Lowery, R. V. Penty and I. H. White, "All-optical regeneration and wavelength conversion in an integrated semiconductor optical amplifier/distributed feedback laser", Technical Digest of Optical Fiber Communications 1999 (OFC'99), San Diego, CA, (published by the Optical Society of America) Paper TuJ-1, pp. 125-127

60. E. Tangdiongga, R. J. W. Jonker, H. de Waardt, I. T. Monroy, T. Gyselings, G. Morthier, R. Baets, A. J. Lowery, "Complete assessment of crosstalk reduction in WDM networks by phase scrambling" presented at 25th European Conference on Optical Communication. ECOC '99 Conference. Soc. Electr. Electron. Part vol. 2, 1999, pp. 210-11 vol. 2. Paris, France, 1999.

61. M. Premaratne, A. J. Lowery, "Wavelength conversion performance of fibre-grating external-cavity semiconductor lasers" presented at Proceedings ACOFT '99. 24th Australian Conference on Optical Fibre Technology. co-located with AOS'99, the Australian Optical Society Annual Conference. IREE Soc. 1999, pp. 4, Milsons Point, NSW, Australia, 1999.

62. M. Premaratne, A. J. Lowery, "Nearly degenerate four-wave mixing in fibre-grating external-cavity semiconductor lasers" presented at Proceedings ACOFT '99. 24th Australian Conference on Optical Fibre Technology. co-located with AOS'99, the Australian Optical Society Annual Conference. IREE Soc. 1999, p. 4, Milsons Point, NSW, Australia, 1999.

63. R. D. T. Lauder, H. Gan, A. J. Lowery, "RF-noise-tone suppression in QPSK transmission with unisolated Fabry-Perot lasers" presented at 1999 Digest of the LEOS Summer Topical Meetings: Nanostructures and Quantum Dots/WDM Components/VCSELs and Microcavaties/RF Photonics for CATV and HFC Systems (Cat. No. 99TH8455). IEEE. 1999, pp. IV19-20. Piscataway, NJ, USA, 1999.

64. A. J. Lowery, P. C. R. Gurney, "Comparison of optical processing techniques for optical microwave signal generation" *IEEE Transactions on Microwave Theory & Techniques*, vol. 46, 2, pp. 142-50, 1998.

65. A. J. Lowery, P. C. R. Gurney, "Two simulators for photonic computer-aided design" Applied Optics, vol. 37, 26, pp. 6066-77, 1998.

66. W. T. Wu, A. J. Lowery, "Efficient multiwavelength dynamic model for erbium-doped fiber amplifier" *IEEE Journal of Quantum Electronics*, vol. 34, 8, pp. 1325-31, 1998.

67. M. Premaratne, A. J. Lowery, "Modulation resonance enhancement in SCH quantum-well lasers with an external Bragg reflector" *IEEE Journal of Quantum Electronics*, vol. 34, 4, pp. 716-28, 1998.

68. H-B Gan, A. J. Lowery and R. Lauder, "Inexpensive virtual-optical isolator for customer access network", Australian Conference on Optical Fibre Technology, (ACOFT'98), Melbourne, VIC, Jul 5-8 1998, pp.113-116 (ISBN 0 909 394 458)

69. D. Novak, G. H. Smith, A. J. Lowery, H. F. Liu, R. B. Waterhouse, "Millimetre-wave fibre wireless transmission systems with reduced effects of fibre chromatic dispersion" *Optical & Quantum Electronics*, vol. 30, 11-12, pp. 1021-31, 1998.

70. Hong-Bing Gan, A. J. Lowery, R. D. T. Lauder, "Suppression of RF noise tones caused by Rayleigh backscatter in to an unisolated laser using audio-frequency external optical-phase modulation" *IEEE Photonics Technology Letters*, vol. 10, 12, pp. 1778-80, 1998.

71. M. J. L. Cahill, G. J. Pendock, M. A. Summerfield, A. J. Lowery, D. D. Sampson, "Optimum optical amplifier location in spectrum-sliced WDM passive optical networks for customer access" presented at OFC '98. Optical Fiber Communication Conference and Exhibit. Technical Digest. Conference Edition. 1998 OSA Technical Digest Series Vol.2 (IEEE Cat. No.98CH36177). Opt. Soc. America. 1998, pp. 403-4. Washington, DC, USA., 1998.

72. M. J. L. Cahill, G.J. Pendock, M. A. Summerfield, A. J. Lowery, D.D. Sampson, "Effect of amplifier location on path loss in spectrum-sliced WDM links for access networks", Proceedings of the Asia-Pacific Conference on Communications 1997, Sydney, Australia, ISBN 0 909394 44 X, (IREE, Australia), Session TuE, pp. 445-447

73. A. J. Lowery, P. C. R. Gurney, "Computer-aided design of photonic devices and systems" (Invited Paper) Technical Digest. 2nd Optoelectronics and Communications Conference. OECC '97 Organizing Committee. 1997, pp.260-261. Seoul, South Korea, 1997. (ISBN: 89 9500 X93420)

74. G. H. Smith, D. Novak, A. J. Lowery, "Broadband millimetre-wave fibre-wireless system using electrical and optical SSB modulation" presented at Proceedings APCC'97. Third Asia-Pacific Conference on Communications. Incorporating. ACOFT (Australian Conference on Optical Fibre Technology). ATNAC (Australian Telecommunication Networks and Applications Conference). IREE Soc. Part v

75. G. H. Smith, D. Novak, C. Lim, A. J. Lowery, "Millimetre-wave signal generation using a novel frequency multiplication technique" presented at Proceedings APCC'97. Third Asia-Pacific Conference on Communications. Incorporating. ACOFT (Australian Conference on

Optical Fibre Technology). ATNAC (Australian Telecommunication Networks and Applications Conference). IREE Soc. Part vol. 2, pp. 697-701 vol. 2. Milsons Point, NSW, Australia, 1997.

76. M. Premaratne, A. J. Lowery, Z. Ahmed, D. Novak, "Modeling noise and modulation performance of fiber grating external cavity lasers" presented at IEEE. IEEE Journal of Selected Topics in Quantum Electronics, vol. 3, no. 2, April 1997, pp. 290-303. USA., 1997.

77. S. Ogita, A. J. Lowery, R. S. Tucker, "Influence of asymmetric nonlinear gain on the transient intensities of longitudinal modes in long wavelength Fabry-Perot laser diodes" *IEEE Journal of Quantum Electronics*, vol. 33, 2, pp. 198-210, 1997.

78. L. V. T. Nguyen, A. J. Lowery, D. Novak, "Large- and small-signal dynamic behavior of high-speed dual-polarization quantum-well semiconductor lasers" presented at IEEE. IEEE Journal of Selected Topics in Quantum Electronics, vol. 3, no. 2, April 1997, pp. 279-89. USA., 1997.

79. A. J. Lowery, "Semiconductor device and lightwave system performance modelling" presented at Optical Fiber Communications, Invited Paper, Dallas, USA, 1997.

80. A. J. Lowery, "Computer-aided photonics design" IEEE Spectrum, vol. 34, 4, pp. 26-31, 1997.

81. A. J. Lowery, P. C. R. Gurney, "Computer-aided design of photonic devices and systems" presented at Technical Digest. 2nd Optoelectronics and Communications Conference. OECC '97 Organizing Committee. 1997, pp. 260-1. Seoul, South Korea, 1997.

82. A. J. Keating, A. J. Lowery, "Wavelength stabilization in packet-switched WDM networks" *J. Lightwave Technology*, vol. 15, 1, pp. 76-85, 1997.

83. P. C. R. Gurney, A. J. Lowery, "Simulation of laser sources for millimeter-wave signal generation" presented at SPIE-Int. Soc. Opt. Eng. Proceedings of SPIE - the International Society for Optical Engineering, vol. 2994, 1997, pp. 493-503. USA., 1997.

84. Y. C. Chan, M. Premaratne, A. J. Lowery, "Semiconductor laser linewidth from the transmission-line laser model" *IEE Proceedings Optoelectronics*, vol. 144, 4, pp. 246-52, 1997.

85. M. J. L. Cahill, G. J. Pendock, M. A. Summerfield, A. J. Lowery, D. D. Sampson, "Effect of amplifier location on path loss in spectrum-sliced WDM links for access networks" presented at Proceedings APCC'97. Third Asia-Pacific Conference on Communications. Incorporating. ACOFT (Australian Conference on Optical Fibre Technology). ATNAC (Australian Telecommunication Networks and Applications Conference). IREE Soc. Part vol.1, pp. 445-9 vol. 1. Milsons Point, NSW, Australia, 1997.

86. M. Premaratne, A. J. Lowery, "Design of single-mode high-efficiency fibre grating external cavity lasers" presented at ACOFT '96 Proceedings. 21st Australian Conference on Optical Fibre Technology. IREE Soc. 1996, pp.181-4. Milsons Point, NSW, Australia., 1996.

87. A. J. Lowery, P. C. R. Gurney, X. H. Wang, L. V. T. Nguyen, Y. C. Chan, M. Premaratne, "Time-domain simulation of photonic devices, circuits and systems" SPIE-Int. Soc. Opt. Eng. Proceedings of SPIE - the International Society for Optical Engineering, vol. 2693, 1996, pp. 624-35. USA., 1996.

88. L. V. T. Nguyen, M. J. L. Cahill, A. J. Lowery, D. Novak, P. C. R. Gurney, D. D. Sampson, S. Dong-Sun, "Effects of carrier-induced modal intermodulation on dynamic spectral characteristics of multimode Fabry-Perot lasers" *Optical & Quantum Electronics*, vol. 28, 8, pp. 1067-88, 1996.

89. L. V. T. Nguyen, A. J. Lowery, R. S. Tucker, D. Novak, "Signal-routing model for arrayed-waveguide grating multiplexers" presented at ACOFT '96 Proceedings. 21st Australian Conference on Optical Fibre Technology. IREE Soc. 1996, pp. 169-72. Milsons Point, NSW, Australia, 1996.

90. L. V. T. Nguyen, A. J. Lowery, D. Novak, and P. C. R. Gurney, "Dynamics of polarisation asymmetry in dual-polarisation SQW lasers" presented at ACOFT '96 Proceedings. 21st Australian Conference on Optical Fibre Technology. IREE Soc. 1996, pp. 173-6. Milsons Point, NSW, Australia, 1996.

91. B. Jonsson, A. J. Lowery, H. Olesen, B. Tromborg, "Instabilities and nonlinear L-I characteristics in complex-coupled DFB lasers with antiphase gain and index gratings" *IEEE Journal of Quantum Electronics*, vol. 32, 5, pp. 839-50, 1996.

92. P. C. Gurney, A. J. Lowery, "Educational - Optoelectronic, Photonic and Advanced Laser Simulator (OPALS): a computer-aided learning package for photonic devices and systems" presented at Institute of Physics: Education and Training in Optics, Telford, U.K., 1996.

93. N. Akhmediev, W. Krolikowski, A. J. Lowery, "Influence of the Raman-effect on solitons in optical fibres" *Optics Communications*, vol. 131, 260-266, 1996.

94. L. V. T. Nguyen, A. J. Lowery, P. C. R. Gurney, D. Novak, C. N. Murtonen, "Efficient material-gain models for the transmission-line laser model" *International Journal of Numerical Modelling-Electronic Networks Devices & Fields*, vol. 8, 5, pp. 315-30, 1995.

95. L. V. T. Ngugen, A. J. Lowery, P. C. R. Gurney, D. Novak, "Spectral study of a 1.55 μm multimode FP semiconductor laser using the transmission-line laser model" *Optical & Quantum Electronics*, vol. 27, 7, pp. 663-78, 1995.

96. L. V. T. Nguyen, A. J. Lowery, P. C. R. Gurney, D. Novak, "A time-domain model for high-speed quantum-well lasers including carrier transport effects" *IEEE Journal of Selected Topics in Quantum Electronics*, vol. 1, 2, pp. 494-504, 1995.

97. N. Onodera, A. J. Lowery, R. S. Tucker, "700 GHz optical pulse packet generation from etalon controlled mode-locked semiconductor laser" presented at International Workshop on Femtosecond Technology, FST'95, Tsukuba, Japan, 1995.

98. S. Ogita, A. J. Lowery, R. S. Tucker, "Estimation of the nonlinear gain coefficient in FP laser diodes from the transient intensity change of longitudinal modes" Extended Abstracts of the 56th Autumn Meeting of the Japan Society for Applied Physics. Paper 26p-D-14. Japan, 1995, pp. 839.

99. L. V. T. Nguyen, A. J. Lowery, D. Novak, "Effects of carrier transport on the performance of quantum-well lasers" presented at 20th Australian Conference on Optical Fibre Technology (ACOFT '95). Proceedings. IREE Soc. 1995, pp. 228-31. Milsons Point, NSW, Australia, 1995.

100. C. N. Murtonen, A. J. Lowery, "Multiport devices in transmission-line models of lumped electronic circuits" *Electronic Letters*, vol. 31, 1120-121, 1995.

101. Z. Lu, A. J. Lowery, Z. Ahmed, "Locking bandwidth of actively mode-locked semiconductor lasers using fiber-grating external cavities" *IEEE Journal of Quantum Electronics*, vol. 31, 11, pp. 1998-2005, 1995.

102. A. J. Lowery, P. C. Gurney, "Issues in Engineering Mathematics" G. F. Fitz-Gerald, Ed. Melbourne: RMIT, 1995, pp. 17-27.

103. A. J. Lowery, B. Jonsson, H. Olesen, D. Novak, "Mode instabilities in complex-coupled DFB semiconductor lasers" *Electronics Letters*, vol. 31, 1, pp. 40-1, 1995.

104. A. J. Lowery, H. Olesen, G. Morthier, P. Verhoeve, R. Baets, J. Buus, D. McDonald, D. D. Marcenac, "A proposal for standardized parameters for semiconductor lasers" *International Journal of Optoelectronics*, vol. 10, 5, pp. 347-55, 1995.

105. G. L. Koay, A. J. Lowery, R. S. Tucker, T. Higashi, S. Ogita, H. Soda, "Chaos suppression by digital modulation in lasers with feedback" presented at Fifth OptoElectronics Conference (OEC'94), Chiba, Japan, 1995.

106. A. J. Keating, A. J. Lowery, "Wavelength stabilization in WDM packet-switched networks" presented at OFC '95 Optical Fiber Communication. Summaries of Papers Presented at the Conference on Optical Fiber Communication. Vol. 8. 1995 Technical Digest Series. Postconference Edition. Opt. Soc. America. 1995, pp. 204-5. Washington, DC, USA., 1

107. K. Guan Lim, A. J. Lowery, R. S. Tucker, T. Higashi, S. Ogita, H. Soda, "Data-rate dependence of suppression of reflection-induced intensity noise in Fabry-Perot semiconductor lasers" *IEEE Journal of Quantum Electronics*, vol. 31, 10, pp. 1835-40, 1995.

108. M. A. Summerfield, J. P. R. Lacey, A. J. Lowery, R. S. Tucker, "All-optical TDM to WDM conversion in a semiconductor optical amplifier" *Electronics Letters*, vol. 30, 3, pp. 255-6, 1994.

109. J. P. R. Lacey, M. V. Chan, R. S. Tucker, A. J. Lowery, M. A. Summerfield, "All-optical WDM to TDM transmultiplexer" *Electronics Letters*, vol. 30, 19, pp. 1612-13, 1994.

110. J. P. R. Lacey, M. A. Summerfield, R. S. Tucker, A. J. Lowery, "All-optical transmultiplexers" presented at 19th Australian Conference on Optical Fibre Technology (ACOFT '94) Proceedings. IREE Soc. 1994, pp. 37-40. Edgecliff, NSW, Australia, 1994.

111. A. J. Lowery and P. C. R. Gurney, "Improving pulses from 2-contact self-pulsating DFB semiconductor lasers" presented at 14th IEEE International Semiconductor Laser Conference (Cat. No.94CH3379-5). IEEE. 1994, pp. 103-4. New York, NY, USA., 1994.

112. P. C. R. Gurney, A. J. Lowery, "Dynamics of an all-optical clock recovery system" presented at 19th Australian Conference on Optical Fibre Technology (ACOFT '94) Proceedings. IREE Soc. 1994, pp. 302-5. Edgecliff, NSW, Australia, 1994.

113. P. C. R. Gurney, A. J. Lowery, "OPALS-a new computer aided learning package for photonics" presented at 1994 IEEE First International Conference on Multi-Media Engineering Education Proceedings (Cat. No.94TH0672-6). IEEE. 1994, pp. 115-23. New York, NY, USA., 1994.

114. A. J. Lowery, P. C. Gurney, Y. C. Chan, "OPALS - An Optoelectronic, Photonic and Advanced Laser Simulator" presented at EU's COST-240 Workshop, Nice, France, 1994.

115. A. J. Lowery, D. Novak, "Performance comparison of gain-coupled and index-coupled DFB semiconductor lasers" *IEEE Journal of Quantum Electronics*, vol. 30, 9, pp. 2051-63, 1994.

116. A. J. Lowery, H. Olesen, "Dynamics of mode-instabilities in quarter-wave-shifted DFB semiconductor lasers" *Electronics Letters*, vol. 30, 12, pp. 965-7, 1994.

117. J. P. R. Lacey, M. A. Summerfield, R. S. Tucker, A. J. Lowery, "All-optical transmultiplexers" presented at 19th Australian Conference on Optical Fibre Technology (ACOFT '94) Proceedings. IREE Soc. 1994, pp. 37-40. Edgecliff, NSW, Australia, 1994.

118. A. J. Keating, A. J. Lowery, "Characterisation of a wavelength stabilisation scheme for packet-switched WDM-networks" presented at 19th Australian Conference on Optical Fibre Technology (ACOFT '94) Proceedings. IREE Soc. 1994, pp. 138-41. Edgecliff, NSW, Australia, 1994.

119. P. C. Gurney, A. J. Lowery, "OPALS - A new photonic CAL package" presented at Conference on Multi-Media in Engineering Education, Melbourne, Australia, 1994.

120. Y. C. Chan and A. J. Lowery, "Deterministic spectrum simulation using the transmission line laser model" *Electronics Letters*, vol. 30, 2, pp. 134-6, 1994.

121. R. Ait-Sadi, A. J. Lowery, B. Tuck, "Two-dimensional temperature modelling of DH laser diodes using the transmission-line modelling (TLM) method" IEE Proceedings-A-*Science Measurement & Technology*, vol. 141, 1, pp. 7-14, 1994.

122. L. Zhai, A. J. Lowery, Z. Ahmed, "Diffraction grating model for transmission-line laser model of actively mode-locked semiconductor lasers" *IEE Proceedings Optoelectronics*, vol. 141, 1, pp. 21-6, 1994.

123. M. A. Summerfield, J. P. R. Lacey, A. J. Lowery, R. S. Tucker, "All-optical TDM to WDM conversion in a semiconductor optical amplifier" *Electronics Letters*, vol. 30, 3, pp. 255-6, 1994.

124. P. C. R. Gurney, A. J. Lowery, C. N. Murtonen, "A photonic CAD package" presented at 18th Australian Conference on Optical Fibre Technology (ACOFT-18'93) Proceedings. Instn. Radio & Electron. Eng. Australia. 1993, pp. 277-80. Edgecliff, NSW, Australia, 1993.

125. L. Zhai, A. J. Lowery, Z. Ahmed, "Detuning characteristics of mode-locked semiconductor lasers with a chirped fibre-grating external cavity" presented at 18th Australian Conference on Optical Fibre Technology (ACOFT-18'93) Proceedings. Instn. Radio & Electron. Eng. Australia. 1993, pp. 193-6. Edgecliff, NSW, Australia, 1993.

126. N. Onodera, A. J. Lowery, L. Zhai, Z. Ahmed, R. S. Tucker, "Frequency multiplication in actively mode-locked semiconductor lasers" *Applied Physics Letters*, vol. 62, 12, pp. 1329-31, 1993.

127. D. Novak, A. J. Lowery, "Up to 15dB improvement in second harmonic distortion in complex-coupled DFB semiconductor lasers" *Electronics Letters*, vol. 29, 22, pp. 1954-6, 1993.

128. L. V. T. Nguyen, A. J. Lowery, and D. Novak, "Quantum-well material gain model for the transmission-line laser model" presented at 18th Australian Conference on Optical Fibre Technology (ACOFT-18'93) Proceedings. Instn. Radio & Electron. Eng. Australia. 1993, pp. 336-9. Edgecliff, NSW, Australia, 1993

129. C. N. Murtonen, A. J. Lowery, "Dynamic link-line impedance selection in transmission line models of lumped electronic circuits" *Electronics Letters*, vol. 29, 16, pp. 1486-8, 1993.

130. A. J. Lowery, "Design of stable mode-locked semiconductor lasers" presented at SPIE International Symposium on Lasers, Sensors, and Applications, Los Angeles. Invited paper, 1993

131. A. J. Lowery, "Numerical Modelling of Photonic Systems" presented at Symposium on Issues in Enginering Mathematics, RMIT, Melbourne, Australia, 1993.

132. A. J. Lowery, D. Novak, "Enhanced modulation bandwidth in gain-coupled DFB lasers" presented at CLEO'93, Baltimore, USA, 1993.

133. A. J. Lowery, "Numerical modelling of photonic systems" presented at the Symposium on Issues in Engineering Mathematics, RMIT University, Melbourne, 9th June 1993.

134. A. J. Lowery and D. Novak, "Enhanced maximum intrinsic modulation bandwidth of complex-coupled DFB semiconductor lasers" *Electronics Letters*, vol. 29, 5, pp. 461-3, 1993.

135. A. J. Lowery, "Dynamics of SHB-induced mode instabilities in uniform DFB semiconductor lasers" *Electronics Letters*, vol. 29, 21, pp. 1852-4, 1993.

136. A. J. Lowery, L. Zhai, Z. Ahmed, N. Onodera, and R. S. Tucker, "Numerical design of mode-locked semiconductor lasers" presented at Proceedings of SPIE - the International Society for Optical Engineering, vol. 1861, OE/LASE'93, pp.84-95. USA., 1993 (Invited Paper)

137. A. J. Lowery, D. Novak, "Spatial hole burning induced chirp in complex-coupled DFB semiconductor lasers" presented at ECOC '93. 19th European Conference on Optical Communication Proceedings. Swiss Electrotech. Assoc. (SEV). 1993, pp. 225-8, vol. 2. Zurich, Switzerland, 1993.

138. G. L. Koay, A. J. Lowery, and R. S. Tucker, "Effect of optical feedback on short-haul lightwave systems using Fabry-Perot lasers" presented at 18th Australian Conference on Optical Fibre Technology (ACOFT-18'93) Proceedings. Instn. Radio & Electron. Eng. Australia. 1993, pp. 97-100. Edgecliff, NSW, Australia, 1993.

139. A. J. Keating and A. J. Lowery, "Fast wavelength detection technique for multi-wavelength photonic packet networks" *Electronics Letters*, vol. 29, 19, pp. 1705-6, 1993.

140. Y. C. Chan and A. J. Lowery, "Deterministic spectrum simulation using the transmission line laser model" presented at 18th Australian Conference on Optical Fibre Technology (ACOFT-18'93) Proceedings. Instn. Radio & Electron. Eng. Australia. 1993, pp. 332-5. Edgecliff, NSW, Australia, 1993.

141. Z. Ahmed, L. Zhai, A. J. Lowery, N. Onodera, and R. S. Tucker, "Locking bandwidth of actively mode-locked semiconductor lasers" *IEEE Journal of Quantum Electronics*, vol. 29, 6, pp. 1714-21, 1993.

142. A. J. Lowery and D. F. Hewitt, "Large-signal dynamic model for gain-coupled DFB lasers based on the transmission-line laser model" *Electronics Letters*, vol. 28, pp. 1959-60, 1992.

143. L. Zhai, A. J. Lowery, Z. Ahmed, N. Onodera, R. S. Tucker, "Locking bandwidth of mode-locked semiconductor lasers" *Electronics Letters*, vol. 28, 6, pp. 545-6, 1992.

144. N. Onodera, A. J. Lowery, L. Zhai, Z. Ahmed, R. S. Tucker, "Demonstration of frequency multiplication in external-cavity mode-locked semiconductor lasers" presented at ACOFT'92, Paper 'Lasers 1'. 1992.

145. A. J. Lowery, Z. Ahmed, L. Zhai, N. Onodera, R. S. Tucker, "Locking range of harmonically-driven mode-locked semiconductor lasers" in Digest of Technical Papers of the IEEE/LEOS Conference on Lasers and Electro-Optics (CLEO'92). Anaheim, California. Paper JThB6. Presented by Arthur Lowery, 1992.

146. A. J. Lowery, "A two-port bilateral model for semiconductor lasers" *IEEE Journal of Quantum Electronics*, vol. 28, 1, pp. 82-92, 1992.

147. A. J. Lowery, "Transmission-line laser modelling of semiconductor laser amplified optical communications systems" IEE Proceedings-*J. Optoelectronics*, vol. 139, 3, pp. 180-8, 1992.

148. A. J. Lowery, "Eye closure due to spatial hole-burning dynamics in lambda/4-shifted DFB lasers" *Electronics Letters*, vol. 28, 16, pp. 1548-50, 1992.

149. A. J. Lowery, A. Keating, C. N. Murtonen, "Modeling the static and dynamic behavior of quarter-wave-shifted DFB lasers" *IEEE Journal of Quantum Electronics*, vol. 28, 9, pp. 1874-83, 1992.

150. A. J. Lowery and D. F. Hewitt, "Large-signal dynamic model for gain-coupled DFB lasers based on the transmission-line laser model" *Electronics Letters*, vol. 28, 21, pp. 1959-60, 1992.

151. A. J. Lowery, "Large-signal effective alpha factor of complex-coupled DFB semiconductor lasers" *Electronics Letters*, vol. 28, 25, pp. 2295-7, 1992.

152. A. J. Lowery, "Comparison between two recent large-signal dynamic DFB laser models" IEE Proceedings-*J. Optoelectronics*, vol. 139, 6, pp. 402-6, 1992.

153. A. Keating, A. J. Lowery, "Transmitter wavelength stabilisation in multi-wavelength packet networks" presented at ACOFT'92, 1992.

154. R. M. Fortenberry, A. J. Lowery, R. S. Tucker, "Up to 16 dB improvement in detected voltage using two-section semiconductor optical amplifier detector" *Electronics Letters*, vol. 28, 5, pp. 474-6, 1992.

155. R. A. Desai, A. J. Lowery, C. Christopoulos, P. Naylor, J. M. V. Blanshard, K. Gregson, "Computer modelling of microwave cooking using the transmission-line model" IEE Proceedings-A-*Science Measurement & Technology*, vol. 139, 1, pp. 30-8, 1992.

156. Z. Ahmed, R. S. Tucker, L. Zhai, A. J. Lowery, N. Onodera, "Effect of cavity length on the locking bandwidth of high repetition rate mode-locked semiconductor lasers" presented at technical digest of the 13th IEEE Conference on Semiconductor Lasers, Takumatsu, Japan, 1992.

157. C. N. Murtonen, A. J. Lowery, "Lightwave systems modelling using the transmission line laser model" presented at 16th Australian Conference on Optical Fibre Technology (ACOFT-16 '91) Proceedings. Inst. Radio Electron. Eng. Australia. 1991, pp. 145-8. Edgecliff, NSW, Australia, 1991.

158. I. W. Marshall, A. J. Lowery, P. D. Constantine, D. J. Cooper, D. Elton, "Optimization of packaged, actively mode-locked 1.5- um InGaAsP diode laser for >10 Gb/s OTDM transmission systems" presented at OSA Proceedings on Picosecond Electronics and Optoelectronics. Vol. 9. Proceedings of the Topical Meeting. Opt. Soc. America. 1991, pp. 181-4, Washington, DC, USA., 1991.

159. A. J. Lowery, R. Fortenberry, R. S. Tucker, "Improved detector response of dual-function semiconductor optical amplifier/detector" in Proceedings of the Australian Conference on Optical Fibre Technology. Adelaide (post-deadline paper). 4 printed pages. Presented by Rance Fortenberry, 1991.

160. A. J. Lowery, N. Onodera, R. S. Tucker, "Wavelength jitter in actively mode-locked semiconductor lasers" in Digest of Technical Papers of the IEEE/LEOS Conference on Lasers and Electro-Optics (CLEO'91). Baltimore. Paper CTuL3, 1991, pp. 122-123.

161. A. J. Lowery, "Integrated mode-locked laser design with a distributed-Bragg reflector" IEE Proceedings-*J Optoelectronics*, vol. 138, 1, pp. 39-46, 1991.

162. A. J. Lowery, I. W. Marshall, "Numerical simulations of 1.5 μm actively mode-locked semiconductor lasers including dispersive elements and chirp" *IEEE Journal of Quantum Electronics*, vol. 27, 8, pp. 1981-9, 1991.

163. A. J. Lowery, N. Onodera, R. S. Tucker, "Stability and spectral behavior of grating-controlled actively mode-locked lasers" *IEEE Journal of Quantum Electronics*, vol. 27, 11, pp. 2422-30, 1991.

164. A. J. Keating, A. J. Lowery, "Characterisation and modelling of tunable DBR lasers" presented at 16th Australian Conference on Optical Fibre Technology (ACOFT-16 '91) Proceedings. Inst. Radio Electron. Eng. Australia. 1991, pp. 378-81. Edgecliff, NSW, Australia, 1991.

165. R. Fortenberry, A. J. Lowery, W. L. Ha, R. S. Tucker, "Photonic packet switch using semiconductor optical amplifier gates" *Electronics Letters*, vol. 27, 14, pp. 1305-7, 1991

166. R. Fortenberry, A. J. Lowery, W. L. Ha, and R. S. Tucker, "Optical packet switch using semiconductor optical amplifier gates" presented at IOOC-ECOC '91. 17th European Conference on Optical Communication ECOC '91. 8th International Conference on Integrated Optics and Optical Fibre Communication IOOC '91. SEE. 1991, pp. 93-6, vol. 1. Valbonne, France, 1991.

167. L. S. Fock, R. S. Tucker, and A. J. Lowery, "Linearization of analogue modulated semiconductor laser by feedforward compensation" in Digest of Technical Papers of the IEEE/LEOS Conference on Lasers and Electro-Optics (CLEO'91). Baltimore. Paper CThF1, 1991, pp. 378-379.

168. L. Zhai, Z. Ahmed, A. J. Lowery, N. Onodera, and R. S. Tucker, "Stability range of harmonically mode-locked semiconductor lasers" presented at 16th Australian Conference on Optical Fibre Technology (ACOFT-16 '91) Proceedings. Inst. Radio Electron. Eng. Australia. 1991, pp.374-7. Edgecliff, NSW, Australia., 1991.

169. A. Zaheer, N. Onodera, R. S. Tucker, A. J. Lowery, "Auto- and cross-correlation measurements in high repetition rate mode-locked semiconductor lasers" presented at 16th Australian Conference on Optical Fibre Technology (ACOFT-16 '91) Proceedings. Inst. Radio Electron. Eng. Australia. 1991, pp.370-3. Edgecliff, NSW, Australia., 1991.

170. N. Onodera, A. J. Lowery, R. S. Tucker, "Cyclic wavelength jitter in actively mode-locked semiconductor lasers" *Electronics Letters*, vol. 27, 3, pp. 220-2, 1991.

171. N. Onodera, A. J. Lowery, R. S. Tucker, "Frequency halving in harmonically-driven mode-locked semiconductor lasers" *Electronics Letters*, vol. 27, 12, pp. 1053-4, 1991.

172. N. Onodera, A. J. Lowery, A. Zaheer, C. N. Murtonen, and R. S. Tucker, "Asymmetric crosscorrelation from actively mode-locked semiconductor laser" *Electronics Letters*, vol. 27, 21, pp. 1982-4, 1991.

173. N. Onodera, Z. Ahmed, R. S. Tucker, A. J. Lowery, "Stability of harmonically driven mode-locked semiconductor lasers" *Applied Physics Letters*, vol. 59, 27, pp. 3527-9, 1991.

174. R. Scaramuzza and A. J. Lowery, "Hybrid symmetrical condensed node for the TLM method" *Electronics Letters*, vol. 26, 23, pp. 1947-9, 1990.

175. A. J. Lowery, "Transmission-line modelling of semiconductor lasers: the transmission-line laser model" *International Journal of Numerical Modelling*, 2, pp. 249-265, 1990.

176. A. J. Lowery, "Computer-aided design of photonic circuits and systems" in Proceedings of the Australian Conference on Optical Fibre Technology. Sydney, 1990, pp. 213-216.

177. A. J. Lowery, N. Onodera, and R. S. Tucker, "Pulsewidth and stability of actively mode-locked semiconductor lasers" in Proceedings of the Australian Conference on Optical Fibre Technology (ACOFT). Sydney, 1990.

178. A. J. Lowery, "An integrated mode-locked laser design" in Digest of Technical papers of the IEEE/LEOS Conference on Lasers and Electro-Optics (CLEO'90). Anaheim, California. Paper CThI45, 1990, pp. 412-413.

179. A. J. Lowery, "Transmission-Line Modelling of Optical Devices and Systems" in Technical Digest of the IEEE Colloquium on Modelling of Optoelectronic Devices. London. Paper 13, 1990, pp. 13/1-13/4.

180. A. J. Lowery, I. W. Marshall, "Stabilisation of mode-locked pulses using travelling-wave semiconductor laser amplifier" *Electronics Letters*, vol. 26, 2, pp. 104-6, 1990.

181. A. J. Lowery, "Time-resolved chirp in mode-locked semiconductor lasers" *Electronics Letters*, vol. 26, 13, pp. 939-40, 1990.

182. A. J. Lowery, "Amplified spontaneous emission in semiconductor laser amplifiers: validity of the transmission-line laser model" IEE Proceedings-*J. Optoelectronics*, vol. 137, 4, pp. 241-7, 1990.

183. A. J. Lowery, "New dynamic model for multimode chirp in DFB semiconductor lasers" IEE Proceedings-*J. Optoelectronics*, vol. 137, 5, pp. 293-300, 1990.

184. A. J. Lowery, "A qualitative comparison between two semiconductor laser amplifier equivalent circuit models" *IEEE Journal of Quantum Electronics*, vol. 26, 8, pp. 1369-75, 1990.

185. R. Ait-Sadi, A. J. Lowery, B. Tuck, "Combined fine-coarse mesh transmission-line modelling method for diffusion problems" *International Journal of Numerical Modelling-Electronic Networks Devices & Fields*, vol. 3, 2, pp. 111-26, 1990.

186. A. J. Lowery, "Requirements of models of amplifiers" in Technical Digest of the IEE Colloquium on Optical Amplifiers for Communications, London. Paper 18, 1989, pp. 18/1-18/4

187. A. J. Lowery and I. W. Marshall, "Experimental and modelled results from a TWLA boosted mode-locked semiconductor laser" in Proceedings of the European Quantum Electronics Conference, Dresden. Presented by Ian Marshall, August 1989.

188. A. J. Lowery, "A new time-domain model for active mode-locking in dispersive-external-cavity semiconductor lasers" Accepted for the Sino-British Joint Meeting on Optical Fibre Communications. Paper accepted but meeting cancelled owing to 'political instability', 1989.

189. A. J. Lowery, "Pulse compression mechanisms in semiconductor laser amplifiers" IEE Proceedings-*J Optoelectronics*, vol. 136, 3, pp. 141-6, 1989.

190. A. J. Lowery, "Cyclic three-phase amplitude jitter in mode-locked semiconductor lasers" *Electronics Letters*, vol. 25, 12, pp. 799-800, 1989.

191. A. J. Lowery, "New dynamic multimode model for external cavity semiconductor lasers" IEE Proceedings-*J Optoelectronics*, vol. 136, 4, pp. 229-37, 1989.

192. A. J. Lowery, "New time-domain model for active mode locking, based on the transmission line laser model" IEE Proceedings-*J Optoelectronics*, vol. 136, 5, pp. 264-72, 1989.

193. A. J. Lowery, "Dynamic modelling of distributed-feedback lasers using scattering matrices" *Electronics Letters*, vol. 25, 19, pp. 1307-8, 1989.

194. A. J. Lowery, "Modelling spectral effects of dynamic saturation in semiconductor laser amplifiers using the transmission-line laser model" IEE Proceedings-*J Optoelectronics*, vol. 136, 6, pp. 320-4, 1989.

195. A. J. Lowery, "Requirements for models of semiconductor optical amplifiers" in IEE Colloquium on 'Optical Amplifiers for Communications' (Digest No.119), IEE, 1989, pp.18/1-4. London, UK., 1989.

196. A. J. Lowery, "Transmission-line modelling of semiconductor lasers: the transmission-line laser model" *International Journal of Numerical Modelling-Electronic Networks Devices & Fields*, vol. 2, 4, pp. 249-65, 1989.

197. A. J. Lowery, "Explanation and modelling of pulse compression and broadening in travelling-wave laser amplifiers" *Electronic Letters*, 24, pp. 1125-1126, 1988.

198. A. J. Lowery, "New inline wideband dynamic semiconductor laser amplifier model" *IEE Proceedings-J Optoelectronics*, vol. 135, 3, pp. 242-50, 1988.

199. A. J. Lowery, "A comparison between Fabry-Perot and travelling wave laser amplifiers in an 8 Gbps repeatered optical system using a time domain model" *J. Physics D-Applied Physics*, vol.21, no.10S, 14 Oct. 1988, pp.177-9.

200. A. J. Lowery, "A study of the static and multigigabit dynamic effects of gain spectra carrier dependence in semiconductor lasers using a transmission-line laser model" *IEEE Journal of Quantum Electronics*, vol. 24, 12, pp. 2376-85, 1988.

201. A. J. Lowery, "A new time-domain model for spontaneous emission in semiconductor lasers and its use in predicting their transient response" *International Journal of Numerical Modelling-Electronic Networks Devices & Fields*, vol. 1, 3, pp. 153-64, 1988.

202. A. J. Lowery, "Modelling ultra-short pulses (less than the cavity transit time) in semiconductor laser amplifiers" *International Journal of Optoelectronics*, vol. 3, 6, pp. 497-508, 1988.

203. A. J. Lowery, "New wideband dynamic semiconductor laser amplifier model" *Presented at ECOSSA, Birmingham, England*, March 1988.

204. A. J. Lowery, "A model for picosecond dynamic chirp based on the transmission-line laser model" *IEE Proceedings-J Optoelectronics*, vol. 135, 5, pp. 126-132, 1988.

205. A. J. Lowery, "New dynamic semiconductor laser model based on the transmission-line modelling method" *IEE Proceedings-J Optoelectronics*, vol. 134, 5, pp. 281-9, 1987.

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Alcatel SEL AG, Research Center COM, Heinrich Hertz Institute, T-Systems Nova, France Telecom R&D, VPIsystems', University Polytechnica de Valencia, Alcatel , Source: IST-project IST-2000-28657 TOPRATE; CIT COST 266 & IST-OPTIMIST workshop, Budapest, Feb. 4, 2003, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

7. Title: "Improvement of System Performance in Nx40-Gb/s WDM Transmission Using Alternate Polarizations", Authors: A. Hodzic, B. Konrad, K. Petermann, Organization: Technical University Berlin, Source: IEEE Photonics Technology Letters, vol. 15, no. 1, Jan. 2003, pp. 153-155, VPIsystems' Products used: VPItransmissionMaker™

8. Title: "Comparison of 10/40/160 Gb/s/ch based DWDM transmission systems with constant system capacity", Authors: A. Hodzic, M. Winter, B. Konrad, S. Randel, K. Petermann, Organization: Technical University Berlin, Source: 4.ITG-Fachtagung "Photonische Netze", Leipzig, Germany, May 2003, pp. 119-124, VPIsystems' Products used: VPItransmissionMaker™

9. Title: "Optimale Faserdispersion in Optischen Nx160 Gb/s WDM-Übertragungssystemen", Authors: B. Konrad, A. Hodzic, S. Randel, K. Petermann, Organization: Technical University Berlin, Source: 4.ITG-Fachtagung "Photonische Netze", Leipzig, Germany, May 2003, pp. 131-136, VPIsystems' Products used: VPItransmissionMaker™, Title: "Comparison of engineering scenarios for N x 160 Gb/s transmission systems", Authors: B. Cuenot, Organization: France Telecom R&D, Source: IEEE Photonics Technology Letters, vol. 15, no. 7, June 2003, pp. 864-866, VPIsystems' Products used: VPItransmissionMaker™

10. Title: "An investigation of different Raman amplification configurations in 160 Gbit/s transmission", Authors: Z. Xu, K. Rottwitt, P. Jeppesen, Organization: Research Center COM (DTU), Source: CLEO 2003, Munich, Germany, paper CL6-3-FRI, June 2003, VPIsystems' Products used: VPItransmissionMaker™

11. Title: "Optimized Filtering for 40-Gb/s/Ch-based DWDM Transmission Systems Over Standard Single-Mode Fiber", Authors: A. Hodzic, M. Winter, B. Konrad, S. Randel, K. Petermann, Organization: Technical University Berlin, Source: IEEE Photonics Technology Letters, vol. 15, no. 7, July 2003, pp. 1002-1004, VPIsystems' Products used: VPItransmissionMaker™

12. Title: "All optical flip flops using directly coupled semiconductor optical amplifiers", Authors: A.-D. McAulay, Organization: Lehigh University, Source: Annual Meeting of The International Society for Optical Engineering, SPIE 2003, Aug. 2003, San Diego, VPIsystems' Products used: VPItransmissionMaker™

13. Title: "Chromatic-Dispersion-Insensitive PMD Monitoring For NRZ Data Based on Clock Power Measurement Using a Narrowband Notch Filter", Authors: C. Yu, Y. Wang, T. Luo, Z. Pan, S. M. R. Motaghian Nezam, A. Sahin, L.-S. Yan, A. E. Willner, Organization: University of Southern California, Source: ECOC'03, Rimini, Italy, Sep. 2003, paper Tu4.2.3, VPIsystems' Products used: VPItransmissionMaker™

14. Title: "Multiple-Wavelength Hard-Limiting Receiver for Reducing MAI in a 2-D Time-Wavelength OCDMA System", Authors: P. Ebrahimi, D. Gurkan, A. B. Sahin, D. Starodubov, L. S. Yan, A. E. Willner, Organization: University of Southern California, Source: ECOC'03, Rimini, Italy, Sep. 2003, paper Th1.5.3, VPIsystems' Products used: VPItransmissionMaker™

15. Title: "Phase Encoded Orthogonal Codes (PE-OOC) for Optical CDMA", Authors: N. G. Tarhuni, T. O. Korhonen, E. Mutafungwa, Organization: Helsinki University of Technology, Finland, Source: submitted to 2003 Finnish Signal Processing Symposium, May 2003, VPIsystems' Products used: VPItransmissionMaker™

16. Title: "Design and Performance of Optical Vestigial Sideband (VSB) Filters for 40 Gbit/s Modulated Systems", Author: Don F. Hewitt, Organization: Australian Photonics Cooperative Research Centre, The University of Melbourne, Source: COIN/ACOFT, 13-17

July, 2003, Melbourne, Australia, paper TuB3-4, VPIsystems' Products used: VPItransmissionMaker™

17. Title: "Power Level Optimization of 40 Gbit/s DWDM Systems with Hybrid Raman/EDFA Amplification", Authors: Yang Jing Wen, Sarah D. Dods, and Rodney S. Tucker Organization: Australian Photonics Cooperative Research Centre, The University of Melbourne, Source: COIN/ACOFT, 13-17 July, 2003, Melbourne, Australia, paper TuB3-5, VPIsystems' Products used: VPItransmissionMaker™

18. Title: "Novel scheme for increasing wavelength drift tolerance of an optical filter using nonlinear harmonic SCM optical signals", Authors: Tae-Il Chae, Jou-Won Kim, Hyuk-Jae Lee and Yong Hyub Won, Organization: Information and Communications University, Daejeon, Korea, Source: COIN/ACOFT, 13-17 July, 2003, Melbourne, Australia, paper WeB1-3, VPIsystems' Products used: VPItransmissionMaker™

19. Title: "Measurement of Raman Gain Coefficient in Standard Single Mode Optical Fibres for DWDM Photonic Simulation Purposes", Authors: Paulo Sérgio de Brito André1,2, Hypolito José Kalinowski3, Luiz Mario Borghesi Jr.3, João Lemos Pinto1,2, Organization: Instituto de Telecomunicações - Pólo de Aveiro1, Departamento de Física da Universidade de Aveiro 2, Centro Federal de Educação Tecnológica do Paraná 3, Source: 4th International Conference on Photonics, Devices and Systems, Prague. Proc. SPIE, pp. 507-511, 2003, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

20. Title: "Towards the Merging of Optical and Wireless Access Technologies – Fiber-Wireless Networks", Authors: Christina Lim1, Ampalavanapillai Nirmalathas1, Dalma Novak1, Rodney Waterhouse2, Organization: Australian Photonics Cooperative Research Centre, The University of Melbourne1; RMIT University, Australia2, Source: COIN/ACOFT, 13-17 July, 2003, Melbourne, Australia, paper WeB3-2 1400-1430 (invited), VPIsystems' Products used: VPItransmissionMaker™

21. Title: "Advanced Modulation Formats for High Capacity DWDM Transmission", Authors: Yang Jing Wen, Hongchun Bao, Sarah D. Dods, Rodney S. Tucker, and Thas A. Nirmalathas, Organization: Australian Photonics Cooperative Research Centre, The University of Melbourne, Source: COIN/ACOFT, 13-17 July, 2003, Melbourne, Australia, paper WeB4-1 1545-1615 (invited), VPIsystems' Products used: VPItransmissionMaker™

22. Title: "Impact of Dispersion Map on Performance Comparison of Advanced Modulation Formats in DWDM Systems", Authors: Dong-Soo Lee1, Yang Jing Wen2, Ampalavanapillai Nirmalathas2, and Man Seop Lee1, Organization: Information and Communications University, Daejeon, Korea1;Australian Photonics Cooperative Research Centre, The University of Melbourne2, Source: COIN/ACOFT, 13-17 July, 2003, Melbourne, Australia, paper WeB4-2 1615-1630, VPIsystems' Products used: VPItransmissionMaker™

23. Title: "Dispersion Map Optimisation for 40 Channel x 10 Gb/s Transmission Over 3000 km Using Standard SMF and EDFA Amplification", Authors: Bo-Hun Choi, Manik Attygalle, Sarah Dods and Yang Jing Wen, Organization: Australian Photonics Cooperative Research Centre, The University of Melbourne, Source: COIN/ACOFT, 13-17 July, 2003, Melbourne, Australia, paper WeB4-4 1645-1700, VPIsystems' Products used: VPItransmissionMaker™

24. Title: "Design Tools for Next Generation Optical Networks Requirements and Challenges", Author: Malin Premaratne Organization: Department of Electrical and Computer Systems Engineering, Monash University, Source: COIN/ACOFT, 13-17 July, 2003, Melbourne, Australia, paper TuB2-1 1100-1130 (invited), VPIsystems' Products used: VPIlinkConfigurator™

25. Title: "Simple Optical Signal-to-Noise Ratio Measurement for Optical Performance Monitoring", Author: Elaine Wong, Christina Lim, and Ampalavanapillai Nirmalathas, Organization: Australian Photonics Cooperative Research Centre, The University of Melbourne, Source: COIN/ACOFT, 13-17 July, 2003, Melbourne, Australia, post-deadline paper PD4 1630-1645, VPIsystems' Products used: VPItransmissionMaker™

26. Title: "Raman Gain characterization in Standard Single Mode Optical Fibers for Optical Simulation Purposes", Authors: Paulo Sérgio de Brito André, Rosário Correia, Luiz Mario Borghesi Jr., Hypolito José Kalinowski, João Lemos Pinto, Organization: Instituto de Telecomunicações - Pólo de Aveiro, Departamento de Física da Universidade de Aveiro, Centro Federal de Educação Tecnológica do Paraná, Source: submitted to Optica Aplicatta, 2003, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

27. Title: "Optical Differential Quadrature Phase-Shift Key (oDQPSK) for High Capacity Optical Transmission", Authors: R. A. Griffin, A. C. Carter, Organization: Marconi Optical Components, Source: OFC 2002, Anaheim, CA, paper WX6, VPIsystems' Products used: VPItransmissionMaker™WDM

28. Title: "WDM monitoring through blind signal separation", Authors: Y. Feng, V. Zarzoso, A. K. Nandi , Organization: Marconi Optical Components, Source: OFC 2002, Anaheim, CA, paper ThGG 95, VPIsystems' Products used: VPItransmissionMaker™WDM

29. Title: "Prechirp in NRZ-Based 40-Gb/s Single-Channel and WDM Transmission Systems", Authors: A. Hodzic, B. Konrad, K. Petermann, Organization: TU Berlin, Source: IEEE Photon. Technol. Lett., Vol. 14, No. 2, Feb 2002, pp. 152-154, VPIsystems' Products used: VPItransmissionMaker™WDM

30. Title: "All-Optical Clock Recovery for Signal Processing and Regeneration", Authors: B. Satorius, S. Bauer, C. Bornholdt, O. Brox, M. Möhrle, H.-P. Nolting, J. Slovak, Organization: Heinrich Hertz Institute Berlin , Source: IEEE LEOS Newsletter, p. 17, Vol. 16, No. 4, October 2002, Vol. 14, No. 2, Feb 2002, pp. 152-154, VPIsystems' Products used: VPItransmissionMaker™Active Photonics

31. Title: "Wavelength Switching Components for Future Photonic Networks", Authors: Ian White1, Richard Penty1, Matthew Webster1, Yew Jun Chai1, Adrian Wonfor1, Sadegh Shahkooh2, Organization: Cambridge University1, University of Bristol2, Source: IEEE Communications Magazine , September 2002, Vol. 40(9), pp. 74-81, VPIsystems' Products used: VPItransmissionMaker™Active Photonics

32. Title: "Dynamic First-order Polarization Mode Dispersion Compensation using Polarization Control", Authors: Sameer K. Arabasi, M. Yasin Akhtar Raja, Organization: UNC Charlotte, Source: OptiComm 2002, Boston, UK, VPIsystems' Products used: VPItransmissionMaker™WDM

33. Title: "Alternative Modulation Formats in N x 40 Gb/s WDM Standard Fiber RZ-Transmission Systems", Authors: A. Hodzic, B. Konrad, K. Petermann, Organization: TU Berlin, Source: J. Lightwave Technol., Vol. 20, No. 4, April 2002, pp. 598-607 , VPIsystems' Products used: VPItransmissionMaker™WDM

34. Title: "Reduced Driving Voltage Optical Duobinary Transmitter and its Impact on Transmission Performance over Standard Single-Mode Fiber", Authors: J. M. Gene, R. Nieves, A. Buxens, C. Peucheret, J. Pratand, P. Jeppesen, Organization: Universitat Politecnica de Catalunya, Source: IEEE Phot. Technol. Letts., Vol.14, 2002, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

35. Title: "Carrier recovery time in semiconductor optical amplifiers employing a holding beam", Authors: M. T. Hill, E. Tangdiongga, H. de Waardt, G. D. Khoe, H. J. S. Dorren, Organization: Vrije University Brussels, Source: to appear in Optics Letts., VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

36. Title: "Microwave signal transport over multimode polymer optical fibre networks for feeding wireless LAN access points", Authors: A. M. J. Koonen, A. Ng'oma, H. van den Boom, I.T. Monroy, P. Smulders, G. D. Khoe, Organization: Vrije University Brussels, Source: ECOC'02 Copenhagen, 8-12 September 2002, paper no. 9.2.5, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

37. Title: "Polymer Optical Fibre network for feeding wireless LAN antenna stations", Authors: A. M. J. Koonen, A. Ng'oma, H. van den Boom, I.T. Monroy, P. Smulders, G. D. Khoe, Organization: Vrije University Brussels, Source: Proc. of URSI General Assembly 2002, Maastricht, Aug. 17-24, 2002, oral paper no. 1833, 4, (Proceedings on CD-ROM), VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

38. Title: "In-house networks using Polymer Optical Fibre for broadband wireless applications", Authors: A. M. J. Koonen, A. Ng'oma, P. Smulders, H. van den Boom, I.T. Monroy, P. K. van Bennekom, G. D. Khoe, Organization: Vrije University Brussels, Source: Proc. XIVth ISSLS, Seoul, Korea, 14-18 April 2002, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

39. Title: "Characterization of an All Optical Label Swapping Node for IP over WDM", Authors: E. Verdurmen, F. Huijskens, T. Koonen, H. de Waardt, I. T. Monroy, Organization: COBRA Research Institute, Eindhoven University of Technology, Source: IEEE LEOS Symposium, 2002, Amsterdam, accepted for publication, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

40. Title: "Orthogonal Optical Labeling of Packets in IP-over-WDM Networks", Authors: A. M. J. Koonen, Sulur, I. T. Monroy, J. Jennen, H. de Waardt, Organization: COBRA Research Institute, Eindhoven University of Technology; Vrije University Brussels, Source: Proc. NOC 2002, Darmstadt, Germany, 18-21 June 2002, pp. 82-89, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

41. Title: "Orthogonal Optical Labeling of Packets in IP-over-WDM Networks", Authors: A. M. J. Koonen, Sulur, I. T. Monroy, J. Jennen, H. de Waardt, Organization: COBRA Research Institute, Eindhoven University of Technology; Vrije University, Brussels, Source: ECOC 2002 Copenhagen, 8-12 September 2002, paper no. 5.5.2, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

42. Title: "Estudos para Equalização de Ganho em um AFDE com uma única Rede de Bragg", Authors: M. C. Fugihara, H. J. Kalinowski, Organization: Centro Federal De Educacao Tecnologica, Source: Xth Brazilian Microwave and Optoelectronics Symposium (X SBMO), 2002, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

43. Title: "Análise para Implantação de WDM em Enlaces Ópticos existentes frente a efeitos de SRS e FWM", Authors: L. M. Borghesi Jr., K. K. H. Nabas, H. J. Kalinowski, Organization: Centro Federal De Educacao Tecnologica, Source: Xth Brazilian Microwave and Optoelectronics Symposium (X SBMO), 2002, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

44. Title: "Concept presentation and performance issues of multiwavelength Label/Headers in optical packet switching", Authors: A. Stavdas, Organization: National Technical University of Athens (NTUA), Source: International topical meeting on Photonics in Switching 21-25 July 2002 Cheju Island, Korea, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

45. Title: "Time-Wavelength Hybrid Optical CDMA System with Tunable Encoder/Decoder using Switch and Fixed Delay-Line", Authors: Seong-Sik Min, Hark Yoo, Yong Hyub Won, Organization: OIRC (Optical Internet Research Center) at ICU Source: submitted to Optics Communications, 2002, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

46. Title: "Wavelength Mismatch Tolerance in Wavelength-hopping and Time-spreading Optical CDMA Systems", Authors: Tae-il Chae, Hark Yoo, Seong-sik Min, Yong-hyub Won, Organization: OIRC (Optical Internet Research Center) at ICU, Source: submitted to IEICE Letter, 2002, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

47. Title: "Transmission Characteristics of Wavelength Hopping/Time Spreading 2-D Optical CDMA Systems", Authors: Hark Yoo, Yu-taek Lim, Seongsik Min, Yong Hyub Won, Organization: OIRC (Optical Internet Research Center) at ICU, Source: COIN+PS 2002, Cheju, Korea, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

48. Title: "Improvement of Input Power Dynamic Range in a XGM Wavelength Converter by a Attached Optical Amplifier Using a SOA", Authors: Yong-deok Jeong, Hark Yoo, Sang-ook Choi, Yong Hyub Won, Organization: OIRC (Optical Internet Research Center) at ICU, Source: COIN+PS 2002, Cheju, Korea, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

49. Title: "Power Penalty Reduction by the Optimal Control of the CW Power in a Cross Phase Modulation Wavelength Converter", Authors: Sang-ook Choi, Yong Hyub Won, Organization: OIRC (Optical Internet Research Center) at ICU, Source: COIN+PS 2002, Cheju, Korea, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

50. Title: "Dispersion-insensitive, Frequency-doubled SCM Signal Processing Technique for Optical Label Swapping", Authors: Tae-il Chae, Hark Yoo, Yong Hyub Won, Organization: OIRC (Optical Internet Research Center) at ICU, Source: APOC 2002, Shanghai, China, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

51. Title: "Optimization of 40 Gbit/s Transmission Systems using Frequency Resolved Optical Gating Characterization Techniques", Authors: L. P. Barry, P. Anandarajah, S. Del Burgo, R. T. Watts, D. A. Reid, J. Harvey, Organization: Dublin City University, Source: 15th LEOS Annual Meeting, Glasgow, 11-15 November 2002, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

52. Title: "Optimal 40 Gb/s Modulation Formats for Spectrally Efficient Long-Haul DWDM Systems", Authors: T. Hoshida, O. Vassilieva, K. Yamada, S. Choudhary, R. Pecqueur, H. Kuwahara, Organization: Fujitsu Network Communications, Inc., Texas, Source: J. Lightwave Technol., Vol. 20, No. 12, Dec. 2002, pp. 1989-1996, VPIsystems' Products used: VPItransmissionMaker™

53. Title: "Impact of Fiber Chromatic Dispersion in High-Speed TDM Transmission Systems" Authors: B. Konrad1, K. Petermann1, J. Berger2, R. Ludwig2, C. M. Weinert2, H. G. Weber2, B. Schmauss3, Organization: Technische Universität Berlin1; Heinrich Hertz Institut für Nachrichtentechnik, Berlin2; Lucent Technologies, Nürnberg3, Source: J. Lightwave Technol., Vol. 20, No. 12, Dec. 2002, pp. 2129-2135, VPIsystems' Products used: VPItransmissionMaker™

54. Title: "Advanced Components and Sub-System Solutions for 40 Gb/s Transmission", Authors: R. DeSalvo1, A. G. Wilson1, J. Rollman1, D. F. Schneider1, L. M. Lunardi2, S. Lumish2, N. Agrawal3, A. H. Steinbach3, W. Baun3, T. Wall3, R. Ben-Michael3, M. A. Itzler3, A. Fejzuli1, R. A. Chipman4, G. T. Kiehne5, K. M. Kissa5, Organization: JDS Uniphase, Melbourne, FL1; JDS Uniphase, Eatontown, NJ2; JDS Uniphase, West Trenton, NJ3; JDS Uniphase, San Jose, CA4; JDS Uniphase, Windsor, CT5, Source: J. Lightwave Technol., Vol. 20, No. 12, Dec. 2002, pp. 2154-2181, VPIsystems' Products used: VPItransmissionMaker™WDM

55. Title: "10 Gb/s NRZ Transmission over 1800 km Multiple Pumped Distributed Raman Amplified Transmission Link Without Lumped Amplifiers", Authors: E. Schulze, R. Freund, M. Malach, F. Raub, Organization: HHI Berlin, VPIsystems', Source: ECOC 2001, Amsterdam, paper Tu.A.2.3, Vol. 2, pp. 160-161, VPIsystems' Products used: VPItransmissionMaker™WDM

56. Title: "Novel Modulation Format for N ´ 40 Gbit/s WDM Transmission with 50 GHz Channel Spacing", Authors: A. Hodzic, B. Konrad, K. Petermann, Organization: TU Berlin, Source:

ECOC 2001, Amsterdam, paper Mo.L.3.3, Vol. 1, pp. 90-91, VPIsystems' Products used: VPItransmissionMaker™WDM

57. Title: "Dispersion compensation schemes for 160 Gb/s TDM-transmission over SSMF and NZDSF", Authors: B. Konrad, A. Hodzic, and K. Petermann, Organization: TU Berlin, Source: ECOC 2001, Amsterdam, paper Tu.L.2.4, Vol. 2, pp. 188-189, VPIsystems' Products used: VPItransmissionMaker™WDM

58. Title: "Enhanced performance of uncooled strongly-gain-coupled MQW DFB lasers in 10 Gb/s link applications", Authors: S. Yang, K. Williams, R. V. Penty, I. H. White, I. Wood, J. K. White, Organization: University of Bristol, Nortel, Source: ECOC 2001, Amsterdam, paper Tu.B.1.4, Vol. 2, pp. 124-125, VPIsystems' Products used: VPItransmissionMaker™Active Photonics

59. Title: "Group-delay measurement using the phase-shift method", Authors: T. Niemi, G. Genty, H. Ludvigsen, Organization: Helsinki University of Technology, Source: ECOC 2001, Amsterdam, vol. 4, pp. 496-497, VPIsystems' Products used: GOLD (predecessor of VPItransmissionMaker™Active Photonics)

60. Title: "All optical clock recovery at 80 GHz and beyond", Authors: C. Bornholdt, S. Bauer, M. Mörhle, H.-P. Nolting, B. Satorius, Organization: HHI Berlin, Source: ECOC 2001, Amsterdam, paper Th.F.1.2, Vol. 4, pp. 502-503, VPIsystems' Products used: VPItransmissionMaker™Active Photonics

61. Title: "A novel scalable optical packet compression/decompression scheme", Authors: S. Aleksic, V. Krajinovic, K. Bengi, Organization: Technical University, Wien, Source: ECOC 2001, Amsterdam, vol. 3, VPIsystems' Products used: PTDS (predecessor of VPItransmissionMaker™)

62. Title: "Penalties through XPM crosstalk in a switched long haul standard fiber WDM system based on normalized transmission sections", Authors: C. Caspar, K. Habel, N. Heimes, M. Konitzer, M. Malach, H. Özdem, M. Rohde, F. Schmidt, E.-J. Bachus, N. Hanik , Organization: HHI Berlin, T-systems, Source: OFC 2001, Anaheim, CA, paper WI5-1, VPIsystems' Products used: VPItransmissionMaker™WDM

63. Title: "40 GHz all-optical XOR with UNI gate", Authors: G. Theophilopoulos, K. Yiannopoulos, M. Kalyvas, C. Bintjas, G. Kalogerakis, H. Avramopoulos, L. Occhi, L. Schares, G. Guekos, S. Hansmann, F. Dall'Ara, Organization: National TU Athens, ETH Zurich, Opto Speed SA, Source: OFC 2001, Anaheim, CA, paper MB2-1, VPIsystems' Products used: VPItransmissionMaker™WDM

64. Title: "All-optical address recognition based on Mach-Zehnder interferometer", Authors: V. Krajinovic, S. Aleksic, G. Remsak, K. Bengi, H. R. van As, Organization: TU Wien, Source: NOC 2001, Ipswich UK, (2001), pp. 324-329, VPIsystems' Products used: PTDS (predecessor of VPItransmissionMaker™)

65. Title: "Multi-lambda Packet Labeling for Metropolitan and Wide-Area Optical Networks", Authors: A. Stavdas, C. Skoufis, I. Angelopoulus. G. Stassinopoulus, I. Pountourakis, Organization: NTU Athens, Source: Phot. Network Comms., June 2001, Vol. 3, (1/2), pp. 131-145, VPIsystems' Products used: PTDS (predecessor of VPItransmissionMaker™)

66. Title: "Simulations of Polarization Mode Dispersion Phenomena and Compensation using VPI* Software Package", Authors: Sameer K. Arabasi, M. Yasin Akhtar Raja, A. M. Samara, Organization: UNC Charlotte, Source: SPIE Symp. Optical Devices, Components & Systems, OPTO South East Clemson SC, Oct. 4-5, 2001, VPIsystems' Products used: PTDS (predecessor of VPItransmissionMaker™)

67. Title: "Improvement of NRZ based 40 Gbit/s single channel and WDM transmission using pre-chirp", Authors: A. Hodzic, B. Konrad, K. Petermann, Organization: TU Berlin, Source:

LEOS Annual Meeting 2001, San Diego, VPIsystems' Products used: VPItransmissionMaker™WDM

68. Title: "Simulation of photonic devices-L-band amplifier", Authors: I. Bibac, Organization: Nortel Networks, Source: Semiconductor Conference, CAS 2001 Proc. International, Sinaia, Romania, pp. 205-208, Vol. 1, 9-13 October 2001, VPIsystems' Products used: PTDS (predecessor of VPItransmissionMaker™)

69. Title: "Advanced Optical Amplification Techniques for Multi Channel Optical Communications and Networks", Dissertation, Authors: D. Dahan, Organization: Technion, Israel, Source: Thesis at Technion, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

70. Title: "Scalability Issues in Corporate Optical Backbone WDM Add/Drop Ring Networks", Authors: A. Stavdas1, G. L. Bona2, W. Denzel2, Organization: Department of Electrical and Computer Engineering, National Technical University of Athens1; IBM Research Division, Zurich Research Laboratory2, Source: Optics Communications, vol. 184, pp. 127-139, 2000 VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

71. Title: "Optimizing the Operation Characteristics of a LiNbO3 based Mach-Zehnder Modulator for 10 Gbit/s Lightwave Systems", Authors: P. S. André1,2, J. L. Pinto1,2, Organization: Instituto de Telecomunicações - Pólo de Aveiro1; Departamento de Física, Universidade de Aveiro2, Source: J. Opt. Comms., 22 (2001) p. 767, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

72. Title: "Fiber Bragg Grating For Telecommunications Applications: Tunable Thermally Stress Enhanced OADM", Authors: P. S. André1,2, J. L. Pinto1,2, I. Abe3, H. J. Kalinowski3,1, O. Frazão5, F. M. Araújo4,5, Organization: Instituto de Telecomunicações - Pólo de Aveiro1; Departamento de Física, Universidade de Aveiro2; Centro Federal de Educação Tecnológica do Paraná3; Departamento de Física da Faculdade de Ciências, Universidade do Porto4; INESC Porto - Unidade de Optoelectrónica e Sistemas Electrónicos5, Source: J. Microwaves and Optoelectronics, Vol. 2, No. 3, July 2001, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

73. Title: "High gain EDFA using ASE suppression: numerical simulation and experimental characterization", Authors: E. F. Woellner, M. C. Fugihara, M. Vendramin, E. Chitz, H. J. Kalinowski, M. J. Pontes, Organization: Centro Federal de Educação Tecnológica do Paraná - CEFET/PR, Source: Proc. SPIE, Vol. 4419, pp. 90-93, 2001, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

74. Title: "Numerical Simulation and Experimental Characterization of a High Gain EDFA with ASE Suppression", Authors: M. C. Fugihara, E. F. Woellner, M. Vendramin, E. Chitz, H. J. Kalinowski, M. J. Pontes, Organization: Centro Federal de Educação Tecnológica do Paraná - CEFET/PR, Source: submitted to Optics and Lasers in Engineering, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

75. Title: "Fast optical flip-flop by use of Mach-Zehnder interferometers", Authors: M. T. Hill, H. de Waardt, G. D. Khoe, H. J. S. Dorren, Organization: Vrije University Brussels, Source: Microwave and Optical Technol. Letts., Vol. 31, No. 6, pp. 411-415, December, 2001, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

76. Title: "Fast optical flip-flop by use of Mach-Zehnder interferometers", Authors: M. T. Hill, H. de Waardt, H. J. S. Dorren, Organization: Vrije University Brussels, Source: OSA Trends in Optics and Photonics (TOPS), Vol. 56, Conference on Lasers and Electro-Optics (CLEO 2001), Technical Digest, Postconference Edition (Optical Society of America, Washington DC, 2001), p. 188, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

77. Title: "Distributing microwave signals via polymer optical fiber (POF) systems", Authors: A. Ng'Oma, A. M. J. Koonen, I. Tafur Monroy, H. P. A. van den Boom, P. F. M. Smulders, G. D.

Khoe, Organization: Vrije University Brussels, Source: Proc. Symposium IEEE/LEOS Benelux Chapter 2001, 3-3 December 2001, ISBN 90-5487247-0, ed. Hugo Thienpont; Francis Berghmans; Jan Danckaert; Lieven Desmet; VUB Press, Vrije University Brussels, Belgium, 2001, pp. 157-160. ECO-3 [06.11], VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

78. Title: "Generation of optical microwave signals using laser diodes with enhanced modulation response for hybrid radio/fiber systems", Authors: A. Kaszubowska, L. Barry, P. Anandarajah, Organization: Dublin City University, Source: IEEE 3rd International Conference on Transparent Optical Networks, Cracow, 18-21 June 2001, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

79. Title: "Optical generation of millimetre-wave frequencies for hybrid radio/fiber systems", Authors: A. Kaszubowska, L. Barry, P. Anandarajah, Organization: Dublin City University, Source: 1st Joint IEI/IEE Symposium on Telecommunications Systems Research, 27 November 2001, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

80. Title: "Optimized design of transparent optical domains", Authors: N. Hanik, C. Caspar, F. Schmidt, R. Freund, L. Molle, C. Peucheret, Organization: T-systems, HHI Berlin, TU Denmark, VPIsystems' , Source: ECOC 2000, Munich, paper P 3.5, Vol. 3, pp. 195-197, VPIsystems' Products used: PTDS (predecessor of VPItransmissionMaker™)

81. Title: "Multicast-capable access nodes for slotted ring photonic networks", Authors: S. Aleksic, K. Bengi, Organization: TU Wien, Source: ECOC 2000, Munich, Vol. 3(2000), pp. 83-84, VPIsystems' Products used: PTDS (predecessor of VPItransmissionMaker™)

82. Title: "Influence of polarization dependent loss on birefringent optical fiber networks", Authors: N. Gisin, B. Huttner, N. Cyr, Organization: University Geneva, EXFO, Source: OFC 2000, Baltimore, MD, paper TuG1-1, VPIsystems' Products used: PTDS (predecessor of VPItransmissionMaker™)

83. Title: "Analysis of Multilevel Modulation Techniques for Improving the Bandwidth Efficiency of Multi-Gb/s Optical Communications", Dissertation, Authors: Michalis Meimaroglou, Organization: Electronic Engineering Laboratory, The University of Kent, Canterbury, UK, Source: The University of Kent, Canterbury, UK, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

84. Title: "All-Optical 3R Regeneration and Wavelength Conversion in an Integrated SOA/DFB Laser: Experiment and Simulation", Authors: V. Saxena, M. Owen1, M. F. C. Stephens2, A. Wonfor, R. V. Penty, I. H. White, Organization: Department of Electrical and Electronic Engineering, Centre for Communications Research, University of Bristol, UK 1now with Mitel, Newport, UK, 2 now with Marconi Solstis, Stratford, UK, Source: CLEO/Europe-IQEC, Nice, France, 12-14 Sep. 2000, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

85. Title: "Strictly Non-Blocking Optical Cross-Connect for WDM Wavelength Path Networks", Authors: P. S. André1,2, J. Pinto1, A. J. Teixeira1,3, T. Almeida1,4, A. Nolasco Pinto1,3, J. L. Pinto1,2, F. Morgado4, M. Pousa1,4, Organization: Instituto de Telecomunicações - Pólo de Aveiro1; Departamento de Física da Universidade de Aveiro2; Departamento de Electrónica e Telecomunicações da Universidade de Aveiro3; Portugal Telecom Inovação4, Source:Photonic Networks Communications, vol. 4:1, pp. 63-72, 2002, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

86. Title: "A line coding scheme for reducing timing jitter in WDM soliton systems", Authors: Y. Cai, T. Adali, C. Menyuk, Organization: University of Maryland, Baltimore County, Source: OFC 2000, Baltimore, MD, paper ThS4-2, VPIsystems' Products used: PTDS (predecessor of VPItransmissionMaker™

87. Title: "Optically fed microwave system using laser diodes with enhanced modulation bandwidth", Authors: A. Kaszubowska, P. Anandarajah, L. Barry, Organization: Dublin City University, Source: IEEE High Frequency Postgraduate Student Colloquium, Dublin, 7-8 September 2000, VPIsystems' Products used: VPItransmissionMaker™, VPIcomponentMaker™

88. Title: "Outside-in evaluation of commercial WDM systems", Authors: R. Damle, R. Freund, D. Breuer, Organization: Sprint ATL, VPIsystems', Source: NFOEC 1999, Chicago, Il, paper B3-3, Vol. 1, pp. 450-454, VPIsystems' Products used: PTDS (predecessor of VPItransmissionMaker™)

Photonic Device and Systems Demos (running in VPItransmissionMaker/VPIcomponentMaker)

Please see www.VPIphotonics.com for a selection of screen grabs from the the 450 demos supplied with the products. A list is on the following page.

Educational demos (under VPIplayer – a free simulator)

Please see www.VPIphotonics.com/VPIplayer for a selection of the free demos for VPIplayer (please download if you like), including educational demos for use by students.

Dynamic WDM Comb Generation
Dynamic WDM Comb with Control
Dynamically Controlled EDFA
EDFA Dynamics using Switched WDM Channels
CD Penalty Measurement
Chirped Gaussian Pulse Propagation
CRZ Pulse Compression
Four Wave Mixing
Intrachannel FWM and XPM
Modulation Instability
NRZ pre-post compensation
RZ pre-post compensation
Soliton vs. RZ System
SPM and XPM
MultiModeFiber1 (presumably)
MultiModeFiber2 (presumably)
MultiModeFiber3 (presumably)
MultiModeFiber4 (presumably)
Channel Offset Penalty
Extinction Ratio
Inband Crosstalk Penalty
Inband vs. Interband Crosstalk
Multipath Crosstalk - CW Source
Multipath Crosstalk - Modulated
Number of Interferers
Orthogonal and Parallel Polarization
Polarization Alignment
Disp Comp Filter Characterization
Dispersion and Attenuation Compensation
Maximally Flat ARMA Filter
Random Parameter Fluctuations
BER vs Threshold Level
Coherent Binary FSK System
Coherent Binary PSK System
Direct Detection Example
Electronics in an Optical Receiver
Full Phase-Locked Loop
Histograms from Eye Diagrams_Py
Histograms from Eyes using Signal Processing
Homodyne Example
Limiting Amplifier Transfer Characteristic
Link Illustrating Receiver Integrated Circuits
Lossy Electrical Integrator Performance
Modelling Noise in Amplifiers or Photodiodes
PLL Phase and Jitter Detector
Power Penalty Estimation
Setting the Sensitivity of a Receiver
Thresholder with Hysteresis
SBS Eye Opening Penalty
SBS Threshold
Bidirectional Raman Processes
Import of OTDR Data
PMD Statistics of Raman Gain
Raman Power Transfer
Raman Power Transfer System
Chirp of MZ Modulator
CW vs. RE Model - External Modulation
Data Sheet Model - Direct Modulation
Drive Signals with Variable Crossing Level
Laser Parameter Extraction
New MZI test
Peak Optical Frequency Detector
RE Model - Direct Modulation
RE Model - External Modulation
RIN Characterization
Speed of Direct Modulation
VCSEL LI Characteristic
VCSEL Thermal Behavior
10Gbps-40Gbps Upgrade using Raman Amplifier
160x20Gbps over 1500 km
320x10Gbps over 600 km
40x42.7Gbps over 3600 km Raman
82x10Gbps Bidirectional DRA
82x10Gbps using Dual Band DRA
82x10Gbps using Raman in DCF
82x40Gbps over 300 km
8x10Gbps OTDM System
OTDM to WDM 4x10Gbps Transmultiplexer
BER vs. Length Optimization
Simple Optimization
Yield of a 1 to 8 Splitter
2R Regenerated System
32x10Gbps over 7500 km
64x10Gbps over 7500 km
Chirped Modulation 5400 km
Chirped RZ System
Collision-Induced Jitter (Matlab)
Dispersion Managed Sections
Jitter versus Distance (Matlab)
Nearly-Constant Signal Levels
1000x2.5Gbps Metro Ring
CWDM with Amplifier ASExASE
CWDM with Amplifier BER Curves
Mixed Services Metro
Multimode Fiber - Impulse Response
Multimode Fiber - Signal Response
CRZ vs RZ
Dispersion Supported System
DPSK compared to NRZ
DQPSK decoding
DQPSK vs NRZ modulation
Duobinary System with Precoding
Duobinary Type 1 Data Generator
Duobinary Type 1 System
Duobinary Type 1 Transmitter
Duobinary vs. NRZ
IM-DPSK compared with NRZ
Manchester decoding
Phase-Shaped Binary System
Quaternary NRZ System
Single Side-Band (SSB) System
Vestigial Side-Band (VSB) Modulation
3x Ring with OXC & ADMs
Bandwidth Limitation
EDFA Transient Analysis
Optical Crosstalk
OSNR Variations in OADM Chain
OXC Interconnected Rings
Protection Switching 1
Protection Switching 2
Ring Crosstalk
Ring Routing
SOA Data Patterning (XGM)
SOA XPM Wavelength Converter
Wavelength Converting OXC
Wavelength Routing 3xOXC
WDM Cross-Connect
1st Order Compensator
2nd Order Compensator
40Gbps NRZ with All Orders of PMD
40Gbps NRZ with PMD Emulator
40Gbps RZ with PMD Emulator
Adaptive Filters for PMD compensation
Chromatic Dispersion Insensitive PMD Monitoring

Distortion Estimation by RF Spectrum
Importance Sampling for PMD (part 1)
Importance Sampling for PMD (part 2)
Performance Limitations due to PMD
PMD Test Waveform Generator
Source Polarization PMD Compensation
20 Channel NTSC System
Direct Detection Example
Frequency Response
BER Auto Gain with Script
BER Automatic Gain Setting
BER Estimator Comparison I
BER Estimator Comparison II
BER from Deterministic Noise
BER from Sampled Signals
BER Penalty Calculation
BER Stochastic - Chi2 Mode
BER Stochastic - Gauss Mode
BER Stochastic - Multiple Runs
BER vs Jitter
BER vs. Polarization azimuth
BER vs. Degree of Polarization of noise
BER vs. Extinction Ratio (Amplified System)
ISI Length with DM Laser
ISI Length with Fiber
LP filter in BER_Deterministic
Electrical LP Filter
Electrical Signal Generation (Lib)
Filter (Library)
FP Filter (T&R)
Optical Signal Generation (Lib)
Optical Signal Resampling in a DLL
Power Meter (Library)
Sample Mode Filter
Electrical Signal Generation (Matlab)
Filter (Matlab)
Optical Signal Generation (Matlab)
Power Meter (Matlab)
Trapezoidal AWG (Matlab)
Filter (Python)
Optical Signal Generation (Python)
Power Meter (Python)
Design Assistant Tutorial
A Simple WDM System
Creating SFB and MFBs
Gibbs Phenomenon
GUI Example Stage 1
GUI Example Stage 2
GUI Example Stage 3
Mixed MFB and SFBs
Mixed Signal Representations
Resampling and Limiting
Setting the Source Representation
BER Curve vs. BW
BER Curve vs. BW, run first
BER Curve vs. Dispersion
BER Curve vs. Length
BER vs. Length and D
BER vs. Received Power Graph
Component Comparison
2nd Order Emulator Impulse Response
2nd Order Emulator vs. Coarse Step
Averaged SOP and DOP
Coarse Step Model - Biased PMD Statistics
Coarse Step Model - Width Deviation
TSJM - Birefringence
TSJM - Fiber
TSJM - Polarization Transformation
ViStokes_Ave (galaxy)
1-input Expression (10log10x)
2-input Expression (IIR Filter)
3-Bit Ripple Counter
3-input Expression (simple controller)
4-input Expression (sine addition)
4-stage PRBS Generator
4-Stage Shift Register
Adding Jitter To Electrical Waveform
Automatic Gain Flattening
Binary Counter
Data Post Processing
Decimation using Signal Processing Modules
Downsampling using Signal Processing Modules
D-Type Latch
Edge-Triggered D-Type Flip-Flop
Electrical Phase Shift (Signal Proc)
Electrical Signal Sources
Finding Minimum and Maximum Values
Generating Ramps and Control Waveforms
Interpolation using Signal Processing Modules
Logic Gate Truth Tables
Matrices - Basic Matrix Functions
Matrices - Inverters and Transposers
Matrices - Simple Arithmetic Functions
Matrices - Toeplitz Matrix Decomposition
Microwave Signal Generation
Optical Amplifier Gain Slope Measurement
Set-Reset Latch
Signal Processing FIR Filters
Signal Processing IIR Filters
Slew-Rate Limiter (Signal Proc)
S-R Latch with Enable
Upsampling using Signal Processing Modules
VCO Driven by Digital Data
BER vs. Laser Power
File Input using a Simulation Script
File Output using a Simulation Script
Laser Power Control
Laser Tuning Control
Optimization using Bisection Method
OSNR Meter galaxy
OSNR Pre-Emphasis
Sweep using a Simulation Script
XPM Converter Transfer Characteristic
Controlling Parameterized Signals
Demultiplexing WDM Channels
Efficient WDM System Design
Measured Transfer Function
PRBS Settings
Resampling Options
Three EDFA Model Types
Using FiberNLS Joined Bands
Using FiberNLS Overlapped Bands
CD - Dispersion Delay Measurement
CD - Modulation Phase Shift Method
CD - Swept Homodyne Method
PMD - Fixed Analyzer Method
PMD - Modulation Response Method
PMD - Pulse Delay Method
Import Agilent HRS Data
Importing Agilent Chirp Files
Measured DM and EM Laser Penalty
Read from File using ReadFile
Extinction Ratio Measurement
Heterodyne Linewidth Measurement

RIN Measurement Methods
Self-Heterodyne Linewidth Measurement
Self-Homodyne Linewidth Measurement
Black Box vs. EDFA 1480nm
BlackBox vs. EDFA 980nm
Convert to Black-Box
Verify Black-Box
Amplifiers - Getting Started
Concentration Quenching
EDF_Giles - Design Issues
EDF_Giles - Rayleigh Backscatter Issues
EDF_Giles_FWM
Excited State Absorption
Spectral Hole Burning
Temperature Dependence
EDWA - Full Approach vs. Effective Overlap
EDWA - Index Profile vs. Refractive Index
EDFA Design Validation
Gain and Noise Figure Spectra
Gain and Power
Gain Tilt Measurement
OSNR vs. Transmission Distance
Power Conversion Efficiency
Pump Efficiency
Raman Gain vs. Wavelength
Sat Gain Spectrum
Saturation Characterization
Spectral Characterization
EDF Ring Laser
EDFA Preamplifier Design
L-Band Preamplifier using 3-Level Laser Model
Saturation of Preamplifier
Single Stage L-Band Amplifier
Two Stage C-Band Amplifier
Two Stage L-Band Amplifier
YDFA gain and noise spectra
Er Concentration - Influence on Gain
Upconversion Coefficient - Influence on Gain
Waveguide Length - Influence on Gain
Discrete Raman with EDFA
Distributed Raman with EDFA
Bidirectional Dual Band
Cascaded Raman Amplified Spans
Cascaded Raman Scattering
Dual Band DRA
Dual Band in DCF
Gain Flattening of DRA Output
Multi-Pump Gain Flattening
Optimization of a 12-Pump FRA
Optimization of a 2-stage FRA
Noise Generation
Polarization Measurement
Probe & Saturating Signals
Pump and Multiplexer
Separating Combs with Labels
WDM Comb
20 Channel NTSC CSO CTB IMD
80 Channel NTSC CSO CTB IMD
97 Channel PAL CSO & CTB
CSO Fiber Dispersion Compensation
Data Sheet Laser Model
NTSC system CNR
Directly Modulated Laser\BFR90 Laser Driver
Directly Modulated Laser\Dynamic and Adiabatic Chirp
Directly Modulated Laser\Dynamic Clipping Distortion
Directly Modulated Laser\Dynamic Clipping Distortion CTB
Directly Modulated Laser\Frequency Response
Directly Modulated Laser\Two-Tone Intermodulation Distortion
Externally Modulated Tx\EA Dynamic Chirp IMD
Externally Modulated Tx\MZ Clipping Distortion
Externally Modulated Tx\MZ Dynamic Chirp IMD
Externally Modulated Tx\MZ Frequency Response
Externally Modulated Tx\MZ Predistorted 80ch System
Externally Modulated Tx\MZ Predistortion Linearity Test
Externally Modulated Tx\MZ Two-Tone Intermodulation Distortion
Optical Fiber Link\Amplifier Noise to CNR
Optical Fiber Link\Chirped DM Laser IMD
Optical Fiber Link\Chirped MZ Frequency Response
Optical Fiber Link\Chirped MZ IMD
Optical Fiber Link\Chirpless MZ Frequency Response
Optical Fiber Link\Multipath Emulator in System
Optical Fiber Link\Multipath System with YAG Laser
Optical Fiber Link\Parasitic Fabry-Perot Model
Optical Fiber Link\Rayleigh Backscatter with Optical Amplifier
256-QAM over RF Channel
64-QAM and 77 Analog SNR
64-QAM over Optical Channel
64-QAM over RF Channel
64-QAM RX Phase
64-QAM using DM Laser
Constellation Display of Receiver Error
Laser Clipping Impulse Noise
Multimode Fiber - QAM Subcarrier Response
Two 64-QAM and 70 Analog
4 WDM each with Thirty 30 MBps QAM
5x2.5Gbps SCM over Optical SSB
Crosstalk from non-ideal Demultiplexer
FWM interference with unequal spacing
Noise Power Ratio Test - Digital Return
Upstream with Baseband Digital Return
Upstream with Frequency Stacking
XPM Optical Crosstalk
70 NTSC plus Thirty 30 Mbps QAM
70 NTSC plus Two 30 Mbps QAM
BER and Dynamic Range
FTTH SNR vs. Fiber Loss
FTTH with Distribution
FTTH with Multipath
QAM with 256 Mbps Baseband
Distortion vs Length
Fiber Link Distortion
Fiber Link Noise
Filter Induced Distortion
Frequency & Phase Response
Frequency Response with Filter
mm-Wave with Photonic Upconversion
Notch Filter using Dispersive Fiber
Notch Filter using MZI Real Laser
Optical Feedforward Linearizer
Push-Pull Analog Transmission
DBR Impulse Response
Electrical Filter Frequency Response
Electrical Filter Impulse Response

Optical Filter Impulse Response
Above Threshold Static Spectrum
Active Photonics - Getting Started
Below Threshold Spectrum
Dynamic Time-Averaged Spectrum
Freq Fluctuation Spect. and Linewidth
IM and FM Response
Junction Voltage
Laser Model Comparison TLLM vs SMRE
Mode Partition Noise
Phase Portrait - Modulated MQW DFB
Phase Portrait - Unstable DFB
Relative Intensity Noise
SOA Transfer Characteristic
Time Resolved Freq. Chirp
Timing Jitter
TLM Material Gain Calibration
Wavelength and Power
Complex Coupled Laser
Fabry Perot Laser
FBG Stabilized Laser
Integrated DFB and EA
Laser Model Comparison
Loss Coupled Laser
MQW DFB Laser
Push-Pull DFB Laser
Tapered MOPA
Two Section DFB
MZI XPM Wavelength Converter
NRZ to RZ Converter
Sagnac Loop Switch
SOA Amplifier-Detector
SOA Gate Switch
SOA Phase Shift
SOA XGM Regenerator
WDM to OTDM Transmultiplexer
4x40Gbps OTDM Transmitter
BER for Aperiodic Boundary Conditions
Directly Modulated NRZ System
Integrated DFB-SOA Regenerator System
Laser with Feedback
LED System
Propagation of Multiple Laser Modes
Soliton with Mode Locked Laser
Grating Controlled Fabry-Perot
Injection Locked Laser
Three Section FP-DBR
Two Section FP-DBR
Actively Mode-Locked Laser
Hybrid Mode Locked Laser
Passively Mode-Locked Laser
Soliton Pulse Compression
YDFA gain vs fiber length
DFB laser with chirped Bragg Grating
DFB laser with distributed quarter wave grating phase
Selfpulsation regimes in multi section DFB Laser
SOA Phase Discriminator