Curriculum Vitae
Daniel J. Blumenthal

Distinguished Professor
University of California
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EDUCATION

Ph.D.	Electrical Engineering	University of Colorado	Boulder, CO	1993
M.S.	Electrical Engineering	Columbia University	New York, NY	1988
B.S.	Electrical Engineering	University of Rochester	Rochester, NY	1981

EMPLOYMENT HISTORY

Distinguished Professor	UC Santa Barbara	Santa Barbara, CA	2021-Present
Director	Terabit Optical Ethernet Center, UCSB	Santa Barbara, CA	2010-Present
Professor	UC Santa Barbara	Santa Barbara, CA	2000-2021
Director of Engineering	Coriant Advanced Technologies (CAT)	Santa Barbara, CA	2015-2016
CTO	Packet Photonics, Inc.	Santa Barbara, CA	2014-2015
Associate Director	Multidisciplinary Optical Switching Technology (MOST) Center	Santa Barbara, CA	1997 – 2001
Associate Professor	UCSB	Santa Barbara, CA	1997-2000
Assistant Professor	Georgia Institute of Technology	Atlanta, GA	1993-1997
Graduate Researcher	University of Colorado	Boulder, CO	1990-1993
Research Engineer	University of Pennsylvania	Philadelphia, PA	1988-1990
Research Engineer	Columbia University	New York, NY	1985-1988
Senior Engineer	Sievers Research Inc	Boulder, CO	1984-1985
Engineer	StorageTek	Louisville, CO	1981-1984

HONORS AND AWARDS

Recipient	C. E. K. Mees Medal, Optical Society of America	2020
Founding University Affiliate	Microsoft Optical for the Cloud Initiative	2019
Fellow	National Academy of Inventors (NAI)	2017
Visiting Faculty Researcher	Microsoft Research (MSR) Cambridge, U.K.	2017
Education and Outreach Committee	Santa Barbara Bowl Foundation, Santa Barbara, CA	2016-2019
Board of Directors	Unite to Light (Non-Profit), Santa Barbara, CA	2016-2017
Board Member (Elected)	Researcher Seat on the Internet-2 Architecture & Operations Advisory Council	2008 - 2012
Fellow	Optical Society of America (OSA)	2006
Primary Member (PI)	NSF MFREC GENI Planning Group (a $350M NSF National networking infrastructure).	2003-2007
Board of Directors	National LambdaRail, Inc. (NLR)	2003 - 2010
Fellow	IEEE/LEOS/Communications Society	2003
Presidential Early Career Award for Scientists and Engineers (PECASE)	White House/DOD	1999
Best Transactions Paper Award	IEEE Education Society	1999
Young Investigator Program (YIP)	Office of Naval Research	1997

Senior Member	IEEE	1997
Chairman	Atlanta Chapter of the LEOS/ED Society	1996-1997
National Young Investigator (NYI)	National Science Foundation	1994
Secretary	Atlanta Chapter of the LEOS Society	1994-1995
North American Representative	IEEE/COMSOC Coord. Committee for OFC	1993

COMPANIES FOUNDED

SinOptiQ	Santa Barbara, CA	Founded 2022
Packet Photonics	Santa Barbara, CA	Founded 2007
Calient Networks	Santa Barbara, CA	Founded 1999

CONSULTING

Expert Witness and IP Consulting		2013 to Present
Coriant Advanced Technologies (CAT)	Santa Barbara, CA	2016 to 2017
Packet Photonics	Santa Barbara, CA	2007 to 2014
Aurrion, Inc.	Santa Barbara, CA	2011 to 2012
BBN	Cambridge, MA	2008 to 2013
Luminit	Torrence, CA	2007 to 2013
Tellabs	Boston, MA	2007
Sun MicroSystems	Santa Clara, CA	2004 - 2006
Calient Networks	Santa Barbara, CA	1999-2003
Gannon, Inc.	Chicago, IL	1997-1998
Siemens Corporate Research	Princeton, NJ	1993
Bernoulli/Iomega	Boulder, CO	1991-1993

PUBLICATION SUMMARY (REFEREED AND INVITED)

Books and Book Chapters	8
Invited Journal Publications and Articles	20
Keynote, Plenary and Invited Presentations	102
Postdeadline Conference Papers	9
Journal Publications	147
Conference Papers	238
Total	524

PATENT SUMMARY

Total Issued U.S. Patents: 23

	US Patent No.	Issuance Date	Title
1	7,379,668	4/2/02	Optical Amplification in Photonic Switched Crossconnect Systems
2	6,643,425	11/4/03	Optical Switch Having Switch Mirror Arrays Controlled by Scanning Beams
3	6,697,547	2/24/04	Wavelength Power Equalization by Attenuation in an Optical Switch
4	6,778,739	8/17/04	Wavelength Selective Optical Switch with Aligned Input and Output Substrates
5	6,792,177	9/14/04	Optical Switch with Internal Monitoring
6	6,912,359	6/28/05	Methods for Monitoring Performance in Optical Networks
7	7,050,717	5/23/06	System and Method of All Optical Label Swapping Using Two-Stage Optical Wavelength Converters
8	7,142,744	11/28/06	Wavelength Power Equalization by Attenuation in an Optical Switch
9	7,184,189	2/27/07	Apparatus for Simultaneous OTDM Demultiplexing, Electrical Clock Recovery and Optical Clock Generation, And Optical Clock Recovery
10	7,196,833	3/27/07	Apparatus for Simultaneous OTDM Demultiplexing, Electrical Clock Recovery and Optical Clock Generation, And Optical Clock Recovery
11	7,310,363	12/18/07	Integrated Wavelength Tunable Single and Two-Stage All-Optical Wavelength Converter
12	8,644,713	2/4/14	Optical Burst Mode Clock and Data Recovery
13	9,285,540	3/15/16	Integrated Dielectric Waveguide and Semiconductor Layer and Method Therefor
14	9,370,123	6/14/16	System and Methods for Reduced Power Consumption and Heat Removal in Optical and Optoelectronic Devices and Subassemblies
15	9,385,814	7/5/16	Wavelength Tunable Arrays for Data Communications
16	9,407,426	8/2/16	Optical Network Interface, Module and Engine
17	9,413,521	8/9/16	Programmable Optical Subassemblies and Modules
18	9,438,355	9/6/16	Control Systems for Optical Devices and Subassemblies
19	9,543,737	1/10/17	Fast Calibration and Programming Optical Components
20	9,638,859	5/2/17	Optical Fiber Alignment Device
21	9,755,753	9/5/17	Tunable U-Laser Transmitter with Integrated Mach-Zehnder Modulator
22	9,817,197	11/14/17	Optically Aligned Hybrid Semiconductor Device and Method
23	10,222,565	3/5/19	Optically Aligned Hybrid Semiconductor Device and Method

EDITING JOURNALS

Editorial Board	Nature, Light, Science & Applications (LSA)	2022 - 2025
Primary Guest Editor	IEEE Journal on Selected Area in Quantum Electronics (JSTQE) Special Issue on Ultra Low-Loss Optical Waveguides	2018
Associate Editor	IEEE Photonics Technology Letters (PTL)	2000-2004
Associate Editor	IEEE Photonics Technology Letters (PTL)	1997-2000
Associate Editor	SPIE Optical Networks Magazine	2001 – 2008
Guest Editor	IEEE Journal on Selected Area in Quantum Electronics (JSTQE) Special Issue on High Speed Integrated Photonics	2007
Primary Guest Editor	IEEE Journal on Selected Areas in Communications Special Issues on Optoelectronic and Optical Routers	2002
Associate Editor	IEEE Transactions on Communications	1996-2000
Primary Guest Editor	IEEE Journal of Lightwave Technology (JLT) Special Issue on Photonic Packet Switching	1998

PROFESSIONAL ACTIVITIES

Topical Meeting Organizer	IEEE Summer Topical Meeting on "Visible Light Integrated Photonics and Application to Atomic and Quantum Sensing, Communications, and Computing (VLIP)"	2023
Symposia Organizer	OFC Symposium on "Ultra-Stable Frequency Sources and their Future Applications in Telecom I"	2023
Subcommittee Chair	S2, Optical Fiber Communications OFC 2019, San Diego, CA	2021
Steering Committee	WOMBAT International Meeting on Interactions Between Light and Sound	2019-present
Evaluator	IEEE Photonics Society Fellow Evaluating Committee	2020
Traveling Faculty Lecturer	Optical Society of America (OSA)	2019-present
Committee Member	Optical Society of America (OSA) Corning Women in Optical Communication Scholarship	2018-2019
Committee Member	National Academy of Inventors (NAI) Fellow Advisory Committee	2018 - 2021
Committee Member	National Academy of Inventors (NAI) Senior Member Advisory Committee (SMAC)	2019
TPC Member	Optical Fiber Communications OFC	1997-2000, 2018-2020
Workshop Organizer	OFC Workshop on "Super DACs and ADCs – To interleave or not to interleave?" OFC 2019 San Diego, CA	2019
Workshop Organizer	OFC Workshop on "Beyond Silicon Photonics," OFC 2018 San Diego, CA	2018
TPC Member	Topical Meeting on Photonics in Switching	1995,1997, 2008-2010, 2012, 2014, 2015
TPC Member	25th International Conference on Indium Phosphide and Related Materials (IPRM) Kobe, Japan on May 20-23	2013
General Program Chair	IEEE Photonics Society First Topical Meeting on Terabit Optical Ethernet	2011
TPC Member	IEEE Photonic Society Topical Meeting on Photonics for Routing and Interconnects	2010
Session Chair	First Asian Himalayas International Conference on Internet AH-ICI2009	2009
Steering committee	Opto-Electronics and Communications Conference (OECC) and the Australian Conference on Optical Fibre Technology (ACOFT)	2008 2008
TPC Member	ACM/IEEE 4th Symposium on Architectures for Networking and Communications Systems (ANCS)	2008
TPC Member	ONS Subcommittee, LEOS Annual Meeting	2007
TPC Member	FiWi SubCom Meeting at ICC/Globecomm, Glasgow, UK	2007
TPC Member	APOC03: Optical Transmission, Switching And Subsystems, Nov. 5-9, Wuhan, China	2007

TPC Member	IEEE/LEOS Topical Meeting on Optical Networks and Systems	2007
TPC Member	3rd ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS)	2007
Guest Editor	IEEE Journal on Selected Areas in Quantum Electronics (JSTQE) Special Issue on High Speed Integrated Photonics	2006 – 2007
TPC Member	OSA Nonlinear Photonics Meeting, Nonlinear Devices and Systems	2006 - 2007
Committee Member	LEOS Board of Governors Long Range Strategic Planning for Publications	2006 - 2007
Subcommittee Chair	IEEE/LEOS Semiconductor Laser Workshop	2006
Co-Organizer	International Workshop on the Future of Optical Networking	2006
TPC Member	SIGCOMM	2006
Workshop Organizer	National Science Foundation (NSF) Workshop on Optical Networking and Communications, UCSB	2005
TPC Member	European Conference on Optical Communications (ECOC)	2004 - 2005
TPC Member	LEOS Annual Meeting	2005
Executive Committee	CoRE UC Discovery	2004 - 2005
TPC Member	4th International Workshop on Optical Burst Switching	2005
Guest Editor	IEEE Journal on Selected Areas in Quantum Electronics	2005
TPC Member	IQEC/CLEO Pacific Rim	2005
TPC Member	3rd International Workshop on Optical Burst Switching	2004
TPC Member	IASTED International Conference on Optical Communications Systems and Networks (OCSN)	2004
Guest Editor	IEEE Journal on Selected Areas in Communications (JSAC) Special Issues on Optoelectonic and Optical Routers	2002
General Co-Chair	LEOS Topical Meeting on Advance Semiconductor Lasers and their Applications (ASLA)	2001
TPC Member	Hot Interconnects VIII	2001
General Conference Chair	OSA Topical Meeting on Photonics in Switching	2001
TPC Member	Opticom 2000	2000
General Chair	Optical Summit, Sante Fe, NM	2000
Program Committee Chair	OSA Top. Mtg. on Photonics in Switching	1999
Program Committee Chair	Optical Internetworking Conference	1999
Workshop Organizer	OFC Workshop on Optical Signal Processing for Optical Networks	2000
TPC Member	Conference on Lasers and Electrooptics (CLEO) North America	1999-2001
TPC Member	IEEE/LEOS Topical Meeting on WDM Component Technologies	1997
TPC Member	IEEE/LEOS Topical Meeting on Optical Networks and their Enabling Technologies	1994
Chair	Atlanta Chapter of the LEOS/ED Society	1995-1997
Secretary	Atlanta Chapter of the LEOS Society	1994-1995
North American Representative	IEEE/COMSOC Coord. Committee for OFC	1993
Subcommittee Chair	S2, Optical Fiber Communications OFC 2019, San Diego, CA	2021
Steering Committee	WOMBAT International Meeting on Interactions Between Light and Sound	2019-2020
Evaluator	IEEE Photonics Society Fellow Evaluating Committee	2020
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Committee Member	Optical Society of America (OSA) Corning Women in Optical Communication Scholarship	2018-2019
Committee Member	National Academy of Inventors (NAI) Fellow Advisory Committee	2018 - 2021
Committee Member	National Academy of Inventors (NAI) Senior Member Advisory Committee (SMAC)	2019
TPC Member	Optical Fiber Communications OFC	1997-2000, 2018-2020

Workshop Organizer	OFC Workshop on "Super DACs and ADCs – To interleave or not to interleave?" OFC 2019 San Diego, CA	2019
Workshop Organizer	OFC Workshop on "Beyond Silicon Photonics," OFC 2018 San Diego, CA	2018
TPC Member	Topical Meeting on Photonics in Switching: Florence, Italy	2015
TPC Member	Topical Meeting on Photonics in Switching:, San Diego, California	2014
TPC Member	25th International Conference on Indium Phosphide and Related Materials (IPRM) Kobe, Japan on May 20-23	2013
TPC Member	International Meeting on Photonics in Switching Ajaccio Corsica, France	2012
Workshop Organizer	Future solutions for Tbit/s Ethernet, 37th European Conference and Exhibition on Optical Communication (ECOC)	2011
General Program Chair	IEEE Photonics Society First Topical Meeting on Terabit Optical Ethernet	2011
Co-Chair	UCSB Institute for Energy Efficiency Data Center Roundtable	2011
TPC Member	OSA Topical Meeting on Photonics in Switching, Monterey, CA	2010
TPC Member	IEEE Photonic Society Topical Meeting on Photonics for Routing and Interconnects	2010
TPC Member	Photonics in Switching, Piza, Italy	2009
Session Chair	First Asian Himalayas International Conference on Internet AH-ICI2009	2009
TPC Member	International Topical Meeting on Photonics in Switching, Tokyo, Japan	2008
Steering committee	Opto-Electronics and Communications Conference (OECC) and the Australian Conference on Optical Fibre Technology (ACOFT)	2008 2008
TPC Member	ACM/IEEE 4th Symposium on Architectures for Networking and Communications Systems (ANCS)	2008
TPC Member	OFC Workshop on All-Optical Signal Processing and Conditioning	2008
TPC Member	ONS Subcommittee, LEOS Annual Meeting	2007
TPC Member	FiWi SubCom Meeting at ICC/Globecomm, Glasgow, UK	2007
TPC Member	APOC03: Optical Transmission, Switching And Subsystems, Nov. 5-9, Wuhan, China	2007
TPC Member	IEEE/LEOS Topical Meeting on Optical Networks and Systems	2007
TPC Member	3rd ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS)	2007
Workshop Organizer	4th International Workshop on the Future Optical Network - Beyond 100Gbps Metro and New Generation Access Technologies	2007
Workshop Organizer	Workshop on the Future of Optical Networking OECC2007, Yokohama, Japan	2007
Workshop Organizer	2nd International OFC/NFOEC Workshop On Future of Optical Networking (FON), Anaheim	2007
Guest Editor	IEEE Journal on Selected Areas in Quantum Electronics (JSTQE) Special Issue on High Speed Integrated Photonics	2006 – 2007
TPC Member	OSA Nonlinear Photonics Meeting, Nonlinear Devices and Systems	2006 - 2007
Committee Member	LEOS Board of Governors Long Range Strategic Planning for Publications	2006 - 2007
Subcommittee Chair	IEEE/LEOS Semiconductor Laser Workshop	2006
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TPC Member	LEOS Annual Meeting	2005
Executive Committee	CoRE UC Discovery	2004 - 2005
TPC Member	4th International Workshop on Optical Burst Switching	2005

Guest Editor	IEEE Journal on Selected Areas in Quantum Electronics	2005
TPC Member	IQEC/CLEO Pacific Rim	2005
TPC Member	3rd International Workshop on Optical Burst Switching	2004
TPC Member	IASTED International Conference on Optical Communications Systems and Networks (OCSN)	2004
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General Conference Chair	OSA Topical Meeting on Photonics in Switching	2001
Associate Editor	SPIE Optical Networks Magazine	2001-2003
TPC Member	Opticom 2000	2000
General Chair	Optical Summit, Sante Fe, NM	2000
Associate Editor	IEEE Photonics Technology Letters (PTL)	2000-2004
Associate Editor	IEEE Transactions on Communications	2000
Program Committee Chair	OSA Top. Mtg. on Photonics in Switching	1999
Program Committee Chair	Optical Internetworking Conference	1999
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TPC Member	OSA Top. Mtg. on Photonics in Switching	1995,1997
TPC Member	IEEE/LEOS Topical Meeting on WDM Component Technologies	1997
TPC Member	IEEE/LEOS Topical Meeting on Optical Networks and their Enabling Technologies	1994
Chair	Atlanta Chapter of the LEOS/ED Society	1995-1997
Secretary	Atlanta Chapter of the LEOS Society	1994-1995
North American Representative	IEEE/COMSOC Coord. Committee for OFC	1993
Workshop Organizer	AFOSR Workshop on Multiwavelength Comm.	1996
Workshop Organizer	NSF Workshop on Optical Comm. Systems	1994
Workshop Organizer	AFOSR Workshop on Multiwavelength Information Processing	1993
Publications Reviewer	Nature Photonics, Nature Communications, Science, Optica, Optics Express, Optics Letters, IEEE J. of Lightwave Technol., IEEE Trans. on Comm., IEEE Selec. Areas in Comm., IEEE Photon. Technol. Letters, Electron. Letters, App. Optics, Optics Letters, J. of Parallel and Distributed Processing	1993 - present
Society Memberships	IEEE, IPC, LEOS, and Optica	

BOOKS AND BOOK CHAPTERS

B1. Multiwavelength Photonic Packet Switched Interconnects, D. J. Blumenthal, University of Colorado at Boulder, Advisor J. Sauer, July (1993).

B2. All-Optical Multi-Hop Architectures for Photonic Packet Switching, D. J. Blumenthal, *Photonic Networks: Advances in Optical Communications*, Part 3, Ch. 30, pp. 377-386, Ed. G. Prati, Springer-Verlag London Limited (1997).

B3. Semiconductor Optical Amplifiers, D. J. Blumenthal and N. C. Kothari, *The Communications Handbook*, Chapter 61, pp. 832-47, Ed. J. D. Gibson, CRC Press Inc. (1997).

B4. Experimental Demonstration of MOSAIC: a Multiwavelength Optical Subcarrier Multiplexed Controlled Network, R. Gaudino, M. Shell, M. Len, G. Desa, C. Juckett, and D. J. Blumenthal, *Trends in Optics and Photonics Series: Volume 20, Optical Networks & Their Applications*, pp. 340-1, Ed. Richard Barry (1998).

B5. Quantum Dot Semiconductor Optical Amplifiers, R. P. Mirin and D. J. Blumenthal, *Trends in Optics and Photonics Series: Volume 32, Advanced Semiconductor Lasers and Their Applications,* pp. 183-5, Eds. Leo Holberg and Robert Lang (2000).

B6. Tunable Laser Diodes and Related Optical Sources, J. Buss, M. C. Aman, and D. J. Blumenthal, Wiley-IEEE Press, 2nd Edition, ISBN: 0471208167, January (2005).

B7. Low-Loss Photonic Integration: Applications in Datacenters, Demis D. John, Grant Brodnik, Sarat Gundavarapu, Renan L. Moreira, Michael Belt, Taran Huffman and Daniel J. Blumenthal, *Datacenter Connectivity Technologies: Principles and Practice,* pp. 431-480, Editor: Frank Chang, Inphi Corporation, USA. River Publishers Series in Optics and Photonics ISBN: 9788793609228 *(2018)*

B8. Chapter Ten - Integrated Brillouin lasers and their applications, Daniel J. Blumenthal, Irina Kabakova, Peter T. Rakich, Kerry Vahala, Brillouin Scattering Part 2, Editor(s): Benjamin J. Eggleton, Michael J. Steel, Christopher G. Poulton, Semiconductors and Semimetals, Elsevier, Volume 110, 2022, Pages 107-180, ISSN 0080-8784, ISBN 9780323989312, https://doi.org/10.1016/bs.semsem.2022.05.004. (2022)

INVITED JOURNAL PUBLICATIONS AND ARTICLES

1987

IJA1. "Photonic Switch with Optically Self-Routed Bit Switching," P. R. Prucnal, D. J. Blumenthal, and P. A. Perrier, *IEEE Communications Magazine*, special issue on Photonic Switching, **25**(5): 50-55, May (1987) (Invited).

1992

IJA2. "Photonic Interconnects for Gigabit Multicomputer Communications," J. R. Sauer, D. J. Blumenthal, and A. V. Ramanan, *IEEE Lightwave Telecommunications Systems Magazine*, special issue on Gigabit Networks, **3**(3): 12-19 August 12-19 (1992) (Invited).

1994

IJA3. "Photonic Packet Switches: Architectures and Experimental Implementations," D. J. Blumenthal, P. R. Prucnal, and J. R. Sauer, *Proceedings of the IEEE*, **82**(11): 1650-1667, November (1994) (Invited).

1997

IJA4. "Physical Limitations to Scalability of WDM All-Optical Networks," D. J. Blumenthal, M. Shell, and M. D. Vaughn, *Optics and Photonics News*, **8**(2): 17-22 February 17-22 (1997) (Invited).

2001

IJA5. "All-Optical Label Swapping Networks and Technologies," D. J. Blumenthal, B. E. Olsson, G. Rossi, T. Dimmick, L. Rau, M. L. Mašanović, O. A. Lavrova, R. Doshi, O. Jerphagnon, J. E. Bowers, V. Kaman, L A. Coldren, and J. Barton, *Journal of Lightwave Technology 18(12):2058-2075 · January 2001* (Invited)

IJA6. "Routing Packets with Light," D. J. Blumenthal, *Scientific American,* **284**(1): 79-83, January (2001) (Invited).

IJA7. "Photonic packet switching and optical label swapping," D. J. Blumenthal, *Optical Networks Magazine,* **2**(6): 54-65, November-December (2001) (Invited).

2002

IJA8. "All-Optical Label Swapping for the Future Internet," D. J. Blumenthal, *Optics and Photonics News*, **13**(3): 22-25, March (2002) (Invited).

2003

IJA9. "Optical Signal Processing for Optical Packet Switching Networks," D. J. Blumenthal, J. E. Bowers, L. Rau, C. Hsu-Feng, S. Rangarajan, W. Wang, and K. N. Poulsen, *IEEE Communications Magazine*, **41**(2): 523 – 529, February (2003) (Invited).

IJA10. "Guest Editorial High-Performance Electronic Switches/Routers for High-Speed Internet," M. Hamdi, D. J. Blumenthal, H. J. Chao, E. Leonardi, C. Qiao, and K. Y. Yun, *IEEE Journal on Selected Areas in Communications*, **21**(4): 481-5, May (2003) (Invited).

IJA11. "Guest Editorial High-Performance Optical Switches/Routers for High-Speed Internet," M. Hamdi, H. J. Chao, D. J. Blumenthal, E. Leonardi, C. Qiao, and K. Y. Yun, *IEEE Journal on Selected Areas in Communications*, **21**(7): 1013-7, September (2003) (Invited).

2004

IJA12. "Optical Performance Monitoring," D. C. Kilper, R. Bach, D. J. Blumenthal, D. Einstein, T. Landolsi, L. Ostar, M. Preiss, and A. E. Willner, *Journal of Lightwave Technology*, **22**(1): 294-304, January (2004) (Invited).

2009

IJA13. "An 8x8 InP Monolithic Tunable Optical Router (MOTOR) Packet Forwarding Chip," S. C. Nicholes, M. L. Masanovic, B. Jevremovic, E. Lively, L. A. Coldren, and D. J. Blumenthal, *IEEE Journal of Lightwave Technology, Special Issue on OFC*, (2009) (Invited).

2010

IJA14. "Integrated Photonics for Low Power Packet Networking," Daniel J. Blumenthal, John Barton, Neda Beheshti, John E. Bowers, Emily Burmeister, Larry A. Coldren, Matt Dummer, Garry Epps, Alexander Fang, Yashar Gangali, John Garcia, Brian Koch, Erica Lively, John Mack, Milan Masanovic, Nick McKeown, Kim Nguyen, Steve Nicholes, Hundai Park, Biljana Stamenic, Henrik Poulsen, Matt Sysak, *IEEE Journal of Selected Topics In Quantum Electronics*, VOL. 17, NO. 2, MARCH/APRIL (2011) (Invited)

2016

IJA15. "Enhanced Brillouin Amplification in Silicon," Tom Baehr-Jones, Ruizhi Shi and Daniel J. Blumenthal, *Nature Photonics, "News and Views*," Vol. 10, No. 7, June 2016, pp. 432-434 (Invited)

2018

IJA16. "Integrated combs drive extreme data rates," Daniel J. Blumenthal, *News and Views, Nature Photonics*, Vol. 12, AUGUST 2018, pp. 444–450 (Invited)

IJA17. "Silicon nitride in silicon photonics," Daniel J. Blumenthal, R. Heideman, D. Geuzebroek, A. Leinse and C. Roeloffzen, Proceedings of the IEEE Special Issue on Silicon Photonics, Vol. 106 No. 12 DOI: 10.1109/JPROC.2018.2861576, 2018 (Invited)

2020

IJA18. "Frequency Stabilized Links for Low-Energy Coherent Fiber Interconnects in the Datacenter," Daniel J Blumenthal[1], Hitesh Ballani, Ryan Behunin, John E. Bowers, Paolo Costa, Daniel Lenoski, Paul A. Morton, Scott B. Papp, Peter T. Rakich*, IEEE Journal of Lightwave Technology Special Issue on Optical Interconnects,* (2020) DOI: 10.1109/JLT.2020.2985275 (Invited)

IJA19. "Photonic integration for UV to IR applications," D. J. Blumenthal, *APL Photonics*, 2020; 5(2):020903. (Invited)

2022

IJA20. "2022 Roadmap on integrated quantum photonics," Moody, G., Sorger, V. J., Blumenthal, D. J., Juodawlkis, P. W., Loh, W., Sorace-Agaskar, C., Jones, A. E., Balram, K. C., Matthews, J. C. F., Laing, A., Davanco, M., Chang, L., Bowers, J. E., Quack, N., Galland, C. Aharonovich, I., Wolff, M. A., Schuck, C., Sinclair, N., Lončar, M., Komljenovic, T., Weld, D., Mookherjea, S., Buckley, S., Radulaski, M., Reitzenstein, S., Pingault, B., Machielse, B., Mukhopadhyay, D., Akimov, A., Zheltikov, A., Agarwal, G. S., Srinivasan, K., Lu, J., Tang, H. X., Jiang, W., McKenna, T. P., Safavi-Naeini, A. H., Steinhauer, S., Elshaari, A. W., Zwiller, B., Davids, P. S., Martinez, N., Gehl, M., Chiaverini, J., Mehta, J. K., Romero, J., Lingaraju, N. B., Weiner, A. M., Peace, D., Cernansky, R., Lobino, M., Diamanti, E., Vidarte, L. T., Camacho, R. M., Journal of Physics: Photonics 4(1): 012501.

2023

KEYNOTE, PLENARY AND INVITED PRESENTATIONS

1995

IC1. "Experimental Implementations of Multiwavelength Photonic Packet Switches," D. J. Blumenthal, *Proceedings of the IEEE Conference MILCOM '95*, San Diego, CA, **3**: 1279-1283, November 5-8 (1995) (Invited).

IC2. "Multiwavelength Photonic Packet Switch Architectures," D. J. Blumenthal, *SPIE International Symposium on Aerospace/Defense Sensing and Dual-Use Photonics*, Orlando, FL, April 17-21 (1995).

1996

IC3. "All-Optical Multi-Hop Architectures for Photonic Packet Switching," D. J. Blumenthal, *International Workshop on Photonic Networks and Technologies*, Lerici, Italy, September 4-6 (1996) (Invited).

IC4. "Scalability Issues in WDM All-Optical Networks," D. J. Blumenthal, *CLEO Europe*, Hamburg, Germany, Paper CThF1, p. 244, September 8-13 (1996) (Invited).

IC5. "Physics and applications of semiconductor optical amplifiers," D. J. Blumenthal, *Conference Proceedings. LEOS '96 9th Annual Meeting. IEEE Lasers and Electro-Optics Society 1996 Annual Meeting,* New York, NY, Paper WB1, **2**: 8 November 18-19 (1996) (Invited).

1997

IC6. "Coherent Crosstalk in Photonic Switched Networks," D. J. Blumenthal, *Technical Digest of the Topical Meeting on Photonics in Switching*, Stockholm, Sweden, Paper PWA1-1, p. 18, April 1-4 (1997) (Invited).

IC7. "The Limits of WDM Technology," D. J. Blumenthal, *Semiconductor Laser Workshop*, *CLEO '97*, Baltimore, MD, May (1997).

1998

IC8. "1.55μm VCSEL Array Free-Space Links for SAB/Lasercom," D. J. Blumenthal, *Lasercom Workshop*, DARPA/ETO, Arlington, VA, May (1998).

1999

IC9. "Physical Implementation of the Optical Layer," D. J. Blumenthal, *Optical Internetworking Conference (ICM)*, Washington, D. C., June 16-17 (1999) (Invited).

IC10. "Techniques for All-Optical Label Swapping Using SOA-Based Wavelength Conversion and Subcarrier Multiplexing," D. J. Blumenthal, *OSA Topical Meeting on Photonics in Switching '99*, Santa Barbara, CA, Paper PThC4, pp. 91-93, July 21-23 (1999) (Invited).

IC11. "The λ-Scheduler: A Multiwavelength Scheduling Switch," J. P. Lang, E. Varvarigos, and D. J. Blumenthal, *37th Annual Allerton Conference on Communicating, Control, and Computing,* University of Illinois, Urbana, IL, *September* 22-24 (1999) (Invited).

IC12. "All-Optical Label Swapping with Wavelength Conversion for WDM-IP Networks with Subcarrier Multiplexed Addressing," D. J. Blumenthal, *37th Annual Allerton Conference on Communicating, Control, and Computing,* University of Illinois, Urbana, IL, September 22-24 (1999) (Invited).

2000

IC13. "Wavelength Conversion and Optical Signal Processing for Packet Routing," D. J. Blumenthal, *Optical Fiber Communication Conference (OFC '00)*, Baltimore, MD, workshop on Optical Signal Processing for Optical Networks, March 5-10 (2000) (Invited).

IC14. "All-Optical Networks," D. J. Blumenthal, *11th Annual Workshop on Interconnections Within High-Speed Digital Systems,* Santa Fe, NM, May 21–24 (2000) (Invited).

IC15. "Wavelength Conversion and Optical Signal Processing for Packet Routing," D. J. Blumenthal, *Optical Fiber Communication Conference (OFC '00)*, workshop on Optical Signal Processing for Optical Networks, Baltimore, MD, March 5-10 (2000).

2002

IC16. "Photonic Packet and All-Optical Label Switching Technologies and Techniques," D. J. Blumenthal, *Conference on Optical Communications (OFC '02)*, Anaheim, CA, Paper W03, **1**: 282-4, March 19-22 (2002) (Invited).

IC17. "Optical Packet Switching and Associated Optical Signal Processing," D. J. Blumenthal, J. E. Bowers, Y. J. Chiu, H. F. Chou, B. E. Olsson, S. Rangarajan, L. Rau, and W. Wang, *2002 Digest of the LEOS Summer Topical Meetings,* Piscataway, NJ, Paper TuG2, July 15-17 (2002) (Invited).

IC18. "Integrated Devices for Wavelength-Agile All-Optical Networks," D. J. Blumenthal, *Technical Digest of the Integrated Photonics Research Conference (IPR '02),* Vancouver, Canada, Paper IWB1, September 17-19 (2002) (**Plenary**).

2003

IC19. "Optical signal processing using semiconductor optical amplifiers and applications to packet and burst switching," D. J. Blumenthal, *Conference on Lasers and Electro Optics (CLEO '03)*, Baltimore, MD, Session CTuQ3, June 1-6 (2003) (Invited).

IC20. "All-Optical Packet Routers," D. J. Blumenthal, *OSA Topical Meeting on Photonics in Switching 2003*, Versailles, France, September 29-October 2 (2003) (Invited).

IC21. "The Parallel Lambda Revolution in Optical Networks," D. J. Blumenthal, *Super Computing Conference 2003*, Phoenix, AZ, November 15-21 (2003) (Invited).

IC22. "Data in the Optical Domain (DoD)," D. J. Blumenthal, *DARPA/MTO Workshop*, Arlington, VA, March 18 (2003).

IC23. "Future Optical Networks," D. J. Blumenthal, *NSF Workshop on CyberInfrastructure Research for Homeland Security*, University of California, San Diego, CA, February 26 (2003).

IC24. "Optical Networks," D. J. Blumenthal, *DOE Science Computing Conference*, Sheraton Crystal City Arlington, VA, June 19-20 (2003).

2004

IC25. "Local WDM Optical Networks," D. J. Blumenthal, *Avionics, Fiber-Optics and Photonics Workshop,* Session: MIL-AERO Networks & WDM Technology, St. Louis, MO, April 21-23 (2004) (Invited).

IC26. "Overview of the LASOR Project," D. J. Blumenthal, *Workshop on Optical packet switching and Optical Burst Switching*, Yokohama, Japan, July 12 (2004) (Invited).

IC27. "Integrated and Ultrafast Technologies for Optical Label Switching," D. J. Blumenthal, *OECC/COIN 2004: Optoelectronics and Communications Conference and Conference on Optical Internet,* Yokohama*,* Japan, July 12-16 (2004) (Invited).

IC28. "Optical Labeled Packet Switching and the LASOR Project," D. J. Blumenthal, *The 17th Annual Meeting of the IEEE Lasers and Electro-Optics Society (LEOS)*, **1**, November 7-11 (2004) (Invited).

IC29. "Optical Packet Switching," D. J. Blumenthal, *European Conference on Optical Communications (ECOC)*, Stockholm, Sweden, Paper ThU1, pp. 910-912, September 5-9 (2004) (Invited)

IC30. "Photonic Integration in UCSB's CSWDM and DOD-N Programs," D. J. Blumenthal, *DARPA/MTO Photonics Symposium*, San Francisco, CA, November 30–December 2 (2004) (Invited).

IC31. "Tunable Wavelength Converters to Enable High Functionality," D. J. Blumenthal and M. L. Mašanović, *IEEE LEOS Semiconductor Laser Workshop*, San Francisco, CA, May 21 (2004).

2005

IC32. "All-Optical Label Swapping and Routing," D. J. Blumenthal, *OFC 2005 Workshop on All-Optical Wavelength Conversion and Signal Processing for Next Generation Networks*, OFC 2005, Anaheim, CA, March 6-11 (2005) (Invited).

IC33. "Integration techniques for InP-based high-functionality photonic integrated circuits," M. L. Mašanović, J. S. Barton, V. Lal, M. N. Sysak, J. W. Raring, E. J. Skogen, D. J. Blumenthal, and L.

A. Coldren, *Integrated Photonics Research and Applications* (*IPRA 2005)*, San Diego, CA, Paper IMC1, April 11-13 (2005) (Invited).

IC34. "LASOR: Label Switched Optical Router and Photonic Integration," D. J. Blumenthal and M. Masanovic, *European Conference on Optical Communications (ECOC)*, Glasgow, Scotland, UK, September 26-30 (2005) (Invited).

IC35. "Optical Burst Switching for Unbuffered Span-Constrained Networks," R. Rajadury and D. J. Blumenthal, *IEEE/CreateNet BroadNets 2005 Conference*, Boston, MA, October 3-7 (2005) (Invited).

IC36. "Perspectives on the application of InP-based photonic crystal waveguides for optical signal processing," M. Davanço, A. Xing, E. L. Hu, and D. J. Blumenthal, *SPIE Optics East 2005 Section: "Active and Passive Optical Components for WDM Communications V*, Boston, MA, October 23 (2005) (Invited).

IC37. "Challenges for Supporting InP Photonic Development in the USA," D. J. Blumenthal, *OIDA Workshop on the Challenge for InP Photonic Development and the Optical Foundry*, Arlington, VA, November 2-3 (2005).

2006

IC38. "Monolithic Widely Tunable Packet Forwarding Chip in InP for All-Optical Label Switching," V. Lal, M. Masanovic, D. Wolfson, G. Fish, and D. Blumenthal, *Integrated Photonics Research and Applications (IPRA) Topical Meeting,* Paper ITuC3, Uncasville, CT, April 24-26 (2006) (Invited).

IC39. "Optical buffering for next-generation routers," E. F. Burmeister, D. J. Blumenthal, J. E. Bowers, *Opto-Electronics and Communications Conference*, Kaohsiung, Taiwan, July 3-7 (2006) (Invited).

IC40. "Optical 2R and 3R Regeneration with Dynamic Wavelength Switching Using a Monolithically Integrated, Widely Tunable Photocurrent Driven Wavelength Converter," M. N. Sysak, J. W. Raring, L. A Johansson, H. N. Poulsen, J. S. Barton, D. J. Blumenthal, and L. A. Coldren, *Proceedings of European Conference on Optical Communications (ECOC)*, Cannes, France, Paper Th3.4.1, September 24-28 (2006) (Invited).

IC41. "Architecture and Integration Technologies for LASOR: A Label Switched Optical Router," D. J. Blumenthal, *OSA Annual Meeting*, Rochester, NY, Paper FTuP1, October 9-12 (2006) (Invited).

IC42. J. E. Bowers, E. F. Burmeister, and D. J. Blumenthal, "Optical buffering and switching for optical packet switching," *International Conference on Photonics in Switching*, Crete, Greece, October 16-18 (2006) (Invited).

IC43. "Integrated Photonics and Paving the Way to Future Communications Systems and Applications," D. J. Blumenthal, *U.S. Congressional Subcommittee Briefing - Back to Basics: Defense Basic Research and the Future of California*, Washington, DC, December (2006)

2007

IC44. "Ultra-Fast Integrated Optical Interconnects for Short and Ultra-Short Reach Interconnects," D. J. Blumenthal, *Workshop on Ultra-Short Reach Interconnects*, *Optical Fiber Communications Conference (OFC '07),* Anaheim, CA, March 26 (2007) (Invited).

IC45. "Technologies for Building Fast Reconfigurable WDM Optical Networks," D. J. Blumenthal, *Optical Fiber Communications Conference (OFC '08) Workshop on All-Optical Signal Processing and Conditioning,* San Diego, CA, Paper OThF1, March 25-29 (2007) (Invited).

IC46. "Functional Optical Integrated Label Recovery and Tunable Wavelength Conversion Modules," D. J. Blumenthal, *LEOS Topical Meeting on Photonics in Switching*, San Francisco, CA, August 19-22 (2007) (Invited).

IC47. "Progress and Planned Future Directions in Optical Processing and Communications," D. J. Blumenthal, *DARPA/MTO Microsystems Technology Symposium*, San Jose, CA, March 5 – 7 (2007)(Invited).

IC48. "Ultra-Low-Loss Glass based Waveguides Integrated into Active InP PIC platforms," D. J. Blumenthal, J. Barton, M. L. Mashanovitch and D. John, *DARPA Workshop on Ultra Low Loss Waveguides (ULLW)*, Arlington, VA, June (2007).

2008

IC49. "All-Optical Clock Recovery with Retiming and Reshaping Using a Silicon Evanescent Mode Locked Ring Laser," B. R. Koch, A. W. Fang, H. N. Poulsen, H. Park, D. J. Blumenthal, J. E.

Bowers, R. Jones, M. J. Paniccia, and O. Cohen, *Optical Fiber Communications Conference (OFC '08),* San Diego, CA, Invited Paper OMN1, February 24-28 (2008) (Invited).

IC50. "Photonic Integrated Circuits for Optical Routing and Switching Applications," M. L. Mašanović, E. F. Burmeister, A. Tauke-Pedretti, B. Koch, M. Dummer, J. Summers, J. S. Barton, L. A. Coldren, J. E. Bowers, and D. J. Blumenthal, *IPNRA*, Paper IWC5, Boston, MA, July 13 – 16 (2008) (Invited).

IC51. "Recent progress on LASOR Optical Router and Related Integrated Technologies," Jonathon S. Barton, Milan L. Mašanović, Matthew M. Dummer, Anna Tauke-Pedretti, Emily F. Burmeister, Brian R. Koch, Joseph A. Summers, Larry A. Coldren, John E. Bowers, Daniel J. Blumenthal, *International Topical Meeting on Photonics in Switching*, Hokkaido University, Sapporo, Japan, August 4-7 (2008) (Invited).

IC52. "Distributed Feedback and Mode Locked Silicon Evanescent Lasers," Alexander W. Fang, Brian R. Koch, Erica Lively, Daniel J. Blumenthal, John E. Bowers, *Extended Abstracts of the 2008 International Conference on Solid State Devices and Materials*, Tsukuba, Ibarki, Japan, Paper E-9-1, pp. 974-975, September 24-26 (2008) (Invited).

IC53. "Photonic Integration for Optical Switching Applications," D. J. Blumenthal, *2008 Asia Optical Fiber Communication & Optoelectronic Exposition & Conference*, Shanghai, China, Paper SuF1, October 31–November 3, (2008) (Invited).

IC54. "Technologies for Building Fast Reconfigurable WDM Optical Networks," D. J. Blumenthal, *Optical Fiber Communications Conference (OFC '08) Workshop on All-Optical Signal Processing and Conditioning,* San Diego, CA, February (2008) (Invited).

2009

IC55. "Advanced Photonic Integrated Technologies for Optical Routing and Switching," M. L. Mašanović, E. Burmeister, M. M. Dummer, B. Koch, S. C. Nicholes, B. Jevremovic, K. Nguyen, V. Lal, J. E. Bowers, L. A. Coldren and D. J. Blumenthal, Optoelectronic Integrated Circuits XI, *Proceedings of SPIE, the International Society for Optical Engineering*, vol. 7219, 72190I, San Jose, CA, January 28 (2009) (Invited)

IC56. "Technologies and Systems of Optical Switching," D. J. Blumenthal and J. E. Bowers, *International Conference on Photonics in Switching*, Paper ThI1, Pisa, Italy, September 15 -19 (2009) (Invited).

IC57. "Optical Signal Processing: The Roadmap towards High-speed Optical Packet/Burst Switching," D. J. Blumenthal and M. Usami, *European Conference on Optical Communications (ECOC)*, Vienna, Austria, September 20 – 24 (2009) (Invited Tutorial).

IC58. "Photonic Technologies for an Integrated Optical Node for Avionic Networks," M. Mašanović, S. Nicholes, D. J. Blumenthal and J. S. Barton, *Avionics, Fiber-Optics and Photonics Conference*, Paper ThB2, San Antonio, TX, September 22-24 (2009) (Invited)

IC59. "Research Directions in photonic Integration," D. J. Blumenthal, *OIDA Photonic Integration Forum*, Santa Clara, CA, October 6 (2009).

IC60. D. J. Blumenthal, NSF US-Japan Future Networks Collaboration Workshop, Honolulu, HI, December 5 (2009)

2010

IC61. "Terabit Optical Ethernet," D. J. Blumenthal, *OSA Topical Meeting on Photonics in Switching*, Paper PWC4, Monterey, CA, July 25-28, (2010) (Invited)

IC62. "Integration Technologies for an 8x8 INP-Based Monolithic Tunable Optical Router with 40 Gb/s Line Rate per Port," S. C. Nicholes, M. L. Mašanović, B. Jevremović, E. Lively, L. A. Coldren and D. J. Blumenthal, *Indium Phosphide and Related Materials*, Kagawa, Japan, May 31-June 4 (2010) (Invited)

IC63. "Terabit Optical Ethernet (TOE) and Underlying PIC Technologies," D. J. Blumenthal, J. E. Bowers and J. S. Barton, International Symposium on Ultra-high Capacity Optical Communication and Related Optical Signal Processing and Devices, Technical University of Denmark, Lyngby, Sept. 16 – 17 (2010)

2011

IC64. "Photonic integrated circuits for optical routing and switching applications," Masanovic, M.L.; Barton, J.S.; Parker, J.; Nicholes, S.; Burmeister, E.F.; Jevremovic, B.; Bowers, J.E.; Coldren, L.A.; Blumenthal, D.J., *Optical Fiber Communication Conference and Exposition and the National Fiber Optic Engineers Conference (OFC/NFOEC)*, Los Angeles, CA (Invited)

IC65. "8-channel InP monolithic tunable optical router for packet forwarding," Nicholes, S.C.; Masanovic, M.L.; Jevremovic, B.; Lively, E.; Coldren, L.A.; Blumenthal, D.J., *Conference Optical Fiber Communication Conference and Exposition (OFC/NFOEC) and the National Fiber Optic Engineers*, Los Angeles, CA (Invited)

IC66. "Terabit Optical Ethernet for Avionics," D. J. Blumenthal, *Avionics, Fiber-Optics and Photonics Technology Conference (AVFOP),* Paper WC1, San Diego, *CA* (Invited)

IC67. "Terabit Optical Ethernet and Enabling Integration Technologies," D. J. Blumenthal, *Optical Fiber Communication Conference and Exposition and the National Fiber Optic Engineers Conference (OFC/NFOEC)*, Paper OTuP4, Los Angeles, CA (Invited)

2012

IC68. "A Comparison of Approaches for Ultra-Low-Loss Waveguides," Jared Bauters, Martijn R. Heck, Demis D. John, Jonathon S. Barton, Christiaan M. Bruinink, Arne Leinse, Rene Heideman, Daniel J. Blumenthal, John Bowers, *Conference on Optical Fiber and Communications (OFC/NFOEC)*, Paper OTu1I.3, Los Angeles, CA (Invited)

2013

IC69. "Ultra-Low Loss Waveguide Technology for On-Chip Digital Optical Synthesis," Exploratory DARPA/MTO workshop on Direct On-Chip Digital Optical Synthesis/Denver, Colorado, December (2013)

2014

IC70. "Deploying 400G In Volume," Fifth Annual OIF Technology Summit at OFC/ Los Angeles, CA, March (2014)

IC71. "Realization of Low SWAP+C Environmentally Robust Integrated Waveguide Optical Gyros and PNT Systems," DARPA Micro-PNT Fall 2014 PI Meeting/San Antonio, TX, November (2014)

2016

IC72. "Ultra-Low Loss SiN Waveguide Platform for Integrated Passive and Active Components for Next Generation Photonic Integrated Circuits," D. J. Blumenthal, *2016 Summer Topical Meeting Series, 11 - 13 July 2016, paper WA2.4 (Invited)*

IC73. "Chip-Scale Optical Gyros Based on Integrated Ultra Low Loss Waveguide Coils and Silicon Photonic Front Ends," D. J. Blumenthal, *2016 IEEE Photonics Conference, 29th Annual Conference of The IEEE Photonics Society*, 2 - 6 October (Invited)

IC74. "Chip-scale optical resonator enabled synthesizer (CORES) miniature systems for optical frequency synthesis," J. E. Bowers, A. Beling, D. Blumenthal, A. Bluestone, S. M. Bowers, T. C. Briles, L. Chang, S. A. Diddams, G. Fish, H. Guo, T. J. Kippenberg, T. Komljenovic, E. Norberg, S. Papp, M. H. P. Pfeiffer, K. Srinivasan, L. Theogarajan, K. J. Vahala, N. Volet, *2016 IEEE International Frequency Control Symposium (IFCS)*, New Orleans, LA, USA, 2016, pp. 1-5. doi: 10.1109/FCS.2016.7546782 (Invited)

2017

IC75. "Ultra-Low Loss Si3N4 Waveguide Passive and Active Next Generation Photonic Integration for Optical Gyroscopes and Communications Applications," Daniel J. Blumenthal, *European Conference on Integrated Optics 2017, Eindhoven, The Netherlands,* Paper W1.3, April 03-05, 2017 (Invited)

IC76. "Ultra-Low Loss Si_3N_4 Planar Waveguide Platform and Applications," D. J. Blumenthal*,* T. Huffman, M. Belt, S. Gundavarapu, *43rd European Conference on Optical Communication,* Gothenberg, Sweden, 17-21 September 2017 (Invited)

2018

IC77. "Integrated Low Linewidth Brillouin Lasers in Ultra Low Loss Si3N4 Waveguide Platform," Daniel J. Blumenthal, S. Gundavarapu, *CLEO 2018, Paper FW3E.3,* San Jose California , 13-18 May 2018 (Invited)

IC78. "Narrow Linewidth Stimulated Brillouin Scattering (SBS) Lasers," D. J. Blumenthal, S. Gundavarapu, G. M. Brodnik, D. Bose, R. O. Behunin, P. T. Rakich, K. D. Nelson, M. Puckett, J. Wu, *IEEE Photonics Conference 2018 (IPC 2018,)* Reston, VA, USA, September 30th to October 4th, 2018 (Invited)

IC79. *"*Photonic Integration Beyond Silicon*," Daniel J. Blumenthal, Microwave Photonics Conference (MWP), Toulouse, France,* 22 October to 25, 2018 (Invited)

2019

IC80. "Frequency Stabilized Lasers for Coherent Fiber Interconnects in the Datacenter," D. J. Blumenthal, H. Ballani, R.O. Behunin, J. E. Bowers, P. Costa, D. Lenoski, N. McKeown, P. Morton, S. B. Papp, P. T. Rakich, *2019 IEEE Optical Interconnects Conference (OI)*, Santa Fe, NM, USA, 2019, pp. 1-2, Santa Fe, NM, April 24 – 26, 2019 (Invited)

IC81. "Photonic Integrated Ultra-Narrow Linewidth Brillouin Lasers and Application to Precision Timing and Ultrafast Optics," Special Symposium on Ultrafast Optics RR, International Conference on Materials for Advanced Technologies (ICMAT 2019), 23 – 28 June 2019 in Singapore (Invited)

IC82. *"Integrated* Ultra-Narrow Linewidth Integrated Lasers and Their Applications*,"* Daniel J. Blumenthal, *Optical Society of America's (OSA)'s Integrated Photonics Research (IPR) 2019 conference*, 29 July to 01 August 2019, Burlingame, California, Paper IM2A.1 (Invited)

IC83. "Ultra-stable Integrated Lasers and Low-cost, Low-energy Coherent Data Center Interconnects," Daniel J. Blumenthal, *Optical Society of America's (OSA)'s* NETWORKS, 29 July to 01 August 2019, Burlingame, California, Paper NeM4D.1(Invited)

IC84. "Ultra-low Loss Waveguide Platforms for Integration of Quantum Circuits," Daniel J. Blumenthal, *Optical Society of America's (OSA)'s Symposium on Quantum Technologies Part 2*, 29 July to 01 August 2019, Burlingame, California, Paper QtW2E.2 (Invited)

IC85. "Ultra-Narrow Linewidth Photonic Integrated Lasers and Their Applications," *18th SBMO/IEEE MTT-S International Microwave and Optoelectronics Conference (IMOC) 2019, Aveiro, Portugal* (**Plenary**)

IC86. "Quiet Light for Low-Energy Scalable Data Center Interconnects," *IEEE GlobeComm*, Waikoloa, HI, December 9-13, 2019 (**Keynote**)

2020

IC87. "Ultra-Low Loss Ta_2O_5 Waveguides for Integrated Photonics," Daniel J. Blumenthal, *Integrated Optics XXIV conference of SPIE Photonics West 2020*, San Francisco, CA, Feb. 1-6, 2020 (Invited)

IC88. "Photonic integrated atom cooling and ultra-low linewidth stable Brillouin laser oscillators," Daniel J. Blumenthal*, Optical, Opto-Atomic, and Entanglement-Enhanced Precision Metrology II conference of SPIE Photonics West 2020*, San Francisco, CA, Feb. 1-6, 2020 (Invited)

IC89. "Integrated ultra-narrow linewidth stimulated Brillouin scattering (SBS) lasers and their applications," *Novel In-Plane Semiconductor Lasers XIX , SPIE Photonics West*, Paper 11301-34, San Francisco, CA, 1 - 6 February 2020, (Invited)

IC90. "Frequency Stabilized Ultra-Narrow Linewidth Frequency Combs for Coherent Interconnects in the Data Center," Daniel J. Blumenthal, Mark W. Harrington, Scott B. Papp, *IEEE SUM Topical Meetings 2020, Coherent optics for short-reach networks (CSN)*, Cabo San Lucas, Mexico, July 13-15, 2020 (Invited)

2021

IC91. "Integrated Ultra-Narrow Linewidth Ultra-Stable Brillouin Lasers and Their Application to PNT Applications," Daniel J. Blumenthal, *Conference on Lasers and Electrooptics (CLEO)*, Paper JTu1I.3, Virtual Conference, May 9 - 14, 2021 (Invited)

IC92. "Ultra-Narrow Linewidth Frequency Stabilized Photonic Integrated Lasers," Daniel J. Blumenthal, *OSA Frontiers in Optics/Laser Science APS/DLS (FIOS)*, Paper FM3E. 1, Virtual Conference, DOI: 10.1364/FIO.2021.FM3E.1, Oct. 31 – Nov. 4, Washington DC, 2021 (Invited)

IC93. "Integrated Ultra-Low Linewidth Stabilized Lasers and Applications," Daniel J. Blumenthal, *Optics Frontier: The 12th International Conference on Information Optics and Photonics (CIOP2021)*, Xi'an, China, July 23-26 (2021) (**Plenary**)

2022

IC94. "New Opportunities in Photonics for 100T," China International Optoelectronic Exposition (CIOE), Evolution from Pluggable to OIO, Enabling Ultra-Broadband Optical Connectivity for Future Data Centers, Virtual, Invited, 2022.

IC95. "Integrated Ultra-Narrow Linewidth Stabilized SBS Lasers," Daniel J. Blumenthal, *Conference on Optical Fiber and Communications (OFC),* Paper Tu3D.1, March 6-11, San Diego, CA (2022) (Invited)

IC96. "Photonic Integrated Frequency Stabilized Lasers and Their Use in Coherent WDM and Precision Scientific Applications," Daniel J. Blumenthal, *Conference on Optical Fiber and Communications (OFC), Integrated Photonics for Energy Efficient Data Centers and Computing: The ARPA-E ENLITENED Program*, March 6-11, San Diego, CA (2022) (Invited)

IC97. "Narrow linewidth lasers for low energy coherent communications," Grant M. Brodnik, Mark W. Harrington, John H. Dallyn, Debapam Bose, Wei Zhang, Liron Stern, Paul A. Morton, Ryan A. Behunin, Scott B. Papp, and Daniel J. Blumenthal, *Conference on Optical Fiber and Communications (OFC/NFOEC),* Paper Tu2I.3, March 6-11, San Diego, CA (2022) (Invited)

IC98. "Photonic integrated stabilized lasers and application to atomic and communications systems," Daniel J. Blumenthal, *2022 IEEE Summer Topicals Meeting Series*, July 11 – 13, Cabo San Lucas, 2022 (Invited)

2023

IC99. **"**Integrated stabilized lasers and circuits for atom cooling, trapping, and interrogation," D. J. Blumenthal, N. Chauhan, A. Isichenko, J. Wang, K. Liu, *SPIE Photonics West, Quantum Sensing, Imaging, and Precision Metrology Conference*, Paper 12447-71, San Francisco, CA, Jan 28-Feb 2, 2023 (Invited)

IC100. "Integrated Narrow Linewidth Lasers for Portable Fiber Sensing Systems," Daniel J. Blumenthal, *Conference on Optical Fiber and Communications (OFC), Panel on Optical Fiber Sensing: Technology and Emerging Applications*, San Diego, CA, 05 – 09 March 2023 (Invited)

IC101. "Visible Light Photonics for Atomic and Quantum Sensing and Computation," Daniel J. Blumenthal, Nitesh Chauhan, Andrei Isichenko, Jiawei Wang, Debapam Bose, Kaikai Liu, Mark W. Harrington, *Optica Quantum 2.0 Conference*, Denver, CO, June 19-22, 2023 (Invited)

IC102. "Stabilized integrated sources: linewidth and phase noise," Daniel J. Blumenthal, *IEEE Summer Topical Meeting Series, Visible Light Integrated Photonics and Application to Atomic and Quantum Sensing, Communications, and Computing (VLIP),* Paper QTu4C.2, Sicily, Italy, July 17-19, 2023 (Invited)

POST DEADLINE PAPERS

1980

PDP1. Mourou G, Blumenthal D, Stancampiano CV, Gabel CW. "Picosecond microwave pulse generation," *Eleventh International Quantum Electronics Conference, Journal of the Optical Society of America*, Post-Deadline Paper R.9, p. 1403 (1980).

1994

PDP2. D. J. Blumenthal and L. Thylen, "Coherent Crosstalk Induced BER Floors in NxN Space Photonic Switches," *Proceedings of the IEEE/LEOS Topical Meeting on Optical Networks and Enabling Technologies*, Lake Tahoe, NV, Postdeadline paper PDPI, pp. 1-2, July 6-13 (1994).

1995

PDP3. D. J. Blumenthal and N. Kothari, "Dense Multiwavelength Multistage Photonic Switching in Traveling Wave Semiconductor Optical Amplifiers," *OSA Spring Topical Meeting on Photonics in Switching*, Salt Lake City, UT, Postdeadline paper, March 17-21 (1995).

1999

PDP4. B. E. Olsson, P. Öhlen, L. Rau, G. Rossi, O. Jerphagnon, R. Doshi, D. S. Humphries, V. Kaman, J. E. Bowers, and D. J. Blumenthal, "Wavelength Routing of 40 Gbit/s Packets with 2.5 Gbit/s Header Erasure/Rewriting Using an All-Fiber Wavelength Converter," *Proceeding of the 25th European Conference on Optical Communication (ECOC '99)*, Nice, France, Postdeadline paper PD3-4, pp. 52-53, September 26-30 (1999).

2004

PDP5. H. F. Chou, J. E. Bowers, and D. J. Blumenthal, "Compact 160-Gb/s add-drop multiplexing with a 40-Gb/s base-rate," *Optical Fiber Communication Conference '04*, Los Angeles, CA, Postdeadline paper PDP28, February 22-27 (2004).

PDP6. W. Wang, L. Rau, and D. J. Blumenthal, "All-optical label switching/swapping of 160 Gbps variable length packets and 10 Gbps labels using a WDM Raman enhanced-XPM fiber wavelength converter with unicast/multicast operation," *Optical Fiber Communication Conference (OFC),* Postdeadline paper PDP8, February 22-27 (2004).

2005

PDP7. D. Wolfson, V. Lal, M. Masanovic, H. N. Poulsen, C. Coldren, G. Epps, D. Covelo, P. Donner, and D. J. Blumenthal, "All-optical asynchronous variable-length optically labeled 40Gbps packet switch," *European Conference on Optical Communications (ECOC)*, Postdeadline paper, Glasgow, Scotland, UK, September 26-30 (2005).

2006

PDP8. V. Lal, M. Mašanović, D. Wolfson, G. Fish, C. Coldren, and D. J. Blumenthal, "Monolithic Widely Tunable Optical Packet Forwarding Chip in InP for All-Optical Label Switching with 40 Gbps Payloads and 10 Gbps Labels," *European Conference on Optical Communications (ECOC)*, Postdeadline paper, Glasgow, Scotland, UK, September 26-30 (2006).

2009

PDP9. S. C. Nicholes, M. L. Mašanović., B. Jevremovic, E. Lively, L. A. Coldren, D. J. Blumenthal, "The world's first InP 8×8 monolithic tunable optical router (MOTOR) operating at 40 Gbps line rate per port," *Optical Fiber Communication Conference (OFC),* Postdeadline paper PDPB1, San Diego, CA, March 22 – 26 (2009).

JOURNAL PUBLICATIONS AND ARTICLES

1981

J1. "Picosecond Microwave Pulse Generation," G. Mourou, C. V. Stancampiano, and D. J. Blumenthal, *Applied Physics Letters*, **38**(6): 470-2, March (1981).

1987

J2. "Self-Routing Photonic Switching Demonstration with Optical Control," P. R. Prucnal, D. J. Blumenthal, and P. A. Perrier, *Optical Engineering*, **26**(5): 473-7, May (1987).

J3. "12.5 Gbit/s Fibre-Optic Network Using All-Optical Processing," P. R. Prucnal, D. J. Blumenthal, and M. A. Santoro, *Electronics Letters*, **23**(12): 629-30, June 4, (1987).

J4. "Performance of an 8x8 $LiNbO_3$ Switch Matrix as a Gigahertz Self-Routing Switching Node," D. J. Blumenthal, P. R. Prucnal, L. Thylen, and P. Granestrand, *Electronics Letters,* **23**(25): 1359-60, December 3 (1987).

1989

J5. "Laser Fabricated GaAs Waveguiding Structures," A. E. Willner, M. N. Ruberto, D. J. Blumenthal, D. V. Podlesnik, and R. M. Osgood, Jr., *Applied Physics Letters*, **54**(19): 1839-41, May 8 (1989).

1992

J6. "Demonstration of a Deflection Routing 2x2 Photonic Switch for Computer Interconnects," D. J. Blumenthal, K. Y. Chen, J. Ma, R. J. Feuerstein, and J. R. Sauer, *IEEE Photonics Technology Letters*, **4**(2): 169-73, February (1992).

1994

J7. "First Demonstration of Multihop All-Optical Packet Switching," D. J. Blumenthal, R. J. Feuerstein, and J. R. Sauer, *IEEE Photonics Technology Letters*, **6**(3): 457-60, March (1994).

1996

J8. "Coherent Crosstalk in Multichannel FSK/DD Lightwave Systems Due to Four-Wave Mixing in Semiconductor Optical Amplifiers," D. J. Blumenthal and N. C. Kothari, *IEEE Photonics Technology Letters*, **8**(1): 133-5, January (1996).

J9. "BER Floors Due to Heterodyne Coherent Crosstalk in Space Photonic Switches for Wavelength Division Multiplexed Networks," D. J. Blumenthal, P. Granestrand, and L. Thylen, *IEEE Photonic Technology Letters*, **8**(2): 284-6, February (1996).

J10. "Experimental Demonstration of an All-Optical Routing Node for Multihop Wavelength Routed Networks," D. J. Blumenthal, M. Shell, M. D. Vaughn, A. Wang, P. J. Rigole, and S. Nilsson*, IEEE Photonics Technology Letters*, **8**(10): 1391-3, October (1996).

J11. "Influence of Gain Saturation, Gain Asymmetry, and Pump/Probe Depletion on Wavelength Conversion Efficiency of FWM in Semiconductor Optical Amplifiers," N. C. Kothari and D. J. Blumenthal, *IEEE Journal of Quantum Electronics*, **32**(10): 1810-16, October (1996).

1997

J12. "All-Optical Updating of Subcarrier Encoded Packet Headers with Simultaneous Wavelength Conversion of Baseband Payload in Semiconductor Optical Amplifiers," M. D. Vaughn and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **9**(6): 827-9, June (1997).

J13. "Fiber Optic Links Supporting Baseband Data and Subcarrier-Multiplexed Control Channels and the Impact of MMIC Photonic/Microwave Interfaces," D. J. Blumenthal, J. Laskar, R. Gaudino, S. Han, M. Shell, and M. D. Vaughn, *IEEE JLT/MTT Joint Special Issue on Microwave Photonics II, Transactions on Microwave Theory and Techniques*, **45**(8): 1443-52, August 8 (1997).

J14. "A Novel Transmitter Architecture for Combined Baseband Data and Subcarrier-Multiplexed Control Links Using Differential Mach-Zehnder External Modulators," R. Gaudino and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **9**(10): 1397-9, October (1997).

1998

J15. "MOSAIC: A Multi-Wavelength Optical Subcarrier Multiplexed Controlled Network," R. Gaudino, M. Len, G. Desa, M. Shell, and D. J. Blumenthal, *IEEE Journal on Selected Areas in Communications*, *Special Issue on High Capacity Optical Networks*, **16**(7): 1270-85, September (1998).

J16. "OPERA: An Optical Packet Experimental Routing Architecture with Label Swapping Capability," A. Carena, M. D. Vaughn, R. Gaudino, M. Shell, and D. J. Blumenthal, *IEEE Journal of Lightwave Technology*, special issue on Photonic Packet Switching Technologies, Techniques, and Systems, **16**(12): 2135-45, December (1998).

1999

J17. "An Optical Communication Design Laboratory," J. A. Buck, H. W. Owen, III, J. P. Uyemura, C. M. Verber, and D. J. Blumenthal, *IEEE Transactions on Education*, **42**(2): 138-43, May (1999).

J18. "Remote Provisioning of a Reconfigurable WDM Multichannel Add/Drop Multiplexer," R. Gaudino and D. J. Blumenthal, *IEEE Photonics Technology Letters,* **11**(8): 1060-2, August (1999).

J19. "All-Optical Label Swapping with Wavelength Conversion for WDM-IP Networks with Subcarrier Multiplexed Addressing," D. J. Blumenthal, A. Carena, L. Rau, V. Curry, and S. Humphries, *IEEE Photonics Technology Letters*, 11(11): 1497-9 November (1999).

2000

J20. "Wavelength Routing of 40 Gbit/s Packets with 2.5 Gbit/s Header Erasure/Rewriting Using an All-Fiber Wavelength Converter," B. E. Olsson, P. Öhlen, L. Rau, G. Rossi, O. Jerphagnon, R. Doshi, D. S. Humphries, D. J. Blumenthal, V. Kaman, and J. E. Bowers, *IEEE Electronic Letters,* **36**(4): 345-7, February (2000).

J21. "Wavelength Dependence and Power Requirements of a Wavelength Converter Based on XPM in a Dispersion-shifted Optical Fiber," P. Öhlén, B.E. Olsson, and D. J. Blumenthal, *IEEE Photonic Technology Letters,* **12**(5): 522-4, May (2000).

J22. "All-optical Header Erasure and Penalty-free Rewriting in a Fiber-based High-speed Wavelength Converter," P. Öhlén, B. E. Olsson, and D. J. Blumenthal, *IEEE Photonics Technology Letters,* **12**(6): 663-5, June (2000).

J23. "Optical Dispersion Monitoring Technique Using Double Sideband Subcarriers," T. E. Dimmick, G. Rossi, and D. J. Blumenthal, *IEEE Photonics Technology Letters,* **12**(7): 900-2, July (2000).

J24. "Fully Monolithic Four Channel Transmitter IC for RF/Optical Subcarrier Multiplexed Communications," S. Han, C. -H. Lee, B. Matinpour, J. Laskar, D. J. Blumenthal, *IEEE Microwave and Guided Wave Letters,* **10**(7): 282-4, July (2000).

J25. "A simple and robust 40-Gb/s wavelength converter using fiber cross-phase modulation and optical filtering," B. E. Olsson, P. Öhlen, L. Rau, and D. J. Blumenthal, *IEEE Photonics Technology Letters,* **12**(7): 846-8, July (2000).

J26. "Optical SCM Data Extraction Using a Fiber Loop Mirror for WDM Network Systems," G. Rossi, O. Jerphagnon, B. E. Olsson, and D. J. Blumenthal, *IEEE Photonics Technology Letters,* **12**(7): 897-9, July (2000).

J27. "The λ-Scheduler: a Multiwavelength Scheduling Switch," J. P. Lang, E. Varvarigos, and D. J. Blumenthal, *IEEE Journal of Lightwave Technology,* **18**(8): 1049-62, August (2000).

J28. "Detailed transfer matrix method-based dynamic model for multisection widely tunable GCSR lasers," O. Lavrova and D. J. Blumenthal, *IEEE Journal of Lightwave Technology,* **11**(10): 1274-83, September (2000).

J29. "Accelerated Aging Studies of Multi-Section Tunable GCSR Lasers for Dense WDM Applications," O. Lavrova and D. J. Blumenthal, *IEEE Journal of Lightwave Technology*, **18**(12): 2196-9, December (2000).

J30. "A Transfer Function Approach to the Small-Signal Response of Saturated Semiconductor Optical Amplifiers," M. Nielsen, D. J Blumenthal, and J. Moerk, *IEEE Journal of Lightwave Technology,* **18**(12): 2151-7, December (2000).

J31. "Optical Performance Monitoring in Reconfigurable WDM Optical Networks Using Subcarrier Multiplexing," G. Rossi, T. Dimmick, and D. J. Blumenthal, *IEEE Journal of Lightwave Technology, Special Issue on Optical Networks*, **18**(12): 1639-48, December (2000).

2001

J32. "All-Optical Demultiplexing Using Fiber Cross-Phase Modulation (XPM) and Optical Filtering," B. E. Olsson and D. J. Blumenthal, *IEEE Photonics Technology Letters,* **13**(8): 875-7, August (2001).

J33. "WDM to OTDM Multiplexing Using an Ultra-fast All-optical Wavelength Converter," B. E. Olsson, L. Rau, and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **13**(9): 1005-7, September (2001).

2002

J34. "Pulse Extinction Ratio Improvement Using SPM in an SOA for OTDM Systems Applications," M. L. Nielsen, B. E. Olsson, and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **14**(2): 245-7, February (2002).

J35. "Pulsewidth distortion monitoring in a 40-Gb/s optical system affected by PMD," G. Bosco, B. E. Olsson and D. J. Blumenthal, *IEEE Photonics Technology Letters,* **14**(3): 307-9, March (2002).

J36. "10 Gbit/s Agile Wavelength Conversion with Nanosecond Tuning Times Using a Multisection Widely Tunable Laser," O. Lavrova, L. Rau, and D. J. Blumenthal, *IEEE Journal of Lightwave Technology*, **20**(4): 712-7, April (2002).

J37. "Single-MMIC Four-Channel Transmitter Module for Multichannel RF/Optical Subcarrier Multiplexed Communications Applications," S. Han, N. Lal, C. H. Lee, B. Matinpour, J. Laskar, and D. J. Blumenthal, *IEEE Transactions on Microwave Theory and Techniques*, **50**(4): 1173-9, April (2002).

J38. "Pulse Restoration by Filtering of Self-Phase Modulation Broadened Optical Spectrum," B. E. Olsson and D. J. Blumenthal, *IEEE Journal of Lightwave Technology,* **20**(7): 1113–7, July (2002).

J39. "Optical Mode Converter Integration with InP/InGaAsP Active and Passive Waveguides Using a Single Re-growth Process," X. Yan, M. L. Mašanović, E. J. Skogen, Z. Hu, D. J. Blumenthal, and L. A. Coldren, *IEEE Photonics Technology Letters*, **14**(9): 1249-51, September (2002).

J40. "Intelligent Optical Networking with Photonic Cross Connections," L. Ceuppens, O. L. Jerphagnon, J. Lang, A. Banerjee, and D. J. Blumenthal, *Proceedings of SPIE - the International Society for Optical Engineering,* **4910**: 1-14, September (2002).

J41. "Simultaneous All-Optical Demultiplexing of a 40-Gb/s signal to 4x10 Gb/s WDM Channels Using an Ultrafast Fiber Wavelength Converter," L. Rau, W. Wang, B. E. Olsson, Y. Chiu, H. F. Chou, and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **14**(12): 1725-7, December (2002).

2003

J42. "Low Power Penalty 80 to 10 Gbit/s OTDM Demultiplexer Using Standing-Wave Enhanced Electroabsorption Modulator with Reduced Driving Voltage," H. F. Chou, Y. J. Chiu, L. Rau, W. Wang, S. Rangarajan, J. E. Bowers, and D. J. Blumenthal, *Electronics Letters,* **39**(1): 94-5, January (2003).

J43. "Three-Dimensional MEMS Photonic Cross-Connect Switch Design and Performance," X. Zheng, V. Kaman, S. Yuan, Y. Xu, O. Jerphagnon, A. Keating, R. C. Anderson, H. N. Poulsen, B. Liu, J. R. Sechrist, C. Pusarla, R. Helkey, D. J. Blumenthal, and J. E. Bowers, *IEEE Journal of Selected Topics in Quantum Electronics*, **9**(2): 571-8, March/April (2003).

J44. "Directional Coupler Wavelength Filters Based on Waveguides Exhibiting Electromagnetically Induced Transparency," M. Davanço, P. Holmstrom, D. J. Blumenthal, L. Thylen, *IEEE Journal of Quantum Electronics,* **39**(4): 608-13, April (2003).

J45. "Analog Performance of an Ultrafast Sampled-Time All-Optical Fiber XPM Wavelength Converter," L. Rau, R. Doshi, S. Rangarajan, C. Yijen, D. J. Blumenthal, and J. E. Bowers, *IEEE Photonics Technology Letters,* **15**(4): 560-2, April (2003).

J46. "Multimode Interference-Based Two-Stage 1x2 Light Splitter for Compact Photonic Integrated Circuits," M. L. Mašanović, E. J. Skogen, J. S. Barton, J. M. Sullivan, D. J. Blumenthal, and L. A. Coldren, *IEEE Photonics Technology Letters,* **15**(5): 706-8, May (2003).

J47. "Monolithically Integrated Mach-Zehnder Interferometer Wavelength Converter and Widely Tunable Laser in InP," M. L. Mašanović, V. Lal, J. S. Barton, E. J. Skogen, L. A. Coldren, and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **15**(8): 1117-9, August (2003).

J48. "Regenerative 80-Gb/s Fiber XPM Wavelength Converter Using a Hybrid Raman/EDFA Gain-Enhanced Configuration," W. Wang, H. N. Poulsen, L. Rau, H. F. Chou, J. E. Bowers, D. J. Blumenthal, and L. Grüner-Nielsen, *IEEE Photonics Technology Letters*, **15**(10): 1416-8, October (2003).

J49. "Extinction Ratio Improvement by Strong External Light Injection and SPM in an SOA for OTDM Pulse Source Using a DBR Laser Diode," Z. Hu, M. Davanco, and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **15**(10): 1419-21, October (2003).

J50. "Compact 160-Gb/s Demultiplexer Using a Single-Stage Electrically Gated Electroabsorption Modulator," H. F. Chou, Y. J. Chiu, W. Wang, J. E. Bowers, and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **15**(10): 1458-60, October (2003).

J51. "40 GHz Optical Pulse Generation Using Strong External Light Injection of a Gain-switched High-Speed DBR Laser Diode," Zhaoyang Hu, Hsu-Feng Chou, John E. Bowers, and Daniel J. Blumenthal, *IEEE Photonics Technology Letters*, **15**(12): 1767-9, December (2003).

2004

J52. "Fabrication of InP-based two-dimensional photonic crystal membrane," A. Xing, M. Davanco, D. J. Blumenthal, and E. L. Hu, *Journal of Vacuum Science and Technology B: Microelectronics and Nanometer Structures*, **22**(1): 70-3, January (2004).

J53. "High-speed optical time-division-multiplexed/WDM networks and their network elements based on regenerative all-optical ultrafast wavelength converters," Lavanya Rau, Suresh Rangarajan, Wei Wang, Hsu-Feng Chou, Henrik N. Poulsen, John Bowers, and Daniel J. Blumenthal, *Journal of Optical Networking*, **3**(2): 100-18, February (2004).

J54. "Photocurrent-Assisted Wavelength (PAW) Conversion with Electrical Monitoring Capability Using a Traveling-Wave Electroabsorption Modulator," H. F. Chou, Y. J. Chiu, A. Keating, J. E. Bowers, and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **16**(2): 530-2, February (2004).

J55. "Simultaneous 160-Gb/s Demultiplexing and Clock Recovery by Utilizing Microwave Harmonic Frequencies in a Traveling-Wave Electroabsorption Modulator," H. F. Chou, Z. Hu, J. E. Bowers, D. J. Blumenthal, K. Nishimura, R. Inohara, and M. Usami, *IEEE Photonics Technology Letters*, **16**(2): 608-10, February (2004).

J56. "All-Optical Contention Resolution with Wavelength Conversion for Asynchronous Variable-Length 40 Gb/s Optical Packets," S. Rangarajan, Z. Hu, L. Rau, and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **16**(2): 689-91, February (2004).

J57. "Indium Phosphide-Based Optoelectronic Wavelength Conversion for High-Speed Optical-Networks," J. M. Hutchinson, J.F. Zheng, J.S. Barton, J. A. Henness, M. L. Mašanović, M. N. Sysak, L. A. Johansson, D. J. Blumenthal, L. A. Coldren, H. V. Demir, V. A. Sabnis, O. Fidaner, J. S. Harris, and D.A.B. Miller, *Intel Technology Journal: Optical Technologies and Applications*, **8**(2):160-171, May (2004).

J58. "40-Gb/s Optical Clock Recovery Using a Compact Traveling-Wave Electroabsorption Modulator-Based Ring Oscillator," Zhaoyang Hu, Hsu-Feng Chou, John E. Bowers, and Daniel J. Blumenthal, *IEEE Photonics Technology Letters*, **16**(5): 1376-8, May (2004).

J59. "Compact 160-Gb/s Add-Drop Multiplexer With a 40-Gb/s Base Rate Using Electroabsorption Modulators," H-F Chou, J. E. Bowers and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **16**(6): 1564-6, June (2004).

J60. "2.5 Gbit/s error-free wavelength conversion using a monolithically-integrated widely-tunable SGDBR-SOA-MZ transmitter and integrated photodetector," J. Barton, M. L. Masanovic, M. N. Sysak, J. M. Hutchinson, E. J. Skogen, D. J. Blumenthal and L. A. Coldren, *IEEE Photonics Technology Letters*, **16**(6): 1531-3, June (2004).

J61. "InP photonic crystal membrane structures: Fabrication accuracy and optical performance," A. Xing, M. Davanco, D. J. Blumenthal, and E. L. Hu, *Applied Physics Letters,* **85**(4):.522-4, July (2004).

J62. "Single-chip wavelength conversion using a photocurrent-driven EAM integrated with a widely tunable sampled-grating DBR laser," Sysak, M. N.; Barton, J. S.; Johansson, L. A.; Raring, J. W.; Skogen, E. J.; Masanovic, M. L.; Blumenthal, D. J.; and Coldren, L. A.*, IEEE Photonics Technology Letters*, **16**(9): 2093-5, September (2004).

J63. "Design and performance of a monolithically integrated widely tunable all-optical wavelength converter with independent phase control," M. L. Mašanović, V. Lal, J. A. Summers, J. S. Barton, E. J. Skogen, L. A. Coldren, and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **16**(10): 2299-2301, October (2004).

J64. "All-optical 160-Gb/s phase reconstructing wavelength conversion using cross-phase modulation (XPM) in dispersion-shifted fiber," Rau, L., Wang, W., Camatel, S., Poulsen, H., Blumenthal, D. J., *IEEE Photonics Technology Letters*, **16**(11): 2520-2, November (2004).

J65. "Analysis of an edge router for span-constrained optical burst switched (OBS) networks," Rajaduray, R., Ovadia, S., and Blumenthal, D. J., *IEEE Journal of Lightwave Technology*, **22**(11): 2693-2705, November (2004).

J66. "40-Gb/s optical packet clock recovery with simultaneous reshaping using a traveling-wave electroabsorption modulator-based ring oscillator," Z. Hu, K. Nishimura, H. F. Chou, L. Rau, M. Usami, J. E. Bowers, and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **16**(12): 2640-2, December (2004).

2005

J67. "160 Gb/s variable length packet 10 Gb/s-label all-optical label switching with wavelength conversion and unicast/multicast operation," Wang, W., Rau, L. G., and Blumenthal, D. J., *IEEE Journal of Lightwave Technology*, **23**(1): 211-8, January (2005).

J68. "Compact optical 3R regeneration using a traveling-wave electroabsorption modulator," Hsu-Feng Chou, Hu, Z., Bowers, J. E., and Blumenthal, D. J., *IEEE Photonics Technology Letters,* **17**(2): 486-8, February (2005).

J69. "40-GHz dual-mode-locked widely tunable sampled-grating DBR laser," Johansson, L. A., Zhaoyang Hu, Blumenthal, D. J., Coldren, L. A., Akulova, Y.A., and Fish, G.A., *IEEE Photonics Technology Letters*, **17**(2): 285-7, February (2005).

J70. "Raman-Enhanced Regenerative Ultrafast All-Optical Fiber XPM Wavelength Converter," Wang, W.; Poulsen, H. N.; Rau, L.; Chou, H. F.; Bowers, J. E.; and Blumenthal, D.J., *IEEE Journal of Lightwave Technology*, **23**(3): 1105-15, March (2005).

J71. "Widely Tunable Monolithically Integrated All-Optical Wavelength Converters in InP," Mašanović, M. L.; Lal, V.; Summers, J. A.; Barton, J. S.; Skogen, E. J.; Rau, L. G.; Coldren, L. A.; and Blumenthal, D. J., *IEEE Journal of Lightwave Technology*, **23**(3): 1350-62, March (2005).

J72. "Demonstration of 40 Gbit/s optical packet synchronization using fiber Bragg gratings and fast-tunable wavelength converters," C. H. Chen, D. Wolfson, L. A. Johansson, D. J. Blumenthal and L. A. Coldren, *IEEE Electronic Letters*, **42**(6): 367–9, March 16 (2005).

J73. "Optical Clock Recovery Circuits Using Traveling-Wave Electroabsorption Modulator-Based Ring Oscillators for 3R Regeneration," Z. Hu, H. F. Chou, K. Nishimura, M. Usami, J. E. Bowers, and D.J. Blumenthal, *IEEE Journal of Selected Topics in Quantum Electronics, Special Issues on Integrated Optoelectronics*, **11**(2): 329-337, March/April (2005).

J74. "Detailed characterization of slow and dispersive propagation near a mini-stop-band of an InP photonic crystal waveguide," Marcelo Davanço, Aimin Xing, James Raring, Evelyn L. Hu, Daniel J. Blumenthal, *Optics Express*, **13**(13): 4931-8, June 27 (2005).

J75. "Optical Label Swapping Using Payload Envelope Detection Circuits," Z. Hu, R. Doshi, H-F. Chou, H.P. Poulsen, D. Wolfson, J.E. Bowers, and D.J. Blumenthal, *IEEE Photonics Technology Letters*, **17**(7): 1537-9, July (2005).

J76. "Quantum Well Intermixed Monolithically-Integrated Widely -Tunable All-Optical Wavelength Converter Operating at 10Gps Across the C-Band," V. Lal, M.L. Mašanović, E. J. Skogen, J. W Raring, J. A. Summers, L. A. Coldren and D. J. Blumenthal, *IEEE Photonics Technology Letters,* **17**(8): 1689-91, August (2005).

J77. "Accurate Measurement of High Extinction Ratios of Ultrafast Pulsed Sources," S. Camatel, W. Wang, L. Rau and D. J. Blumenthal, *IEEE Photonics Technology Letters*, **17**(9): 1689-91, August (2005).

J78. "Transmission measurement of tapered single-line defect photonic crystal waveguides," A. Xing, M. Davanco, D.J. Blumenthal, and E. L. Hu, *IEEE Photonics Technology Letters*, **17**(10): 2092-4, October (2005).

J79. "Cross-Phase Modulation Efficiency in Offset Quantum Well and Centered Quantum Well Semiconductor Optical Amplifiers," M. L. Mašanović, V. Lal, E. J. Skogen, J. S. Barton, J. A. Summers, J. W. Raring, L. A. Coldren, and D. J. Blumenthal, *IEEE Photonics Technology Letters*, 17(11): 2364-6, November (2005).

2006

J80. "All-Optical Packet Compression of Variable Length Packets From 40 to 1500 B Using a Gated Fiber Loop," Suresh Rangarajan, Henrik N. Poulsen, and Daniel J. Blumenthal, *IEEE Photonics Technology Letters*, **18**(2): 322-4, January (2006).

J81. "Performance Optimization of an InP-Based Widely Tunable All-Optical Wavelength Converter Operating at 40 Gb/s," Vikrant Lal, Milan L. Masanovic, Joseph A. Summers, Larry A. Coldren, and Daniel J. Blumenthal, *IEEE Photonics Technology Letters*, **18**(4): 577-9, February 15 (2006).

J82. "Single-Chip, Widely-Tunable 10 Gbit/s Photocurrent-Driven Wavelength Converter Incorporating a Monolithically Integrated Laser Transmitter and Optical Receiver," M. N. Sysak, J. W. Raring, J. S. Barton, M. Dummer, A. Tauke-Pedretti, H. N. Poulsen, D. J. Blumenthal, and L. A. Coldren, *Electronics Letters*, **42**(11): 657-8, May 25 (2006).

J83. "Compact broadband photonic crystal filters with reduced back-reflections for monolithic InP-based photonic integrated circuits," M. Davanço, A. M. Xing, J. W. Raring, E. L. Hu and D. J. Blumenthal, *IEEE Photonics Technology Letters,* **18**(10): 1155–7, May (2006).

J84. "Integrated Optical Payload Envelope Detection and Label Recovery Device for Optical Packet Switching Networks," Brian R. Koch, Zhaoyang Hu, John E. Bowers, and Daniel J. Blumenthal, *Optics Express*, **14**(12): 5073–8, June 12 (2006).

J85. "A Single Regrowth Integration Platform for Photonic Circuits Incorporating Tunable SGDBR Lasers, and Quantum Well EAMs," Matthew N. Sysak, James W. Raring, Jonathon S. Barton, Matthew Dummer, Daniel J. Blumenthal, and Larry A. Coldren, *IEEE Photonics Technology Letters*, **18**(15): 1630-2, August (2006).

J86. "Payload-envelope detection and label-detection integrated photonic circuit for asynchronous variable-length optical-packet switching with 40-gb/s RZ payloads and 10-gb/s NRZ labels," Koch, B. R., Zhaoyang Hu, Bowers, J. E., and Blumenthal, D. J., *IEEE Journal of Lightwave Technology*, **24**(9): 3409–17, September (2006).

J87. "All-Optical Payload Envelope Detection for Variable Length 40 Gbps Optically Labeled Packets," Brian R. Koch, Zhaoyang Hu, John E. Bowers, Daniel J. Blumenthal, *IEEE Photonics Technology Letters*, **18**(17): 1846 – 8, September (2006).

J88. "Widely tunable monolithically integrated 40Gbit/s wavelength converter with label modulation function," W. B. Zhao, M. L. Masanovic, V. Lal, D. Wolfson, G. Fish, and D. J. Blumenthal, *Electronics Letter*s, **42**(21): 1241-3, October 12 (2006).

J89. "Extinction ratio regeneration, signal reamplification (2R), and broadband wavelength switching using a monolithically integrated photocurrent driven wavelength converter," M. N. Sysak, J. W. Raring, J. S Barton, H. N. Poulsen, D. J. Blumenthal, and L. A. Coldren, *Optics Express*, **14**(23): 11348 – 53, November (2006).

J90. "Broadband Notch Filters Based on Quasi-2-D Photonic Crystal Waveguides for InP-Based Monolithic Photonic-Integrated Circuits," M. Davanço, A. Xing, J. W. Raring, E. L. Hu, D. J. Blumenthal, *IEEE Journal of Selected Topics in Quantum Electronics*, **12**(6): 1164 – 74, November/December (2006).

J91. "Broadband return-to-zero wavelength conversion and signal regeneration using a monolithically integrated, photocurrent-driven wavelength converter," M. N. Sysak, L. A. Johansson, J. W. Raring, H. N. Poulsen, D. J. Blumenthal, and L. A. Coldren, *Electronics Letters*, **42**(25): 1479 – 81, December (2006).

2007

J92. "Monolithic Wavelength Converters for High-Speed Packet-Switched Optical Networks," V. Lal, M. L. Mašanović, J. A. Summers, G. Fish, and D. J. Blumenthal, *IEEE Journal of Selected Topics in Quantum Electronics*, **13(**1): 49 – 57, January/February (2007).

J93. "Analysis of Digital System Performance in EAM-Based Photocurrent Driven Wavelength Converter," M. N. Sysak, J. W. Raring, M. Dummer, H. N. Poulsen, D. J. Blumenthal, and L. A. Coldren, *IEEE Photonics Technology Letters,* **19**(4): 215–7, February (2007).

J94. "Monolithic Mode-Locked Laser and Optical Amplifier for Regenerative Pulsed Optical Clock Recovery," B. R. Koch, J. S. Barton, M. Masanovic, Z. Hu, J. E. Bowers, and D. J. Blumenthal, *IEEE Photonics Technology Letters,* **19**(9): 641-3, May 1(2007).

J95. "Dispersive phase response in optical waveguide-resonator system," Y. S. Choi, M. Davanço, K. H. Lee, C. F. Wang, J. Mack, D. Blumenthal, and E. L. Hu*, Applied Physics. Letters,* **90**(19): 191108-191108-3, May (2007).

J96. "Design and Operation of a Monolithically Integrated Two-Stage Tunable All-Optical Wavelength Converter," J. A. Summers, M. L. Mašanović, Lal, V., and Blumenthal, D. J., *IEEE Photonics Technology Letters*, **19**(16): 1248–50, August (2007).

J97. "A Monolithic All-Optical Push–Pull Wavelength Converter," J. A. Summers, M. L Mašanović. V. Lal, and D. J. Blumenthal*, IEEE Photonics Technology Letters*, **19**(21): 1768 – 70, November (2007).

J98. "A 10-Gb/s Monolithically Integrated Filterless InGaAsP/InP Widely Tunable Wavelength Converter with Conversion Gain," M. N. Sysak, J. W. Raring, J. S. Barton, H. N. Poulsen, D. J.

Blumenthal, and L. A. Coldren, *IEEE Journal of Lightwave Technology*, **25**(12): 3748-59 December (2007).

2008

J99. "A racetrack mode-locked silicon evanescent laser," A. W. Fang, B. R. Koch, K. P. Gan, H. Park, R. Jones, O. Cohen, M. J. Paniccia, D. J. Blumenthal, and J. E. Bowers, *Optics Express*, **16**(2): 1393-8, January (2008).

J100. "A comparison of optical buffering technologies," E. F. Burmeister, D. J. Blumenthal and J. E. Bowers, *Optical Switching and Networking*, **5**(1): 10-18, March (2008).

J101. "SOA gate array recirculating buffer with fiber delay loop," E. F. Burmeister, J. P. Mack, H. N. Poulsen, J. Klamkin, L. A. Coldren, D. J. Blumenthal, and J. E. Bowers, *Optics Express*, **16**(12): 8451-6, June 9 (2008).

J102. "An Integrated Recirculating optical buffer," H. Park, John P. Mack, Daniel J. Blumenthal, and John E. Bowers, *Optics Express,* **16**(15): 11124-11131, July 10 (2008).

J103. "Variable length optical packet synchronizer," J. P. Mack, H. N. Poulsen, and D. J. Blumenthal, *IEEE Photonics Technology Letters,* **20**(14): 1252-4, July 15 (2008).

J104. "Synchronously loaded optical packet buffer," J P. Mack, E .F. Burmeister, H .N. Poulsen, J. E. Bowers, and D. J. Blumenthal, *IEEE Photonics Technology Letters,* **20**(21): 1757 - 9, November 1 (2008).

2009

J105. "Mode Locked and Distributed Feedback Silicon Evanescent Lasers," B. R. Koch, A. W. Fang, E. Lively, R. Jones, O. Cohen, D. J. Blumenthal, and J. E. Bowers, *Laser and Photonics Review,* **3**(4): 355-69, July (2009).

J106. "Photonic integrated circuit optical buffer for packet-switched networks," E. F. Burmeister, J. P. Mack, H. N. Poulsen, M. L. Mašanović, B. Stamenić, D. J. Blumenthal and J. E. Bowers, Optics Express, 17 (8): 6629-6635, April (2009)

J107. "Mode Locked and Distributed Feedback Silicon Evanescent Lasers," B. R. Koch, A. W. Fang, E. Lively, R. Jones, O. Cohen, D. J. Blumenthal and J. E. Bowers, Laser and Photonics Review, 3(4): 355-69, July (2009)

2010

J108. "Synchronous Optical Packet Buffers," J. P. Mack, E. F. Burmeister, J. M. Garcia, H. N. Poulsen, B. Stamenic, G. Kurczveil, K. N. Nguyen, K. Hollar, J. E. Bowers and D. J. Blumenthal, To Appear in *IEEE Journal of Selected Topics in Quantum Electronics* (2010)

J109. "Optical Packet Buffers for Backbone Internet Routers," N. Behesti, E. Burmeister, Y. Ganjali, J. E. Bowers, D. J. Blumenthal and N. McKeown, IEEE/ACM Transactions on Networking (2010)

J110. "Ultra-low loss Si3N4 waveguides with low nonlinearity and high power handling capability," Ming-Chun Tien, Jared F. Bauters, Martijn J. R. Heck, Daniel J. Blumenthal and John E. Bowers, Optics Express, November 2010 / Vol. 18, No. 23 (2010)

2011

J111. "Ultra-low-loss high-aspect-ratio Si3N4 waveguides," Jared Bauters. Martijn J. R. Heck, Demis John, Daoxin Dai, Ming-Chun Tien, Jonathon S. Barton, Arne Leinse, René G. Heideman, Daniel J. Blumenthal, and John E. Bowers, Optics Express, February 2011 / Vol. 19, No. 4

J112. "Low-loss Si3N4 arrayed-waveguide grating (de)multiplexer using nano-core optical waveguides," Daoxin Dai, Zhi Wang, Jared F. Bauters, M.-C. Tien, Martijn J. R. Heck, Daniel J. Blumenthal, and John E Bowers, *Optical Express, Vol. 19, No. 15, July (2011)*

J113. "Planar waveguides with less than 0.1 dB/m propagation loss fabricated with wafer bonding," Jared F. Bauters, Martijn J. R. Heck, Demis D. John, Jonathon S. Barton, Christiaan M. Bruinink, Arne Leinse, René G. Heideman, Daniel J. Blumenthal, and John E. Bowers, *Optics Express, 21 Vol. 19, No. 24, November (2011)*

J114. "Ultra-high quality factor planar Si3N4 ring resonators on Si substrates," Ming-Chun Tien, Jared F. Bauters, Martijn J. R. Heck, Daryl T. Spencer, Daniel J. Blumenthal, and John E. Bowers, *Optics Express, Vol. 19, No. 14, July (2011)*

2012

J115. "Integrated Hybrid Silicon 50Gb/s DQPSK Receiver," Kimchau Nguyen, Jonathan D. Peters, Daryl T. Spencer, Daniel J. Blumenthal and John E. Bowers, *Optics Express, Vol. 20, Issue 18, pp. 19726-19734 (2012)*

J116. "Multilayer Platform for Ultra-Low-Loss Waveguide Applications." Demis D. John, Martijn J. R. Heck, Jared F. Bauters, Renan Moreira, Jonathon S. Barton, John E. Bowers, and Daniel J. Blumenthal, *IEEE Photonics Technology Letters, Vol. 24, No. 11, June 1 (2012)*

2013

J117. "Sidewall Gratings in Ultra-Low-Loss Si3N4 Planar Waveguides," Michael Belt, Jock Bovington, Renan Moreira, Jared F. Bauters, Martijn J. R. Heck, Jonathon S. Barton, John E. Bowers and Daniel J. Blumenthal, *Optics Express, Vol. 21, Issue 1, pp. 1181-1188 (2013)*

J118. "Ultra-low-loss Planar Si3N4 Waveguide Polarizers," J. F. Bauters, M. J. R. Heck, D. Dai, J. S. Barton, D. Blumenthal, and J. E. Bowers, *IEEE Photonics Journal, February 1, (2013)*

J119. "Integrated Ultra-Low-Loss 4-Bit Tunable Delay for Broadband Phased Array Antenna Applications," Moreira, R.L.; Garcia, J.; Li, W.; Bauters, J.; Barton, J.S.; Heck, M.J.R.; Bowers, J.E.; Blumenthal, D.J., *IEEE Photonics Technology Letters, vol.25, no.12, pp.1165,1168, June15 (2013)*

J120. "Arrayed narrow linewidth erbium-doped waveguide-distributed feedback lasers on an ultra-low-loss silicon-nitride platform," M. Belt, T. Huffman, M. L. Davenport, W. Li, J. S. Barton, and D. J. Blumenthal, *Opt. Letters 38 (22), 4825-4828 (2013)*

2014

J121. "Design of integrated hybrid silicon waveguide optical gyroscope," Sudharsanan Srinivasan,* Renan Moreira, Daniel Blumenthal and John E. Bowers, *Optics Express, Vol. 22, No. 21, 20 October (2014)*

J122. "Erbium-doped waveguide DBR and DFB laser arrays integrated within an ultra-low-loss Si3N4 platform," M. Belt and D. J. Blumenthal, *Optics Express, Vol. 22 Issue 9, pp.10655-10660 (2014)*

2015

J123. "Monolithically integrated dual-channel coherent receiver with widely tunable local oscillator for 100 Gbps dual-polarization quadrature phase shift keying applications," Skahan P.J., Gundavarapu S., Nguyen K.N., Baney D.M., Blumenthal D.J., *Opt Lett. 2015 Sep 15; 40(18):4313-6. doi: 10.1364/OL.40.004313 (2015).*

2016

J124. "Frequency modulated lasers for interferometric optical gyroscopes," Tin Komljenovic, Minh A. Tran, Michael Belt, Sarat Gundavarapu, Daniel J. Blumenthal, and John E. Bowers, *Optics Letter, Vol. 41, No. 8, April 15, pp. 1773-1776 (2016)*

J125. "Programmable Eye-Opener Lattice Filter for Multi-Channel Dispersion Compensation using an Integrated Compact Low-Loss Silicon Nitride Platform," Renan Moreira, Sarat Gundavarapu and Daniel J. Blumenthal, *Optics Express, vol. 24 No. 15 (2016)*

2017

J126. "Ultra-low Loss Large Area Waveguide Coils for Integrated Optical Gyroscopes," T. Huffman, M. Davenport, M. Belt, J. E. Bowers, and D. J. Blumenthal, *IEEE Photonics Technology Letters (PTL), Vol. 29, No. 2, pp. 185-188 (2017)*

J127. "Ultra-low-loss Ta_2O_5-core/SiO_2-clad planar waveguides on Si substrates," M. Belt, M. L. Davenport, J. E. Bowers, and D. J. Blumenthal, *Optica* 4, 532-536 (2017)

J128. "Integrated optical driver for interferometric optical gyroscopes," M. Tran, T. Komljenovic, J. Hulme, M. J. Kennedy, D. J. Blumenthal, J. Bowers, *Optics Express*, vol. 25, no. 4, 20 Feb. 2017.

2018

J129. "Interferometric Optical Gyroscope Based on an Integrated Si_3N_4 Low-Loss Waveguide Coil,"S. Gundavarapu, M. Belt, T. A. Huffman, M. A. Tran, T. Komljenovic, J. E. Bowers and D. J. Blumenthal, *Journal of Lightwave Technology*, 36(4), pp. 1185-1191 Feb. 15, 2018.

J130. "Integrated Resonators in an Ultralow Loss Si3N4/SiO2Platform for Multifunction Applications, "T. A. Huffman, G. M. Brodnik, C. Pinho, S. Gundavarapu, D. Baney and D. J. Blumenthal, *IEEE Journal of Selected Topics in Quantum Electronics,* vol. 24, no. 4, pp. 1-9, July-Aug. 2018.

J131. "Fundamental noise dynamics in cascaded-order Brillouin lasers," R. O. Behunin, N. T. Otterstrom, P. T. Rakich, S. Gundavarapu, and D. J. Blumenthal, Phys. Rev. A 98, 023832 –17 August 2018.

2019

J132. "Sub-hertz fundamental linewidth photonic integrated Brillouin laser," S. Gundavarapu, G. M. Brodnik, M. W. Puckett, T. Huffman, D. Bose, R. O. Behunin, J. Wu, T. Qiu, C. Pinho, N. Chauhan, J. Nohava, P. T. Rakich, K. D. Nelson, M. Salit, D. J. Blumenthal*,, Nat. Photon.* 2019, **13**(1)**:** 60-67.

J133. "High Index Contrast Photonic Platforms for On-Chip Raman Spectroscopy," A. Raza, S. Clemmen, P. Wuytens, M. de Goede, A. S. K.Tong, N. Le Thomas, C. Liu, J. Suntivich, A. G. Skirtach, S. M. Garcia-Blanco, D. J. Blumenthal, J. S. Wilkinson, R. Baets, *Opt Express,* 2019;27(16):23067-79

2020

J134. "Data Converter Interleaving: Current Trends and Future Perspectives," C. Schmidt, H. Yamazaki, G. Raybon, P. Schvan, E. Pincemin, S. J. Ben Yoo, D. J. Blumenthal, T. Mizuno, and R. Elschner, *IEEE Communications Magazine* **58**(5): 19-25 (2020)

J135. "Low-loss low thermo-optic coefficient Ta2O5 on crystal quartz planar optical waveguides," Zhao, Q., Behunin, R. O., Rakich, P. T., Chauhan, N., Isichenko, A., Wang, J., Hoyt, C., Fertig, C., Lin, M.- h, Blumenthal, D. J., *APL Photonics.* 5(11):116103 (2020)

2021

J136. "422 Million intrinsic quality factor planar integrated all-waveguide resonator with sub-MHz linewidth," M. Puckett , K. Liu , N. Chauhan , Q. Zhao , N. Jin , H. Cheng , J. Wu , R. O. Behunin , P. T. Rakich , K. Nelson, D. J. Blumenthal, *Nature Communications*, 2021;12(1):934.

J137. "Optically synchronized fibre links using spectrally pure chip-scale lasers," Brodnik, G. M. Harrington, M. W., Dallyn, J. H., Bose, D., Zhang, W., Stern, L., Morton, P. A., Behunin, R. O., Papp, S. B., Blumenthal, D. J.*, Nature Photonics*. 2021;15(8):588-93.

J138. "Visible light photonic integrated Brillouin laser," N. Chauhan, A. Isichenko, K. Liu, J. Wang, Q. Zhao, R. O. Behunin, P. T. Rakich, A. M. Jayich, C. Fertig, C. W. Hoyt, D. J. Blumenthal, *Nature Communications*, August 3, 2021 DOI: 10.1038/s41467-021-24926-8

J139. "Integrated reference cavity with dual-mode optical thermometry for frequency correction," Zhao, Q., Harrington, M. W., Isichenko, A., Liu, K., Behunin, R. O., Papp, S. B., Rakich, P. T., Hoyt, C. W., Fertig, C., Blumenthal, D. J. *Optica,* 8 (11), 1481-1487, DOI: 10.1364/OPTICA.432194

2022

J140. "Ultra-low loss visible light waveguides for integrated atomic, molecular, and quantum photonics," Chauhan, Nitesh, Wang, Jiawei, Bose, Debapam, Liu, Kaikai, Compton, R. L., Fertig, C., Hoyt, C. W., Blumenthal, Daniel J., *Optics Express*, 30 (5), 6960-6969, (2022) DOI: 10.1364/OE.448938

J141. "Ultra-low 0.034 dB/m loss wafer-scale integrated photonics realizing 720 million Q and 380 ŒºW threshold Brillouin lasing," Liu, K., Jin, N., Cheng, H., Chauhan, N., Puckett, M. W., Nelson, K. D., Behunin, R. O., Rakich, P. T., Blumenthal, D. J., Optics Letters, 47(7): 1855-1858. (2022)

J142. "36 Hz integral linewidth laser based on a photonic integrated 4.0 m coil resonator," Liu, K., Chauhan, N., Wang, J., Isichenko, A., Brodnik, G. M., Morton, P. A., Behunin, R. O., Papp, S. B. Blumenthal, D. J. (2022). Optica **9**(7): 770-775.

J143. "Thermal and driven noise in Brillouin lasers," John H. Dallyn, Kaikai Liu, Mark Harrington, Grant Brodnik, Peter T. Rakich, Daniel J. Blumenthal, Ryan O. Behunin, *Physical Review A* 105(4): 043506 (2022)

J144. "Silicon nitride stress-optic microresonator modulator for optical control applications," Wang, Jiawei, Liu, Kaikai, Harrington, Mark W., Rudy, Ryan Q., Blumenthal, Daniel J., *Optics Express* **30**(18): 31816-31827. (2022)

J145. "Photonic circuits for laser stabilization with integrated ultra-high Q and Brillouin laser resonators." Liu, Kaikai, Dallyn, John H., Brodnik, Grant M., Isichenko, Andrei, Harrington, Mark W., Chauhan,

Nitesh, Bose, Debapam., Morton, Paul A., Papp, Scott B., Behunin, Ryan O., Blumenthal, Daniel J., *APL Photonics* **7**(9): 096104. (2022)

J146. "Ultra-low loss quantum photonic circuits integrated with single quantum emitters." A. Chanana, H. Larocque, R. Moreira, J. Carolan, B. Guha, E. G. Melo,V. Anant, J. D. Song, D. Englund, D. J. Blumenthal, K. Srinivasan, M. Davanco, *Nature Communications* **13**(1): 7693, 2022.

2023

J147. "Integrated programmable strongly-coupled three ring resonator photonic molecule with ultra-low power piezo-electric control," J. Wang, K. Liu, A. Isichenko, R. Q. Rudy, D. J. Blumenthal, *Accepted for Publication in Optics letters*, 2023.

CONFERENCE PAPERS

1980

C1. Mourou, Gerard, Blumenthal, Daniel, Stancampiano, Charles V, Gabel, Conger W, "Picosecond microwave pulse generation," *Eleventh International Quantum Electronics Conference*, Vol. 70, Postdeadline Paper R.9, p. 1403, June 25, (1980).

1987

C2. P. R. Prucnal, D. J. Blumenthal, and P. A. Perrier, "Self-Routing Optical Switch with Optical Processing," *Proceedings of the Topical Meeting on Photonic Switching*, Incline Village, NV, Gustafson and Smith eds. Springer-Verlag, pp. 193-5, March 18-20 (1987).

1988

C3. D. J. Blumenthal, P. R. Prucnal, L. Thylen, and P. Granestrand, "Self-Routing of 12.5 Gbit/s Data Through an 8x8 $LiNbO_3$ Optical Crossbar Switch Matrix with Gigahertz Switching Speed," *Technical Digest of the Optical Fiber and Communication Conference (OFC '88)*, New Orleans, LA, Paper THL1 9, vol. 1**:** 183-4, January 25-28 (1988).

C4. D. J. Blumenthal and L. Thylen, "A Parallel Optical Processor for Control of Optical Crossbar Switches," *Proceedings of the 14th European Conference on Optical Communications (ECOC '88)*, Brighton, England, Conference publication 292, vol. 1: 268-71, September 11-15 (1988).

1989

C5. D. J. Blumenthal, "Optical Parallel Processor for Control of Photonic Switching Networks," *OSA Proceedings on Photonic Switching*, Salt Lake City, UT, Midwinter and Hinton eds. vol. 3: 280-5, March 1-3 (1989).

1990

C6. D. J. Blumenthal, "A Photonic Batcher-Banyan Switch Architecture with Optical Control," *Annual Meeting of the Optical Society of America (OSA '90)*, Boston, MA, Paper ThY28, pp. 194-5, November 8 (1990).

1992

C7. D. J. Blumenthal, J. Ma, K. Y. Chen, and J. R. Sauer, "A Two-by-Two Photonic Switch for Computer Interconnects," *Technical Digest of the Optical Fibers and Communications Conference (OFC '92)*, San Jose, CA, Paper H8, vol. 5: 135-6, February 2-7 (1992).

C8. D. J. Blumenthal, J. R. Sauer, H. Lee, and B. Van Zeghbroeck, "A Packet-Rate Real-Time Reconfigurable Photonic Switch for Computer Interconnects," *Proceedings of the IEEE/LEOS Topical Meeting on Optical Multi-Access Networks*, Santa Barbara, CA, Paper MB3, pp. A11-A12, August 3-5 (1992).

C9. D. J. Blumenthal and J. R. Sauer, "Multiwavelength Information Processing in Gigabit Photonic Switching Networks," *Proceedings of the SPIE OE/FIBERS '92, Meeting on Multigigabit Fiber Communications Conference*, Boston, MA, vol. 1787: pp. 43-54, September 8-9 (1992).

1993

C10. D. J. Blumenthal and J. R. Sauer, "Multiwavelength Logic Gates with High Computational Efficiency," *Technical Digest of the Topical Meeting on Optical Computing*, Palm Springs, CA, Paper OWA2-1, vol. 7: 64-7, March 16-19 (1993).

1994

C11. V. Ramanan, H. F. Jordan, J. R. Sauer and D. J. Blumenthal, "An Extended Fiber-Optic Backplane for Multiprocessors," *Proceedings of the Twenty-Seventh Hawaii International Conference on System Sciences*, Los Alamitos, CA, vol. 1: 462-70, January 4-7 (1994).

C12. D. J. Blumenthal, R. J. Feuerstein, and J. R. Sauer, "A Multihop 2x2 Photonic Packet Switch with Header Reinsertion," *Technical Digest of the Optical Fibers and Communications Conference (OFC '94)*, San Jose, CA, Paper ThN1, vol. 4: 237-8, February 20-25 (1994).

C13. D. J. Blumenthal, "Bandwidth Limits in All-Optical Multihop Photonic Packet Switched Networks," *Technical Digest of the Optical Fibers and Communications Conference (OFC '94)*, San Jose, CA, Paper WM10, vol. 4: 164-5, February 20-25 (1994).

C14. D. J. Blumenthal, R J Feuerstein and J. R. Sauer. "A multihop 2*2 all-optical photonic packet switch," *1994 IEEE International Conference on Communications SUPERCOMM/ICC '94*, New Orleans, LA, vol.3:1364-8, May 1-5 (1994).

1995

C15. D. J. Blumenthal, P. Granestrand, and L. Thylen, "A Comparison of Coherent Crosstalk Induced BER Floors in Four Types of NxN Space Photonic Switches," *Technical Digest of the OSA Photonics in Switching*, Salt Lake City, UT, vol. 12: 109-10, March 15-17 (1995).

1996

C16. D. J. Blumenthal, M. Shell, Q. Gao, M. Vaughn, A. Wang, P. J. Rigole, and S. Nilsson, "Experimental Demonstration of an All-Optical Multi Hop Routing Node for Wavelength Routed Networks," *Technical Digest of the Optical Fiber Communications Conference (OFC '96)*, San Jose, CA, Paper WD3, vol. 2: 108-10, February 25 (1996).

C17. M. D. Vaughn, A. Wang, and D. J. Blumenthal, "Simultaneous All-Optical Wavelength Conversion of Baseband Payload and Removal/Replacement of Subcarrier Multiplexed Headers," *Technical Digest of the Optical Fiber Communications Conference (OFC '96)*, San Jose, CA, paper WG6, vol. 2: 128-9, February 25 (1996).

C18. M. D. Sprenger, A. Benner, D. J. Blumenthal, J. Feehrer, R. Feuerstein, H. Jordan, J. Lianhua, C. Love, A. Ramanan, L. Ramfelt, and J. R. Sauer, "Architecture and Implementation of a High-Performance Optical Deflection Network for Distributed Parallel Processing," *Proceedings of the 2nd International Workshop on High-Speed Network Computing (HiNet '96)*, held in conjunction with the *10th International Parallel Processing Symposium (IPPS '96)*, Honolulu, HI, April 15-19 (1996).

C19. D. J. Blumenthal, Q. Gao, C. Scholz, and N. Kothari, "Low Crosstalk, High Extinction-Ratio Wavelength Switching Based on Four-Wave Mixing in Semiconductor Optical Amplifiers," *Proceedings of the Conference on Lasers and Electro-optics CLEO '96*, Anaheim, CA, Paper CThB4, pp. 346-7, June 2-7 (1996).

C20. S. Han, M. Vaughn, M. Laskar, and D. J. Blumenthal, "Simulation of a Subcarrier Multiplexed Communications System: A Performance Enhancement Tool," *IEEE MTT-S International Microwave Symposium Digest*, San Francisco, CA, Paper WE3F-22, vol. 2: 895-8, June 17-21 (1996).

C21. P. J. Rigole, S. Nilsson, T. Klinga, L. Backbom, B. Stalnacke, E. Berlind, B. Stoltz, D. J. Blumenthal, and M. Shell, "Wavelength Coverage Over 67 nm with a GCSR Laser. Tuning Characteristics and Switching Speed," 15th IEEE International Semiconductor Laser Conference, Haifa, Israel, Paper W1.1, pp. 125-6, October 13-18 (1996).

1997

C22. P. J. Rigole, S. Nilsson, E. Berglind, D. J. Blumenthal, and M. Shell, "State of the Art; Widely Tunable Lasers," *SPIE-International Society for Optical Engineering.*, San Jose, CA, vol. 3001: 382-93, February 10-13 (1997).

C23. M. Shell, M. D. Vaughn, L. Dubertrand, D. J. Blumenthal, P. J., Rigole, and S. Nilsson "Multi-Node Demonstration of a Multihop Wavelength-Routed All-Optical Packet Switched Network (MMPONet)," *Technical Digest of the Optical Fiber Communications Conference (OFC '97)*, Dallas, TX, Paper TuR2, vol. 6: 91-2, February 16-21 (1997).

C24. P. J. Rigole, M. Shell, S. Nilsson, D. J. Blumenthal, and E. Berglind, "Fast Wavelength Switching in a Widely Tunable GCSR Laser Using a Pulse Pre-Distortion Technique," *Technical Digest of the Optical Fiber Communications Conference (OFC '97)*, Dallas, TX, Paper WL63, vol. 6: 231-2, February 16-21 (1997).

C25. S. Han, R. Gaudino, M. Shell, J. Laskar, and D. J. Blumenthal, "Optimization of RF (MMIC)/Optical Subcarrier Multiplexed Communications System," *1997 IEEE Microwave Theory and Techniques Symposia (MTT '97)*, Denver, CO, Paper WE3F-61, vol. 2: 979-82, June 8-13 (1997).

C26. M. Shell and D. J. Blumenthal, "Improved Crosstalk Performance in a 10-Wavelength 25 Gbps Multichannel Laser Array Transmitter Module," *1997 digest of the LEOS Summer Topical Meetings*, Montreal, Canada, Paper FA3, pp. 64-5, August 11-15 (1997).

C27. R. Gaudino, S. Han, M. Shell, M. D. Vaughn, D. J. Blumenthal, and J. Laskar, "A Digital-Baseband/SCM-Control Fiber Link with Novel Differential Integrated Optic Transmitter and Microwave/Optical Direct Detection Receiver," *International Topical Meeting on Microwave Photonics '97*, Duisburg/Essen, Germany, Paper FR1-2, pp. 193-6 September 3-5 (1997).

C28. R. Gaudino and D. J. Blumenthal, "A Novel AOTF - Based Multichannel Add-Drop Node and its Cascadability in WDM Ring Networks," *Proceedings of the 23rd European Conference on Optical Communication (ECOC '97)*, Edinburgh, Scotland, UK, Paper TH2A, vol. 4: 77-80, September 22-25 (1997).

C29. C. J. Scholz, L. Dubertrand, and D. J. Blumenthal, "Demonstration of Two Simultaneous Independently Controlled Wavelength Conversions Using a Novel Dual-Pump/Dual-Probe Four Wave Mixing Configuration in a Semiconductor Optical Amplifier," *10th Annual Meeting IEEE/LEOS '97*, San Francisco, CA, Paper MK2, Vol. 1: 90-1, November 10-13 (1997).

C30. C. J. Scholz and D J Blumenthal, "The Influence of Wavelength Dependent Distributed Gain on the Optical Bandwidth of Semiconductor Optical Amplifiers," *10th Annual Meeting IEEE/LEOS '97*, San Francisco, CA, Paper TuN3, pp. 248-9, November 10-13 (1997).

1998

C31. R. Gaudino, M. Shell, M. Len, G. Desa, C. Juckett, and D. J. Blumenthal, "Experimental Demonstration of MOSAIC: A Multiwavelength Optical Subcarrier Multiplexed Controlled Network," *Technical Digest of the Optical Fiber Communication Conference (OFC '98)*, San Jose, CA, Paper ThP4, vol. 2: 330-1, February 22-7 (1998).

C32. R. Gaudino and D. J. Blumenthal, "WDM Channel Equalization Based on Subcarrier Signal Monitoring," *Technical Digest of the Optical Fiber Communication Conference (OFC '98)*, San Jose, CA, Paper WJ6, vol. 2: 167-8, February 22-27 (1998).

C33. F. Arecco, D. Scarano, S. Schmid, D. J. Blumenthal and R. Gaudino, "Acousto Optic Devices in Add/Drop Multiplexer Nodes," *Proceedings of the 24th European Conference on Optical Communication (ECOC '98)*, Madrid, Spain, vol. 1: 117-8, September 20-22 (1998).

1999

C34. D. J. Blumenthal, A. Carena, L. Rau, V. Curri, and S. Humphries, "WDM Optical IP Tag Switching with Packet-Rate Wavelength Conversion and Subcarrier Multiplexed Addressing," *Technical Digest of the Optical Fiber Communication Conference (OFC '99)*, San Diego, CA, Paper THM1, pp. 162-4, February 21-26 (1999).

C35. S. Han, J. Laskar, D. J. Blumenthal, "Four Channel MMIC-based Transmitter Module for RF/Optical Multiplexed Communications," *IEEE IMS 1999*, Anaheim, CA, Paper WE3B-5, pp. 1121-4, June 14-18 (1999).

C36. O. Lavrova, D. J. Blumenthal, "Wavelength Tuning Characteristics of the Grated Coupler Sampled Reflector Laser for Wavelength Switching Applications," *OSA Topical Meeting on Integrated Photonics Research '99*, Paper RMB5-1, pp. 20-22, Santa Barbara, CA, July 19-21 (1999).

C37. G. Rossi, R. Doshi, and D. J. Blumenthal, "Optical Network Channel Protection Switching Demonstration Using a Bi-Directional Reconfigurable Multichannel Add/Drop Multiplexer," *OSA Topical Meeting on Photonics in Switching '99*, Santa Barbara, CA, Paper PThB2-1, pp. 71-72, July 21-23 (1999).

C38. L. Rau, P. Öhlen, and D. J. Blumenthal, "Broadband Optically Preamplified Receiver Using an Interferometric Wavelength Converter," *OSA Topical Meeting on Photonics in Switching '99*, Paper PThD4-1, pp. 103-5 Santa Barbara, CA, July 21-23 (1999).

C39. R. P. Mirin, D. J. Blumenthal, "Quantum Dot Semiconductor Optical Amplifiers," *OSA Topical Meeting on Advanced Semiconductor Lasers and Their Applications '99 (ASLA '99)*, Paper AthD4-1, pp. 153-5, Santa Barbara, CA, July 21-23 (1999).

C40. D. J. Blumenthal, "Techniques for all-optical label swapping using SOA-based wavelength conversion and subcarrier multiplexing," *Topical Meeting on Photonics in Switching. OSA Trends in Optics and Photonics Series*, Santa Barbara, CA, Paper SSP1, vol. 32: 135-7, July 21-23 (1999).

C41. C. Scholz, B. Olsson, and D. J. Blumenthal, "The Influence of Carrier Modulation on the Broadband Frequency Response of FWM in a Semiconductor Optical Amplifier," *Proceedings of the 25TH European Conference on Optical Communication (ECOC '99)*, Nice, France, vol. 1: I324-I325, September 26-30 (1999).

C42. O. A. Lavrova and D. J. Blumenthal, "Tuning and Aging Characteristics of Multisection Tunable GCSR lasers for Dense WDM Applications," *IEEE/LEOS Annual Meeting*, San Francisco, CA, Paper TuI4, pp. 200-1, November 8-11 (1999).

2000

C43. B. Olsson, P. Öhlen, L. Rau, and D. J. Blumenthal, "A Simple and Robust High-Speed Wavelength Converter Using Fiber Cross-Phase Modulation and Filtering," *Technical Digest of the Optical Fiber Communication Conference (OFC '00)*, Baltimore, MD, Paper WE1-1, pp. 64-6, March 5-10 (2000).

C44. G. Rossi, O. Jerphagnon, B. Olsson, and D. J. Blumenthal, "Optical SCM Data Extraction Using a Fiber Loop Mirror for WDM Network Systems," *Technical Digest of the Optical Fiber Communication Conference (OFC '00)*, Baltimore, MD, Paper FD7-1, pp. 74-6, March 5-10 (2000).

C45. B. E. Olsson and D. J. Blumenthal, "Generation of 10 GHz Pulse Packets From an Actively Mode-Locked Fiber Ring Laser", *Technical Digest of the Optical Fiber Communication Conference (OFC '00)*, Baltimore, MD, Paper ThL2-1, pp. 175-7, March 5-10 (2000).

C46. O. Lavrova and D. J. Blumenthal, "Accelerated Aging and Reliability Studies of Multi-Section Tunable GCSR Lasers for Dense WDM Applications," *Technical Digest of the Optical Fiber Communication Conference (OFC '00)*, Baltimore, MD, Paper TuL2-1, pp. 181-3, March 5-10 (2000).

C47. B. E. Olsson, P. Öhlen, and D. J. Blumenthal, "Noise in Sliced Self-phase Modulation Broadened Spectrum," *Proceedings of the Conference on Lasers and Electro-Optics (CLEO '00)*, San Francisco, CA, Paper CtuG5, pp. 207-8, May 7-12 (2000).

C48. P. Öhlén, B. E. Olsson, and D. J. Blumenthal, "Wavelength Dependence and Power Requirements of a Wavelength Converter Based on XPM in an Optical BER," *Proceedings of the Conference on Lasers and Electro-Optics (CLEO '00)*, San Francisco, CA, Paper CW14, pp. 279-80, May 7-12 (2000).

C49. M. L. Nielsen, B. E. Olsson, D. J. Blumenthal, "Pulse Extinction Ratio Improvement Using SPM in an SOA for OTDM systems applications," *Proceedings of the 26th European Conference on Optical Communication (ECOC 00)*, Munich, Germany, Paper 1.1.6, pp. 23-4, September 4-7 (2000).

C50. L. Rau, B. E. Olsson, M. L. Mašanović, and D. J. Blumenthal, "Noise in Fiber XPM Wavelength Converters due to Excitation of Random Higher Order Solitons," *Proceedings of the 26th European Conference on Optical Communication (ECOC 00)*, Munich, Germany, Paper 8.2.3, pp. 93-4, September 4-7 (2000).

C51. B. E. Olsson and D. J. Blumenthal, "Pulse Width Restoration and PMD Suppression Using Fiber Self-Phase Modulation," *Proceedings of the 26th European Conference on Optical Communication (ECOC 00)*, Munich, Germany, Paper P.1.1, pp. 127-8, September 4-7 (2000).

C52. T. Dimmick, R. Doshi, R. Rajaduray, and D. J. Blumenthal, "Optically Multiplexed Transmitter for Hybrid Baseband and Subcarrier Multiplexed Signals," *Proceedings of the 26th European*

Conference on Optical Communication (ECOC 00), Munich, Germany, Paper 6.2.5, pp. 155-6, September 4-7 (2000).

C53. O. A. Lavrova, G. Rossi, and D. J. Blumenthal, "Rapid Tunable Transmitter with Large Number of ITU Channels Accessible in less than 5ns," *Proceedings of the 26th European Conference on Optical Communication (ECOC 00)*, Munich, Germany, Paper 6.3.5, pp. 169-70, September 4-7 (2000).

C54. G. Rossi and D. J. Blumenthal, "Optical SNR Monitoring in Optical Networks Using Subcarrier Multiplexing," *Proceedings of the 26th European Conference on Optical Communication (ECOC 00)*, Munich, Germany, P.3.17, pp. 227-8, September 4-7 (2000).

C55. B. E. Olsson and D. J. Blumenthal, "80 to 10 Gbit/s Demultiplexing Using Fiber Cross-Phase Modulation and Optical Filtering," *Proceedings of the IEEE/LEOS 13TH Annual Meeting, (LEOS '00)*, Rio Grande, Puerto Rico, Paper TuB 4, pp. 159-160, November 13–16 (2000).

C56. O. Lavrova and D. J. Blumenthal, "Detailed Transfer Matrix Based Dynamic Model for Multisection Widely-Tunable GCSR Lasers," *Proceedings of the IEEE/LEOS 13TH Annual Meeting, (LEOS '00)*, Rio Grande, Puerto Rico, Paper WV 1, pp. 579-580, November 13–16 (2000).

2001

C57. L. Rau, B-E Olsson, and D. J. Blumenthal, "Wavelength multicasting using an ultra high-speed all-optical wavelength converter," *OFC 2001. Optical Fiber Communication Conference and Exhibit*, Anaheim, CA, Technical Digest Postconference Edition, vol.3: pp. WDD52-1, March 17-23 (2001).

C58. L. Rau and D. J. Blumenthal, "Wavelength Multicasting Using an Ultra High-Speed All-Optical Wavelength Converter," *Technical Digest of the Optical Fiber Communication Conference (OFC '01)*, Anaheim, CA., Paper WDD52-1, March 17-23 (2001).

C59. X. Yan, M. L. Mašanović, and D. J. Blumenthal, "A New Simple Process for Optical Mode Converter Integration with Active and Passive Waveguides in InGaAs/InP," *Topical Meeting on Integrated Photonic Research*, Monterey, CA., Paper IMG4-1, June 11-13 (2001).

C60. O.A. Lavrova, L. Rau, and D. J. Blumenthal, "A Rapid Tunable Wavelength Converter Using a GCSR Laser," *Topical Meeting on Photonics in Switching 2001*, Monterey, CA, Paper PThC3-1, vol. 59: 42-4, June 13-15 (2001).

C61. L. Rau, B. E. Olsson, and D. J. Blumenthal, "A Multiwavelength RZ Pulse Source Generator Using an Ultra High-Speed All-Optical Wavelength Converter," *Topical Meeting on Photonics in Switching 2001*, Monterey, CA, Paper PThC4-2, vol. 59: 45-8, June 13-15 (2001).

2002

C62. L. Rau, S. Rangarajan, W. Wang, and D. J. Blumenthal, "All-Optical Add-Drop of an OTDM Channel Using an Ultra-Fast Fiber Based Wavelength Converter," *Conference on Optical Communications (OFC '02)*, Anaheim, CA, Paper WM1, vol. 1: 259-61, March 19 - 21 (2002).

C63. L. Rau, S. Rangarajan, D. J. Blumenthal, H. F. Chou, Y. J. Chiu and J. E. Bowers, "Two-Hop All-Optical Label Swapping with Variable Length 80 Gb/s Packets and 10 Gb/s Labels using Nonlinear Fiber Wavelength Converters, Unicast/Multicast Output and a Single EAM for 80- to 10Gb/s Packet Demultiplexing," *Conference on Optical Communications (OFC '02)*, Anaheim, CA, Paper FD2-1-3, vol. 2, March 19 - 21 (2002).

C64. M. Davanço, L. Thylen, and D. J. Blumenthal, "An Extremely Narrowband Directional Coupler Wavelength Filter Based on Electromagnetically Induced Transparency," *Technical Digest of the Integrated Photonics Research Conference (IPR '02)*, Vancouver, Canada, Paper IThF2, July 17-19 (2002).

C65. M. L. Mašanović, E. J. Skogen, J. S. Barton, J. Sullivan, D. J. Blumenthal, and L. A. Coldren, "Cascaded Multimode Interference-Based 1x2 Light Splitter for Photonic Integrated Circuits," *Technical Digest of the Integrated Photonics Research Conference (IPR '02)*, Vancouver, Canada, Paper IThA5, vol. 78, July 17-19 (2002).

C66. H. F Chou, Y. J. Chiu, J. E. Bowers, L. Rau, S. Rangarajan, D. J. Blumenthal, and W. Wang, "Standing-Wave Enhanced Electroabsorption Modulator for 80-Gb/s to 10-Gb/s OTDM Demultiplexing," *28th European Conference on Optical Communication (ECOC '02)*, Copenhagen, Denmark, Paper 8.4.6, vol 3: 1-2, September 8-12 (2002).

C67. L. Ceuppens. O. L. Jerphagnon, J. Lang. A. Banerjee and D. J. Blumenthal, "Intelligent optical networking with photonic cross connections," *Proceedings of SPIE - the International Society for Optical Engineering*, San Jose, CA, vol.4910: 1-14, September 9 (2002).

C68. W. Wang, L. Rau, D. J. Blumenthal, "40 Gbps All-Optical Wavelength Conversion Using XPM in a Distributed Fiber Raman Amplifier," *Technical Digest of the Conference for Optical Amplifiers and their Applications (OAA '02)*, Vancouver, Canada, September 14-17 (2002).

2003

C69. H. F. Chou, Y. J. Chiu, J. E. Bowers, W. Wang, and D. J. Blumenthal, "160-Gb/s to 10-Gb/s OTDM Demultiplexing Using a Traveling-Wave Electroabsorption Modulator," *Optical Fiber Communication Conference (OFC '03)*, Atlanta, GA, Paper ThX2, March 23 - 28 (2003).

C70. Z. Hu, S. Rangarajan, L. Rau, and D. J. Blumenthal, "An All-Optical Bufferless Multiwavelength Scheduler for 40 Gb/s Asynchronous Variable Length Optical Packets," *Optical Fiber Communication Conference (OFC '03)*, Atlanta, GA, Paper MF105, March 23 - 28 (2003).

C71. W. Wang, H. N. Poulsen, L. Rau, D. J. Blumenthal, H. F. Chou, J. E. Bowers, and L. Grüner-Nielsen, "80-Gb/s Regenerative Wavelength Conversion Using a Hybrid Raman/EDFA Gain-Enhanced XPM-Converter with Highly-Nonlinear-Fiber," *Optical Fiber Communication Conference (OFC '03)*, Atlanta, GA, Paper TuH2, March 23 - 28 (2003).

C72. M. L. Mašanović, E. J. Skogen, J. S. Barton, V. Lal, D. J. Blumenthal, and L. A. Coldren, "Demonstration of Monolithically-Integrated InP Widely-Tunable Laser and SOA-MZI Wavelength Converter," *15th International Conference on Indium Phosphide and Related Materials (IPRM '03)*, Santa Barbara, CA, Paper WB2.2, pp. 289-91, May 12-16 (2003).

C73. Evelyn Hu, Aimin Xing, Marcelo Davanco, Chuck Reese, and Dan Blumenthal, "InP Photonic Crystal Membrane Structures," *15th International Conference on Indium Phosphide and Related Materials (IPRM '03)*, Santa Barbara, CA, Invited Paper TuA2.4, pp. 69-71, May 12-16 (2003).

C74. Aimin Xing, Marcelo Davanco, Daniel J. Blumenthal, and Evelyn L. Hu, "Fabrication of 2D InP Photonic Crystal Membrane Structures," *47th International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication (EIPBN '03)*, Tampa, FL, Paper PH2, May 27-30 (2003).

C75. A. Xing, M. Davanco, D. Blumenthal, and E. Hu, "Quasi 2D Photonic Crystal Membrane: Band Gap Sensitivity to Fabrication Accuracy," *47th International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication (EIPBN 2003)*, Tampa, FL, May 27-30 (2003).

C76. X. Yan, M. Davanço, M. L. Mašanović, W. Zhao, and D. J. Blumenthal, "InP Laterally Tapered Wide-Bandwidth Optical Power Splitter," *Conference on Lasers and Electro Optics (CLEO '03)*, Baltimore, MD, Paper CWP7, June 1-6 (2003).

C77. Aimin Xing, Marcelo Davanco, Daniel Blumenthal, Evelyn Hu, "Systematic Transmission Characterization of 2D InP Photonic Crystal Membrane Structures," *Conference on Lasers and Electro Optics (CLEO '03)*, Baltimore, MD, Paper JWC6, June 1-6 (2003).

C78. Rajaduray R. and Blumenthal D. J "Performance evaluation of optical subcarrier multiplexed systems using transient analysis," *Proceedings of SPIE - the International Society for Optical Engineering*, San Jose, CA, vol.4989: 111-22, June 17 (2003).

C79. Milan L. Mašanović, Vikrant Lal, Jonathon S. Barton, Larry A. Coldren, and Daniel J. Blumenthal, "Wavelength Conversion over a 50nm input and 21nm output wavelength range using a monolithically integrated tunable all-optical MMI-MZI (TAOMI) wavelength converter," *29th European Conference on Optical Communication and 14th International Conference on Integrated Optics and Optical Fibre Communication (ECOC-IOOC '03)*, Rimini, Italy, Paper TH1.6.5, pp.930-931 September 21-25 (2003).

C80. Hsu-Feng Chou, Zhaoyang Hu, John E. Bowers, Daniel J. Blumenthal, Kohsuke Nishimura, Ryo Inohara, and Masashi Usami, "Simultaneous Demultiplexing, Electrical Clock Recovery and Optical Clock Generation using Photocurrent and Subharmonic Frequency in a Traveling-wave Electroabsorption Modulator," *29th European Conference on Optical Communication and 14th International Conference on Integrated Optics and Optical Fibre Communication (ECOC-IOOC '03)*, Rimini, Italy, Paper We4.P.110, September 21-25 (2003).

C81. Jonathan S. Barton, Milan L. Masanovic, Matthew N. Sysak, Erik J. Skogen, John Hutchinson, Daniel J. Blumenthal, Larry A. Coldren, "A Novel Monolithically-Integrated Widely-Tunable Wavelength Converter Based on a SGDBR-SOA-MZ Transmitter and Integrated Photo-Detector,"

Photonics in Switching, Versailles (Paris), France, Paper PS.Mo.A9, pp.34-6, September 28-October 2 (2003).

C82. H. N. Poulsen, S. Rangarajan, R. Gyurek, P. G. Donner, M. Hirsch and D. J. Blumenthal, "Demonstration of a True Layer-3 IP to Optical Label Switching Adaptation Layer with Rapid Ingress Wavelength Tuning and Variable Length Packets," *Photonics in Switching*, Versailles (Paris), France, September 28 - October 2 (2003).

C83. M. Mašanović, R. Doshi, V. Lal, J. Barton, L. Coldren, and D. Blumenthal, "First Demonstration of both Analog and Digital Wavelength Conversion using a Monolithically-Integrated InP Widely Tunable All-Optical Wavelength Convertoer (TAO-WC)," *Photonics in Switching*, Versailles (Paris), France, September 28-October 2 (2003).

C84. R. Rajaduray, Daniel J. Blumenthal, and S. Ovadia, "Impact of Burst Assembly Parameters on Edge Router Latency in an Optical Burst Switching Network," *2003 IEEE LEOS Annual Meeting Conference Proceedings*, Tucson, AZ, Paper MF3, pp. 55-6, October 26-30 (2003).

C85. Marcelo Davanço and Daniel Blumenthal, "Exploring Slow and Dispersive Propagation in 2D Line--Defect Photonic Crystal Waveguides," *2003 IEEE LEOS Annual Meeting Conference Proceedings*, Tucson, AZ, Paper TuE4, pp. 216-217, October 26-30 (2003).

C86. M. L. Mašanović, V. Lal, L. A. Johansson, J. S. Barton, L. A. Coldren, and D. J. Blumenthal, "Characterization of the Chirp Properties of a Monolithically-Integrated Widely-Tunable All-Optical Wavelength Converter (TAO-WC)," *IEEE LEOS Annual Meeting Conference Proceedings*, Tucson, AZ, Paper TuCC3, pp. 435-6, October 26-30 (2003).

C87. R. Doshi, M. L. Mašanović, D. J. Blumenthal, "Demonstration of Regenerative any λin to any λout Wavelength Conversion using a 2-Stage All-Optical Wavelength Converter Consisting of a XGM SOA-WC and InP Monolithically-integrated Widely-Tunable MZI SOA-WC," *2003 IEEE LEOS Annual Meeting Conference Proceedings*, Tucson, AZ, Paper WA5, pp. 477-8, October 26-30 (2003).

2004

C88. L. Rau, W. Wang, H.N. Poulsen, and D. J. Blumenthal, "160 Gb/s OTDM wavelength conversion using XPM in dispersion shifted fiber," *Optical Fiber Communication Conference (OFC '04)*, Los Angeles, CA, Paper FA7, vol. 2: 375-7, February 22-27 (2004).

C89. H. F. Chou, J. E. Bowers, and D. J. Blumenthal, "Novel photocurrent-assisted wavelength (PAW) converter using a traveling-wave electroabsorption modulator with signal monitoring and regeneration capabilities," *Optical Fiber Communication Conference (OFC '04)*, Los Angeles, CA, Paper FD4, February 22-27 (2004).

C90. M. L. Mašanović, V. Lal, J. A. Summers, J. S. Barton, E. J. Skogen, L. A. Coldren, and D. J. Blumenthal, "10 Gbps and 2.5 Gbps error-free operation of a monolithically integrated widely-tunable all-optical wavelength converter with independent phase control and output 35nm tuning range," *Optical Fiber Communication Conference (OFC '04),* Los Angeles, CA, Paper ThS5, February 22-27 (2004).

C91. W. Wang, L. Rau, H. N. Poulsen, and D. J. Blumenthal, "Raman Gain Enhanced FWM 160 Gb/s OTDM Demultiplexer with Highly-Nonlinear-Fiber," *Optical Fiber Communication Conference (OFC '04)*, Los Angeles, CA, Paper ThN3, February 22-27 (2004).

C92. Z. Hu, B. Liu, X. Yan, J. E. Bowers, and D. J. Blumenthal, "All-optical 40 Gb/s Cross-Wavelength Transferred Clock Recovery For 3R Wavelength Conversion Using a Traveling-wave Electroabsorption Modulator-Based Resonant Cavity," *Optical Fiber Communication Conference (OFC)*, Los Angeles, CA, Paper WD3, February 22-27 (2004).

C93. L. Rau, W. Wang, H. N. Poulsen, and D. J. Blumenthal, "160 Gb/s OTDM wavelength conversion using XPM in dispersion shifted fiber," *Optical Fiber Communication Conference (OFC)*, Los Angeles, CA, Paper FA7, February 22-27 (2004).

C94. Z. Hu, H. F. Chou, J. E. Bowers, and D. J. Blumenthal, "A Compact All-Optical 40 Gb/s Clock Recovery Using a Traveling-wave Electroabsorption Modulator-Based Ring Oscillator With a Chip Coplanar Q-Filter," *Conference on Lasers and Electro Optics (CLEO)*, San Francisco, CA, Paper CTuW, May 16-21 (2004).

C95. W. Wang, L. Rau, and D. J. Blumenthal, "160Gb/s High Extinction Ratio Raman-Enhanced FWM Wavelength Converter with Highly-Nonlinear-Fiber," *Conference on Lasers and Electro Optics (CLEO)*, San Francisco, CA, Paper CPDC6, May 16-21 (2004).

C96. J. M. Hutchinson, J. S. Barton, M. L. Mašanović, M. N. Sysak, J. A. Henness, L. A. Johansson, D. J. Blumenthal, and L. A. Coldren, "Monolithically integrated InP-based tunable wavelength conversion," *SPIE Meeting on Physics and Simulation of Optoelectronic Devices XII,* San Jose, CA, vol. 5349, June 18 (2004).

C97. A. Xing, M. Davanco, D. Blumenthal, E. Hu, "Transmission measurement of tapered single line defect photonic crystal waveguide," *Proceedings on Integrated Photonics Research (IPR)*, San Francisco, CA, Paper IWB3, June 30 (2004).

C98. L.A. Johansson, Z. Hu, D. J. Blumenthal, L. A. Coldren, Y. A. Akulova and G. A. Fish, "Monolithically Integrated 40 GHz Pulse Source with >40 nm Wavelength Tuning Range," *Proceedings on. Integrated Photonics Research (IPR)*, San Francisco, CA, June 30 (2004).

C99. Z. Hu, H. F. Chou, L. Rau, M. Usami, J. E. Bowers and D. J. Blumenthal, "40-Gb/s Optical Packet Clock Recovery Using a Traveling-Wave Electroabsorption Modulator-Based Ring Oscillator," *European Conference on Optical Communications (ECOC)*, Stockholm, Sweden, pp. 436-7, November 6-8 (2004).

C100. M. Davanço and D. J. Blumenthal, "Design of an InP-based deeply-etched waveguide grating for the implementation of entire C- Or L- band rejection filters," *IEEE LEOS Annual Meeting Conference Proceedings*, Rio Grande, Puerto Rico, vol. 1: 300-1, November 7-11 (2004).

2005

C101. H. N. Poulsen, S. Rangarajan, H. N. Poulsen, M. L. Masanovic, V. Lal, and D. J. Blumenthal, "Performance of a Label Erase and Wave-Length Switching Sub-System for Layer-3 All-Optical Label Switching Using a Two Stage InP Wavelength Converter," *Optical Fiber Communications Conference, (OFC)*, Anaheim, CA, Paper OTuC2, March 6-11 (2005).

C102. M. N. Sysak, J. S. Barton, J. W. Raring, M. Dummer, A. T. Pedretti, D. J. Blumenthal, L. A. Coldren, "10 Gb/s Photocurrent Driven, Widely Tunable Electroaborption Modulator Based Wavelength Convertor," *Optical Fiber Communications Conference (OFC)*, Anaheim, CA, Paper OTuM4, March 6-11 (2005)

C103. Z. Hu, H. F. Chou, J.E. Bowers and D.J. Blumenthal, "40 Gb/s Optical 3R Regeneration Using a Traveling-wave Electroabsorption Modulator-Based Ring Oscillator," *Optical Fiber Communications Conference (OFC)*, Anaheim, CA, Paper OTuO5, March 6-11 (2005).

C104. C. H. Chen, L. A. Johansson, V. Lal, M. L. Masanovic, D. J. Blumenthal, and L. A. Coldren, "Programmable Optical Buffering using Fiber Bragg Gratings combined with a Widely-Tunable Wavelength Converter," *Optical Fiber Communications Conference, (OFC '05*), Anaheim, CA, Paper OWK4, March 6-11 (2005).

C105. A. Xing, Davanco, M., Camatel S., Blumenthal D. J., and Hu L. E., "Pulse Compression in Line Defect Photonic Crystal Waveguide," *Optical Fiber Communications Conference, (OFC*), Anaheim, CA, Paper OWD5, March 6-11 (2005).

C106. V. Lal, M. L. Mašanović, J. A. Summers, L.A. Coldren, and D.J. Blumenthal, "40Gbps Operation of an Offset Quantum Well Active Region Based Widely-Tunable All-Optical Wavelength Converter," *Optical Fiber Communication Conference (OFC)*, Anaheim, CA, Paper OThE3, March 6-11 (2005).

C107. M. L. Mašanović, V. Lal, E. J. Skogen, J. S. Barton, J. A. Summers, L. A. Coldren, and D. J. Blumenthal, "Detailed Comparison of Cross-phase Modulation Efficiency in Offset Quantum Well and Centered Quantum Well Intermixed Monolithically Integrated Widely-Tunable MZI-SOA Wavelength Converters," *Optical Fiber Communications Conference, (OFC '05*), Anaheim, CA, Paper OThE5, March 6-11 (2005).

C108. S. Rangarajan, H. N. Poulsen, P. G. Donner, R. Gyurek, V. Lal, M. L. Masanovic and D. J. Blumenthal, "End-to-End Layer-3 (IP) Packet Throughput and Latency Performance Measurements in an All-Optical Label Switched Network with Dynamic Forwarding," *Optical Fiber Communications Conference (OFC '05*), Anaheim, CA, Paper OWC5, March 6-11 (2005).

C109. V. Lal, M. L. Masanovic, E. J. Skogen, J. W. Raring, J. A. Summers, L. A. Coldren, and D. J. Blumenthal, "10Gbps Monolithically-Integrated Widely-Tunable Wavelength Converter Using Quantum Well Intermixing," *Integrated Photonics Research and Applications (IPRA)*, San Diego, CA, Paper IMC3, April 11-13th (2005).

C110. J. A. Summers, V. Lal, M. L. Mašanović, L. A. Coldren, and D. J. Blumenthal, "Widely-Tunable All-Optical Wavelength Converter Monolithically Integrated with a Total Internal Reflection Corner

Mirror Delay Line for 40Gbps RZ Operation," *Integrated Photonics Research and Applications (IPRA),* San Diego, California, Paper IMC5, April 11-13 (2005).

C111. V. Lal, J. A. Summers, M. L. Mašanović, L. A. Coldren, and D. J. Blumenthal, "Novel Compact InP Based Monolithic Widely-Tunable Differential Mach-Zehnder Interferometer Wavelength Converter for 40Gbps Operation," *Indium Phosphide and Related Materials (IPRM)*, Glasgow, Scotland, UK, May 8-12 (2005).

C112. W. Zhao, Z. Hu, V. Lal, L. Rau, La. A. Coldren, and D. J. Blumenthal, "Optimization of ultra-long MQW semiconductor optical amplifiers for all-optical 40-Gb/s wavelength conversion," *IEEE/LEOS/OSA Conference on Lasers and Electro-Optics (CLEO)*, Baltimore, MD, Paper CWK5, Baltimore, MD, May 22-27 (2005).

C113. A. Xing, M. Davanco, D.J. Blumenthal, and E.L. Hu, "Group Velocity Reduction through Line-defect Photonic Crystal Waveguide," *PECS-VI*, Crete, Greece, June 19-24 (2005).

C114. J. A. Summers, M. L. Mašanović, V. Lal, L. A. Coldren and D. J. Blumenthal, "Monolithic Widely-Tunable All-Optical Wavelength Converter with Spatial Filtering of Input and Output Signals for 10Gbps NRZ Operation," *IEEE LEOS Annual Meeting 2005*, Sydney, Australia, Paper TuT2, pp. 351-2, October 22 (2005).

2006

C115. J. S. Barton, M. N. Sysak, A. Tauke-Pedretti, M. Dummer, J. Raring, L. A. Johansson, M. L. Masanovic, D. J. Blumenthal, L. A. Coldren, "Field modulated wavelength converters," *SPIE Photonics West 2006*, San Jose, CA, Vol. 6124, January 21-26 (2006).

C116. B. R. Koch, Z. Hu, J. E. Bowers, and D. J. Blumenthal, "Integrated Optical Label Read and Payload Envelope Detection Circuit for Optical Label Swapping," *Optical Fiber Communications Conference (OFC)*, Anaheim, CA, Paper OWL7, March 5-10 (2006).

C117. D. Wolfson, H. N. Poulsen, S. Rangarajan, Z. Hu, and D. J. Blumenthal, "Synchronizing Optical Data and Electrical Control Planes in Asynchronous Optical Packet Switches," *Optical Fiber Communications Conference (OFC)*, Anaheim, CA, Paper OThM3, March 5-10 (2006).

C118. H. N. Poulsen, D. Wolfson, S. Rangarajan, and D. J. Blumenthal, "Burst mode 10 Gbps optical header recovery and lookup processing for asynchronous variable-length 40 Gbps optical packet switching," *Optical Fiber Communications Conference (OFC)*, Anaheim, CA, Paper OFJ2, March 5-10 (2006).

C119. J. A. Summers, M. L. Mašanović, V. Lal, D. J. Blumenthal, "Monolithic Spatially-Filtered 10Gbps All-Optical Wavelength Converter with Enhanced Push-Pull Operation using Dual Inverted and Non-Inverted Inputs," *Optical Fiber Communications Conference (OFC)*, Anaheim, CA, Paper OWS4, March 5-10 (2006).

C120. M. Davanço, A. Xing, E. L. Hu, D. J. Blumenthal, and J. Raring, "Broadband Photonic Crystal Passive Filters for Monolithically Integrated InP Photonic Integrated Circuits," *Optical Fiber Communications Conference (OFC)*, Anaheim, CA, Paper OThO1, March 5-10 (2006).

C121. N. Behesti, Y, Ganjali, R. Rajaduray, D. Blumenthal, and N. McKeown, "Buffer sizing in all-optical packet switches," *Optical Fiber Communications Conference (OFC)*, Anaheim, CA, Paper OThF8, March 5-10 (2006).

C122. S. Rangarajan, H. N. Poulsen, and D. J. Blumenthal, "Scalable All-Optical Compression/Decompression of Variable Length (40 to 1500 byte) Packets," *Optical Fiber Communications Conference (OFC)*, Anaheim, CA, Paper OWP2, March 5-10 (2006).

C123. Z. Hu, B. Koch, J. E. Bowers, and D. J. Blumenthal, "Integrated Photonic/RF 40-Gb/s Burst-Mode Optical Clock Recovery for Asynchronous Optical Packet Switching," *Optical Fiber Communications Conference (OFC)*, Anaheim, CA, Paper OThS7, March 5-10 (2006).

C124. W. Zhao, M. L. Masanovic, V. Lal, D. Wolfson, G. Fish and D. J. Blumenthal, "Monolithically Integrated Widely Tunable Delayed Interference Based 40Gbps Wavelength Converter," *Optical Fiber Communications Conference (OFC '06)*, Anaheim, CA, Paper OWS3, March 5-10 (2006).

C125. M. N. Sysak, J. W. Raring, J. S. Barton, M. M. Dummer, A. Tauke-Pedretti, H. N. Poulsen, D. J. Blumenthal, and L. A. Coldren, "10 Gb/s Monolithically Integrated, Photocurrent Driven Wavelength Converter with Widely Tunable SGDBR Laser and Optical Receiver," *Proceedings on Integrated Photonics Research and Applications*, Uncasville, CT, Paper ITuC5, April 24-28 (2006).

C126. M. N. Sysak, J. W. Raring, D. J Blumenthal, and L. A Coldren, "A Quantum Well EAM-SGDBR Widely Tunable Transmitter Fabricated on a Novel Dual-Quantum-Well Integration Platform," *Device Research Conference (DRC)*, University Park, PA, pp. 15-6 June 26-28 (2006).

C127. V. Lal, M. L. Masanovic, D. Wolfson, G. Fish, and D. J. Blumenthal, "Monolithic Widely Tunable Packet Forwarding Chip in InP for All-Optical Label Switching," *International Peace Research Association*, Calgary, Canada, June 29- July 3 (2006).

C128. B. K. Whitlock, H. N. Poulsen, D. H. Richards and D. J. Blumenthal, "Physical-layer Modeling and Simulation of WDM Fiber Optic Network Architectures for Aerospace Platforms," *IEEE Conference Avionics Fiber-Optics and Photonics*, Annapolis, MD, Paper TuC5, pp. 26 – 27, September. 12-14 (2006).

C129. M. N. Sysak, J. W. Raring, G. P. Morrison, D. J. Blumenthal, and L. A Coldren, "Monolithically Integrated, Sampled Grating DBR Laser Transmitter with Asymmetric Quantum Well Electroabsorption Modulator," *Proceedings of International Semiconductor Laser Conference*, Kohala Coast, HI, Paper TuB6, pp. 29-30, September 17-21 (2006).

C130. B. R. Koch, Z. Hu, J. E. Bowers, and D. J. Blumenthal, "All-Optical Payload Envelope Detection for Packets with 40 Gbps Payloads and 10 Gbps Labels," *European Conference on Optical Communications (ECOC)*, Cannes, France, pp. 1-2, September 24-28 (2006).

C131. M. N. Sysak, J. W. Raring, L. Johansson, H. N. Poulsen, J. S. Barton, D. J. Blumenthal, and L. A. Coldren, "Optical 2R and 3R Signal Regeneration in Combination with Dynamic Wavelength Switching Using a Monolithically Integrated, Widely Tunable Photocurrent Driven Wavelength Converter," *European Conference on Optical Communications (ECOC)*, Cannes, France, September 24-28 (2006).

C132. H. N. Poulsen, W. Donat, V. Lal, M. L. Masanovic, D. J. Blumenthal, G. Epps, D. Civello, G. Fish and C. Coldren, "Demonstration of Simultaneous Multiplexing/Demultiplexing Operation of an All-Optical 2x2 Packet Switch with Asynchronous Variable-length Optically Labeled 40Gbps Packets," *European Conference on Optical Communications (ECOC)*, Cannes, France, September 24-28 (2006).

2007

C133. Z. Hu, and D. J. Blumenthal, "SPM-Based 2R Regenerative 10Gbps Optically Linearly Controlled Delay Line with 0ps to 170ps Tuning Range," *Optical Fiber Communication and the National Fiber Optic Engineers Conference OFC/NFOEC*, Anaheim, CA, Paper OME4, March 25-29 (2007).

C134. Z. Hu, and D. J. Blumenthal, "Simultaneous Slow-Light Delay and Pulse Reshaping of 10 Gbps RZ Data in Highly Nonlinear Fiber-based Optical Parametric Amplifier with Clock-Modulated Pump," *Optical Fiber Communication and the National Fiber Optic Engineers Conference OFC/NFOEC*, Anaheim, CA, Paper OWB4, March 25-29 (2007).

C135. B. R. Koch, J. S. Barton, M. Masanovic, Z. Hu, J. E. Bowers, and D. J. Blumenthal, "35 Gb/s Monolithic All-Optical Clock Recovery Pulse Source," *Conference on Optical Fiber Communication and the National Fiber Optic Engineers Conference (OFC/NFOEC)*, Anaheim, California, Paper OWP2, March 25-29 (2007).

C136. J. P. Mack, H. N. Poulsen, E. F. Burmeister, J. E. Bowers, and D. J. Blumenthal, "A 40 Gb/s Asynchronous Optical Packet Buffer Based on an SOA Gate Matrix for Contention Resolution," *Conference on Optical Fiber Communication and the National Fiber Optic Engineers Conference (OFC/NFOEC)*, Anaheim, CA, Paper OTuB7, March 25-29 (2007).

C137. M. P. Fok, C. Shu, and D. J. Blumenthal, "Dual-Pump Four-Wave Mixing in Bismuth-Oxide Highly Nonlinear Fiber for Wide-Band DPSK Wavelength Conversion," *2007 Optical Fiber Communication Conference and Exposition and the National Fiber Optic Engineers Conference (OFC/NFOEC)*, Anaheim, CA, Paper JThA52, March 25-29 (2007).

C138. J. A. Summers, M. L. Mašanović, V. Lal, and D. J. Blumenthal, "Monolithically Integrated Multi-Stage All-Optical 10Gbps Push-Pull Wavelength Converter," *Conference on Optical Fiber Communication and the National Fiber Optic Engineers Conference (OFC/NFOEC)*, Anaheim, CA, Paper OThT2, March 25-29 (2007).

C139. J. A. Summers, V. Lal, M. L. Mašanović, N. Dagli, and D. J. Blumenthal, "Concave Low-Loss Total Internal Reflection Mirrors in Indium Phosphide for High Fabrication Tolerance," *Conference on Lasers and Electro-Optics (CLEO)*, Baltimore, MD, Paper CTuH4, May 6-11 (2007).

C140. M. P. Fok, C. Shu, and D. J. Blumenthal, "All-Optical ASK-DPSK Signal Regeneration Using a Semiconductor Optical Amplifier," *2007 OSA Conference on Lasers and Electro-Optics (CLEO 2007)*, Baltimore, MD, Paper JTuA126, May 6-11 (2007).

C141. M. P. Fok, C. Shu, and D. J. Blumenthal, "40-Gb/s Polarization Multiplexed RZ-ASK-DPSK Signal Wavelength Conversion using a 32-cm Bismuth-Oxide Highly Nonlinear Fiber," *2007 European Conference on Lasers and Electro-Optics and the International Quantum Electronics Conference (CLEO/Europe-IQEC)*, Munich, Germany, CI4-2-THU, June 17-22 (2007).

C142. M. P. Fok, J. A. Summers, M. L. Mašanović, C. Shu, and D. J. Blumenthal, "Tunable DPSK Wavelength Converter Using an SOA-MZI Monolithically Integrated with a Sampled-Grating Distributed Bragg Reflector," *2007 European Conference on Lasers and Electro-Optics and the International Quantum Electronics Conference (CLEO/Europe-IQEC)*, Munich, Germany Paper CI1-5-TUE, June 17-22 (2007).

C143. J. A. Summers, M. L. Maćanović, V. Lal, and D. J. Blumenthal, "Experimental Study of the Impact of Input Signal Suppression on the Performance of a Cascaded SOA-MZI Wavelength Converter," *Topical Meeting on Photonics in Switching*, San Francisco, CA, Paper WB4.3, pp. 161–2, August 19-22 (2007).

C144. B. R. Koch, J. S. Barton, M. Masanovic, Z. Hu, H. N. Poulsen, J. E. Bowers, and D. J. Blumenthal, "Fast Optical Clock Recovery and Signal Regeneration Applications of a Monolithic Mode Locked Laser with DBR Mirrors and an Optical Amplifier," *33rd European Conference and Exhibition on Optical Communication*, Berlin, Germany, Paper 7.3.2, September 16 - 20 (2007).

C145. M. L. Mašanović, J. A. Summers, A. Tauke-Pedretti, V. Lal, J. S. Barton, T. Gibbons, L. Elgin, M. Zhang, L. A. Coldren, and D. J. Blumenthal, "Integrated High-Performance Tunable Wavelength Converter Technologies For Future Terrestrial And Avionic Optical Networks," *IEEE Avionics, Fiber Optics and Photonics*, Victoria, BC, Canada, Paper ThC1, pp. 70-1 October 2-5 (2007).

2008

C146. J. P. Mack, H. N. Poulsen, and D. J. Blumenthal, "40 Gb/s Autonomous Optical Packet Synchronizer," *Proceedings of Optical Fiber Communication Conference (OFC '08)*, San Diego, CA, Paper OTuD3, February 24-28 (2008).

C147. E. F. Burmeister, J. P. Mack, H. N. Poulsen, J. Klamkin, L. A. Coldren, D. J. Blumenthal, and J. E. Bowers, "SOA gate array recirculating buffer for optical packet switching," *Conference on Optical Fiber Communication and the National Fiber Optic Engineers Conference (OFC/NFOEC),* San Diego, CA, Paper OWE4, February 24-28 (2008).

C148. E. F. Burmeister, J. P. Mack, H. N. Poulsen, M. L. Masanović, B. Stamenić, D. J. Blumenthal, and J. E. Bowers, "Photonic Chip Recirculating Buffer for Optical Packet Switching," *Integrated Photonics and Nanophotonics Research and Applications (IPNRA) Topical Meeting*, Boston, MA, Paper IWC4, July 13-16 (2008).

C149. E. D. Lively and D. J. Blumenthal, "Simulation of Sub-Wavelength Metal Gratings for On-Chip Applications in Optical Communications," *OSA Slow and Fast Light (SL) Topical Meeting*, Boston, MA, Paper SMC6, July 13-16 (2008).

C150. E. F. Burmeister, H. W. Chen, J. P. Mack, Y. H. Kuo, B. Stamenić, D. J. Blumenthal and J. E. Bowers, "Hybrid silicon photonic integrated circuits for optical networking," *International Topical Meeting on Photonics in Switching*, Hokkaido University, Sapporo, Japan, August 4-7 (2008).

C151. B. R. Koch, A. W. Fang, O. Cohen, M. Paniccia, D. J. Blumenthal and J. E. Bowers, "Multiple Wavelength Generation from a Mode Locked Silicon Evanescent Laser," *International Semiconductor Laser Conference (ISLC)*, Sorrento, Italy, Paper ThB3, pp. 175 – 176, September 14-18 (2008).

C152. B. R. Koch, A. W. Fang, R. Jones, O. Cohen, M. J. Paniccia, D. J. Blumenthal, J. E. Bowers, "Silicon evanescent optical frequency comb generator," *5th Annual IEEE International Conference on Group IV Photonics*, Cardiff, Wales, UK, Paper WD4, pp. 64 – 66, September 17-19 (2008).

C153. J. P. Mack, E .F. Burmeister, H. N. Poulsen, B. Stamenic, J. E. Bowers, and D. J. Blumenthal, "Photonic integrated circuit switch matrix and waveguide delay lines for optical packet synchronization," *34th European Conference on Optical Communications (ECOC)*, Brussels, Belgium, Paper Th2C5, September 21-25 (2008).

C154. E. F. Burmeister, J. P. Mack, H. N. Poulsen, B. Stamenic, M. Mašanovic, D. J. Blumenthal and J. E. Bowers, "Demonstration of contention resolution between two 40 Gb/s packet streams using

multiple photonic chip optical buffers," *European Conference on Optical Communications (ECOC),* Brussels, Belgium*,* Paper We.2.D.3, September 21-25 (2008).

C155. B. R. Koch, A. W. Fang, R. Jones, O. Cohen, M. J. Paniccia, D. J. Blumenthal, and J. E. Bowers, "Silicon Evanescent Optical Frequency Comb Generator," *Extended Abstracts of the 2008 International Conference on Solid State Devices and Materials*, Tsukuba, Ibaraki, Japan, Paper WD4, pp. 974-975, September 23-26 (2008).

C156. H. N. Poulsen, D. H. Richards, P. Mena, A. Ramapanicker, D. J. Blumenthal, "Reference physical layer analysis of WDM fiber optic network for aerospace platforms," *IEEE Avionics, Fiber-Optics and Photonics Technology Conference,* San Diego, CA, pp.75 – 76, September 30-October 2 (2008).

2009

C157. J. P. Mack, H. N. Poulsen, E. F. Burmeister, B. Stamenic, G. Kurczveil, J. E. Bowers, and D. J. Blumenthal, "Demonstration of Contention Resolution for Labeled Packets at 40 Gb/s Using Autonomous Optical Buffers," *OSA/OFC/NFOEC*, San Diego, CA, Paper OMU2, March 22 – 26 (2009).

C158. J. P. Mack, J. M. Garcia, H. N. Poulsen, E. F. Burmeister, B. Stamenic, G. Kurczveil, J. E. Bowers, and D. J. Blumenthal, "End-to-end asynchronous optical packet transmission, scheduling, and buffering," *OSA/OFC/NFOEC*, San Diego, CA, Paper OWA2, March 22 – 26 (2009).

C159. S. C. Nicholes, M. L. Masanovic, J. Barton, E. J. Norberg, E. Lively, B. Jevremovic, L. A. Coldren and D. J. Blumenthal, "Novel application of quantum well intermixing implant buffer layer to enable high-density photonic integrated circuits in InP," *IEEE International Conference on Indium Phosphide & Related Materials, IPRM '09*, Newport Beach, CA, Paper WB1.2, pp. 215 – 218, May 10-14 (2009).

C160. J. P. Mack, K. N. Nguyen, M. Dummer, E. F. Burmeister, H. N. Poulsen, B. Stamenic, G. Kurczveil, J. E. Bowers, L. A. Coldren, and D. J. Blumenthal, "40 Gb/s buffered 2×2 optical packet switching using photonic integrated circuits," *Conference on Lasers and Electro-Optics and Conference on Quantum electronics and Laser Science Conference (CLEO/QELS 2009),* Baltimore, MD, Paper CMJJ6, May 31-June 5 (2009).

C161. E. Lively, J. S. Barton and D. J. Blumenthal, "Novel Fabrication of Sub−Wavelength High Aspect Ratio Metal/Dielectric Gratings on InP Semiconductor Platforms," *OSA Topical Meeting on Integrated Photonics and Nanophotonics Research and Applications (IPNRA)*, Honolulu, HI, Paper IBW2, July 12 – 17 (2009).

C162. S. C. Nicholes, M. L. Mašanović, E. Lively, L. A. Coldren and D. J. Blumenthal, "An 8x8 Monolithic Tunable Optical Router (MOTOR) Chip in InP," *OSA Topical Meeting on Integrated Photonics and Nanophotonics Research and Applications (IPNRA),* Honolulu, HI, Paper IMB1, July 12 – 17 (2009).

2010

C163. "Ultra-Long Cavity Hybrid Silicon Mode-Locked Laser Diode Operating at 930 MHz," M. J. R. Heck, M. L. Davenport, H. Park, D. J. Blumenthal and J. E. Bowers, Optical Fiber and Communication Conference and the National Fiber Optic Engineers Conference (OFC/NFOEC) 2010, San Diego, CA, Paper OMI5, March 21-25 (2010)

C164. "Asynchronous 2x2 Optical Packet Synchronization, Buffering and Forwarding," J. P. Mack, J. M. Garcia, E. F. Burmeister, M. M. Dummer, H. N. Poulsen, B. Stamenic, G. Kurczveil, K. Hollar, L. A. Coldren, J. E. Bowers and D. J. Blumenthal, Optical Fiber and Communication Conference and the National Fiber Optic Engineers Conference (OFC/NFOEC) 2010, San Diego, CA, Paper OThN1, March 21-25 (2010)

C165. "A Real-Time Asynchronous Dynamically Re-Sizable Optical Buffer for Variable Length 40Gbps Optical Packets," J. M. Garcia, J. P. Mack, K. N. Nguyen, K. Hollar, E. F. Burmeister, B. Stamenic, G. Kurczveil, H. N. Poulsen, J. E. Bowers and D. J. Blumenthal, Optical Fiber and Communication Conference and the National Fiber Optic Engineers Conference (OFC/NFOEC) 2010, San Diego, CA, Paper OThN4, March 21-25 (2010)

C166. Large-Scale Photonic Integration for Advanced All-Optical Routing Functions." S. C. Nicholes, M. L. Mašanović, B. Jevremović, E. Lively, L. A. Coldren and D. J. Blumenthal, *Integrated Photonics Research*, Monterey, CA, July 25-28 (2010)

C167. "Ultra-low loss silica-based waveguides with millimeter bend radius," J. F. Bauters, M. Heck, J. R. Martijn, D. John, M.-C. Tien, A. Leinse, R. G. Heideman, D. J. Blumenthal, J. E. Bowers,

2011

C168. "Hybrid silicon DQPSK receiver," Nguyen, K.N.; Faralli, S.; Hui-Wen Chen; Peters, J.D.; Garcia, J.M.; Bowers, J.E.; Blumenthal, D.J., Photonics Society Summer Topical Meeting Series, 2011 IEEE, 30 Aug 2011

C169. "Demonstration of cascadability and phase regeneration of SOA-based all-optical DPSK wavelength converters," Kise, T.; Nguyen, K.N.; Garcia, J.M.; Poulsen, H.N.; Blumenthal, D.J., Optical Fiber Communication Conference and Exposition (OFC/NFOEC), 2011 and the National Fiber Optic Engineers Conference

C170. "25 Gbaud DQPSK receiver integrated on the hybrid silicon platform," Faralli, S.; Nguyen, K.N.; Hui-Wen Chen; Peters, J.D.; Garcia, J.M.; Blumenthal, D.J.; Bowers, J.E., Group IV Photonics (GFP), 2011 8th IEEE International Conference on

C171. "All-optical regeneration of 25-Gb/s BPSK/DPSK signals with integrated MZI-SOA wavelength converter," Kise, T.; Nguyen, K.N.; Garcia, J.M.; Poulsen, H.N.; Blumenthal, D.J.; Photonics Society Summer Topical Meeting Series, 2011 IEEE

C172. " Monolithically integrated dual-quadrature coherent receiver on InP with 30 nm tunable SG-DBR local oscillator," Nguyen, K.N.; Garcia, J.M.; Lively, E.; Poulsen, H.N.; Baney, D.M.; Blumenthal, D.J., 37th European Conference and Exhibition on Optical Communication (ECOC), 2011

C173. "Fabrication and demonstration of a pure silica-core waveguide utilizing a density-based index contrast, "John, D.D.; Bauters, J.F.; Nedy, J.; Wenzao Li; Moreira, R.; Barton, J.S.; Bowers, J.E.; Blumenthal, D.J., Conference Optical Fiber Communication Conference and Exposition (OFC/NFOEC) and the National Fiber Optic Engineers, 2011

C174. "All-optical 2R regeneration of BPSK and QPSK data using a 90° optical hybrid and integrated SOA-MZI wavelength converter pairs," Nguyen, K.N.; Kise, T.; Garcia, J.M.; Poulsen, H.N.; Blumenthal, D.J., Conference Optical Fiber Communication Conference and Exposition (OFC/NFOEC) and the National Fiber Optic Engineers, 2011

C175. "Demonstration of end-to-end interoperability between legacy 100MbE and a 40Gb/s optical label switched network layer," Garcia, J.M.; Poulsen, H.N.; Blumenthal, D.J., 37th European Conference and Exhibition on Optical Communication (ECOC), 2011

C176. "An adaptation layer for real-time interoperability between legacy 100MbE and 40Gb/s (and beyond) optical label switched networks," Garcia, J.M.; Poulsen, H.N.; Blumenthal, D.J. , IEEE Photonics Society Summer Topical Meeting Series, 2011

C177. " Ultra-low-loss single-mode Si3N4 waveguides with 0.7 dB/m propagation loss," Bauters, J.F.; Heck, M.J.R.; John, D.D.; Ming-Chun Tien; Wenzao Li; Barton, J.S.; Blumenthal, D.J.; Bowers, J.E.; Leinse, A.; Heideman, R.G., 37th European Conference and Exhibition on Optical Communication (ECOC), 2011

C178. "Ultra-low-loss (<0.1 dB/m) Planar Silica Waveguide Technology," Bauters, J.F.; Heck, M.J.R.; John, D.D.; Barton, J.S.; Blumenthal, D.J.; Bowers, J.E.; Bruinink, C.M.; Leinse, A.; Heideman, R.G., IEEE Photonics Conference (PHO), 2011

C179. "Hybrid Silicon DQPSK Receiver," Nguyen, J. N, Faralli, S., H-W Chen, J. D. Peters, J. M Garcia, J. E. Bowers, D. J. Blumenthal, *IEEE Photonics Society Summer Topical Meeting on Terabit Optical Ethernet*, Paper MC3.2, Montreal, Canada

C180. "25 Gbaud DQPSK receiver integrated on the hybrid silicon platform," Faralli, S.; Nguyen, K.N.; Hui-Wen Chen; Peters, J.D.; Garcia, J.M.; Blumenthal, D.J.; Bowers, J.E., *2011 8th IEEE International Conference on Group IV Photonics (GFP)*, Paper FA4

2012

C181. "Homodyne Dual-Quadrature Coherent Receiver with Injection-Locked Monolithically Integrated Local Oscillator," Kimchau N. Nguyen, John M. Garcia, Erica Lively, Henrik N. Poulsen, Douglas M. Baney, Daniel J. Blumenthal, Conference on Optical Fiber and Communications (OFC/NFOEC), Paper OW3G.2, Los Angeles, CA

C182. "A Comparison of Approaches for Ultra-Low-Loss Waveguides." J. Bauters, M. R. Heck, D. D. John, J. S. Barton, C. M. Bruinink, A. Leinse, R. Heideman, D. J. Blumenthal, and J. E. Bowers, Optical Fiber Communication Conference (OFC), Los Angeles California, Paper OTu1l

C183. Demonstration of Etch-less Core Definition Process for Low-Loss Glass Waveguide Fabrication, D. D. John, R. Moreira, J. S. Barton, J. F. Bauters, M. J. R. Heck, J. E. Bowers, and D. J. Blumenthal, Presented at the 16th European Conference on Integrated Optics (ECIO), Sitges, Barcelona, Spain, 2012, paper 129.

C184. "High Extinction, Broadband, and Low Loss Planar Waveguide Polarizers," J. F. Bauters, M. Heck, D. Dai, D. D. John, J. Barton, D. J. Blumenthal, and J. E. Bowers, Integrated Photonics Research, Silicon and Nanophotonics (IPRSN), Colorado Springs, CO, Paper ITu2B

2013

C185. "Demonstration of Edge Interoperability, Re-Shaping and Re-Timing using Hybrid Mode-Locking within a 40Gb/s Optical Packet Router," J. Garcia, K. Nguyen, M. Belt, H. Poulsen, and D. Blumenthal, in Optical Fiber Communication Conference/National Fiber Optic Engineers Conference 2013, OSA Technical Digest (online) (Optical Society of America, 2013), paper OTh4D.7

C186. "Analysis of WDM and OTDM 256-QAM for 1 Tb/s Transmission Link," W. Li and D. Blumenthal, in Advanced Photonics 2013, S. Chandrasekhar, M. Jinno, and G. Raybon, eds., OSA Technical Digest (online) (Optical Society of America, 2013), paper NT4C.3.

C187. "Optical Interconnect for 3D Integration of Ultra-Low Loss Planar Lightwave Circuits," R. Moreira, J. Barton, M. Belt, T. Huffman, and D. Blumenthal, in Advanced Photonics 2013, H. Chang, V. Tolstikhin, T. Krauss, and M. Watts, eds., OSA Technical Digest (online) (Optical Society of America, 2013), paper IT2A.4.

C188. "Apodized and Un-Apodized Sidewall Grating Filters with Low Coupling Constants in Ultra-Low-Loss Si3N4 Planar Waveguides," M. Belt, M. Heck, J. Barton, J. Bauters, J. Bowers, and D. Blumenthal, in Optical Fiber Communication Conference/National Fiber Optic Engineers Conference 2013, OSA Technical Digest (online) (Optical Society of America, 2013), paper OTu3C.3.

2015

C189. "Compact Programmable Monolithically Integrated 10-Stage Multi-Channel WDM Dispersion Equalizer on Low-Loss Silicon Nitride Planar Waveguide Platform," Renan Moreira, Sarat Gundavarapu and Daniel Blumenthal, Optical Fiber Communication Conference/National Fiber Optic Engineers Conference 2015, OSA Technical Digest (online) (Optical Society of America, 2015), Paper Th1F.4

C190. "High Temperature Operation of an Integrated Erbium-Doped DBR Laser on an Ultra-Low-Loss Si3N4 Platform," M. Belt and D. J. Blumenthal, Optical Fiber Communication Conference/National Fiber Optic Engineers Conference 2015, OSA Technical Digest (online) (Optical Society of America, 2015), Paper Tu2C.7

C191. "Frequency modulated laser optical gyroscope," Shen, Y.; Tran, M.; Srinivasan, S.; Hulme, J.; Peters, J.; Belt, M.; Gundavarapu, S.; Li, Y.; Blumenthal, D.; Bowers, J. E., Photonics Conference (IPC), Pages: 431 - 432, DOI: 10.1109/IPCon.2015.7323615 (2015)

C192. "Integrated Ultra-Low-Loss Silicon Nitride Waveguide Coil for Optical Gyroscopes," Sarat Gundavarapu, Taran Huffman, Renan Moreira, Michael Belt, John E. Bowers and Daniel J. Blumenthal, Optical Fiber Communication Conference (OFC/NFOEC), OSA Technical Digest, Anaheim, California United States, 20–22 March 2016, paper W4E.5 (2015)

2016

C193. "Frequency Modulated Laser Based Interferometric Optical Gyroscrope," Minh A. Tran, Sarat Gundavarapu, Michael Belt, Tin Komljenovic, Daniel J. Blumenthal, and John E. Bowers, CLEO: 2016, OSA Technical Digest (online) (Optical Society of America, 2016), poster JTu5A.140.

C194. "Ultra-low Loss Stitching for Large-Area Waveguide Based Delay-Line Gyroscopes," T. Huffman, M. Davenport, M. Belt, J. E. Bowers and D. J. Blumenthal, *2016 IEEE Photonics Conference, 29th Annual Conference of The IEEE Photonics Society, 2 - 6 October (2016)*

2017

C195. "Integrated Sagnac Optical Gyroscope Sensor Using Ultra-Low-Loss High Aspect Ratio Silicon Nitride Waveguide Coil," Sarat Gundavarapu; Michael Belt; Taran Huffman; Minh A. Tran; Tin

Komljenovic; John E. Bowers; Daniel J. Blumenthal; Proceedings Volume 10323, 25th International Conference on Optical Fiber Sensors; Jeju, Republic of Korea, doi: 10.1117/12.2263411 (2017)

C196. "Effect of direct PRBS modulation on laser driven fiber optic gyroscope," S. Gundavarapu, T. Komljenovic, M. A. Tran, M. Belt, J. E. Bowers and D. J. Blumenthal, *2017 IEEE International Symposium on Inertial Sensors and Systems (INERTIAL)*, Kauai, HI, 2017, pp. 1-3. doi: 10.1109/ISISS.2017.7935669

C197. "The first integrated optical driver chip for fiber optic gyroscopes," M. A. Tran, J. C. Hulme, T. Komljenovic, M. Kennedy, D. J. Blumenthal and J. E. Bowers, *2017 IEEE International Symposium on Inertial Sensors and Systems (INERTIAL)*, Kauai, HI, 2017, pp. 47-49.

2018

C198. "Extended Reach 40km Transmission of C-Band Real-Time 53.125 Gbps PAM-4 Enabled with a Photonic Integrated Tunable Lattice Filter Dispersion Compensator," G. M. Brodnik, C. Pinho, F. Chang, and D. J. Blumenthal, in Optical Fiber Communication Conference, OSA Technical Digest (online) (Optical Society of America, 2018), paper W2A.30 (2018)

2019

C199. "Photonic Integrated Si_3N_4 Ultra-Large-Area Grating Waveguide MOT Interface for 3D Atomic Clock Laser Cooling," Nitesh Chauhan, Debapam Bose, Matthew Puckett, Renan Moreira, Karl Nelson, Daniel Blumenthal *Conference on Lasers and Electro-Optics (CLEO), OSA Technical Digest (Optical Society of America, 2019), paper STu4O.3. San Jose, CA, 2019.*

C200. "Higher Order Cascaded SBS Suppression Using Gratings in a Photonic Integrated Ring Resonator Laser," M. Puckett, D. Bose, K. Nelson, and D. J. Blumenthal, in *Conference on Lasers and Electro-Optics (CLEO Europe)*, OSA Technical Digest (Optical Society of America, 2019), paper SM4O.1

C201. "Reducing Noise in a Ring-laser Gyro Based on Stimulated Brillouin Scattering," K. D. Nelson, M. W. Puckett, J. Wu, D. Bose, S. Gundavarapu, D. J. Blumenthal, editors. 2019 IEEE International Symposium on Inertial Sensors and Systems (INERTIAL); 2019 1-5 April, Naples, FL, USA, 2019, pp. 1-4.

C202. "Widely tunable optical local oscillator scheme for RF photonic down-conversion," G. M. Brodnik, M. Harrington, L. Stern, W. Zhang, S. Papp, P. Morton and D. J. Blumenthal, *2019 IEEE Avionics and Vehicle Fiber-Optics and Photonics Conference (AVFOP), Arlington, VA, USA, 2019, pp. 1-2.*

C203. "Silicon Nitride Ring Resonators with 0.123 dB/m Loss and Q-Factors of 216 Million for Nonlinear Optical Applications," M. W. Puckett, J. Wang, D. Bose, G. M. Brodnik, J. Wu, K. Nelson, and D. J. Blumenthal, in *2019 Conference on Lasers and Electro-Optics Europe and European Quantum Electronics Conference*, OSA Technical Digest (Optical Society of America, 2019), paper ce_11_3.

2020

C204. "Chip-Scale, Optical-Frequency-Stabilized PLL for DSP-Free, Low-Power Coherent QAM in the DCI," Grant Brodnik; Mark Harrington; Debapam Bose; Andrew Netherton; Wei Zhang; Liron Stern; Paul Morton; John Bowers; Scott Papp; Daniel Blumenthal, *2020 Conference on Optical Fiber Communications (OFC)*, Paper M3A.6, San Diego, CA, March 5-6 (2020)

C205. "Kerr Soliton Microcomb Pumped by an Integrated SBS Laser for Ultra-Low Linewidth WDM Sources ," Mark Harrington; Grant Brodnik; Travis Briles; Jordan Stone; Richelle Streater; Scott Papp; Daniel J. Blumenthal, *2020 Conference on Optical Fiber Communications (OFC)*, Paper T4G.6, San Diego, CA, March 5-6 (2020)

C206. "Ultra-Narrow Linewidth Chip-Scale Heterogeneously Integrated Silicon/III-V Tunable Laser Pumped Si/Si3N4 SBS Laser," Grant M. Brodnik, Songtao Liu, Mark W. Harrington, Debapam Bose, Minh A. Tran, Duanni Huang, Joel Guo, Lin Chang, Paul A. Morton, John E. Bowers, and Daniel J. Blumenthal, *Conference on Lasers and Electrooptics (CLEO)* 2020, San Jose, CA. (2020)

C207. "Low-loss D-shape Silicon Nitride Waveguides Using a Dielectric Lift-off Fabrication Process," Qiancheng Zhao, Jiawei Wang, Nitesh Chauhan, Debapam Bose, Naijun Jin, Renan Moreira, Ryan Behunin, Peter Rakich, Daniel Blumenthal, Paper STh1J.3, *Conference on Lasers and Electrooptics (CLEO) 2020, San Jose, CA*. (2020)

C208. "Ultra-Low Loss 698 nm and 450 nm Silicon Nitride Visible Wavelength Waveguides for Strontium Atomic Clock Applications," Nitesh Chauhan, Jiawei Wang, Debapam, Renan Moreira, Daniel Blumenthal, Paper STh1J.2, *Conference on Lasers and Electrooptics (CLEO) 2020, San Jose, CA (2020)*

C209. "Evidence of visible wavelength spontaneous Brillouin scattering in Si3N4 waveguides," Chauhan, Nitesh, Bose, Debapam, Straus, Michael, Holliman, Craig A., Jayich, Andrew M., Behunin, Ryan O., Blumenthal, Daniel J, *OSA 2020 Frontiers in Optics,* Paper FW1D. 5 (2020)

2021

C210. "Laser Frequency Drift Stabilization Using an Integrated Dual-Mode Locking Si3N4 Waveguide Reference Cavity," Qiancheng Zhao, Mark W. Harrington, Andrei Isichenko, Grant M. Brodnik, Kaikai Liu, Ryan O. Behunin, Peter T. Rakich, Chad W. Hoyt, Chad Fertig, Scott B. Papp, and Daniel J. Blumenthal, Paper STh2B.,7, *Conference on Lasers and Electrooptics (CLEO) 2021, Virtual Conference, May 9 – 14 (2021)*

C211. "Milliwatt Threshold Ultra-Low Linewidth Photonic Integrated Si3N4 Brillouin Laser," Kaikai Liu, Matthew W. Puckett, Mark W. Harrington, Grant M. Brodnik, Qiancheng Zhao, Nitesh Chauhan, Jiawei Wang, Ryan O. Behunin, Karl D. Nelson, Daniel J. Blumenthal, Paper SF2O.1, *Conference on Lasers and Electrooptics (CLEO) 2021, Virtual Conference, May 9 – 14 (2021)*

C212. "Independently Coupled and PZT Controllable Photonic Integrated Three-Resonator Photonic Molecule," Jiawei Wang, Kaikai Liu, Qiancheng Zhao, Andrei Isichenko, Ryan Q. Rudy, Daniel J. Blumenthal, Paper STu1F.7, *Conference on Lasers and Electrooptics (CLEO) 2021, Virtual Conference, May 9 – 14 (2021)*

C213. "Ultra-low-loss photonic circuits with integrated quantum dot single-photon sources," Hugo Laroque, Renan Moreira, Biswarup Guha, Ashish Chanana, Jin-Dong Song, Jacques Carolan, Dirk Englund, Daniel J. Blumenthal, Kartik Srinivasan, Marcelo Davanco, *Conference on Lasers and Electrooptics (CLEO) 2021,* Paper SF2B.5, Virtual Conference, May 9 – 14 (2021)

C214. "Precision laser stabilization using photonic integrated coil resonator," Liu, Kaikai, Chauhan, Nitesh, Wang, Jiawei, Morton, Paul A., Behunin, Ryan, Blumenthal, Daniel J., *Frontiers in Optics and Laser Science 2021,* Paper FTH2A.1, Virtual Conference, DOI: 10.1364/FIO.2021.FTh2A.1, May 9 – 14 (2021)

C215. "Low loss, low power, silicon nitride PZT stress-optic microresonator modulator for control functions," Wang, Jiawei, Zhao, Qiancheng, Rudy, Ryan Q., Blumenthal, Daniel J., *Frontiers in Optics and Laser Science 2021,* Paper FW6B.2, Virtual Conference, DOI: 10.1364/FIO.2021.FW6B.2, May 9 – 14 (2021)

C216. "Silicon Nitride Bus-Coupled Spiral-Ring Resonator for Dual-Mode Locking Temperature Stabilization," Qiancheng Zhao, Mark W. Harrington, Andrei Isichenko, Debapam Bose, Jiawei Wang, Kaikai Liu, Ryan O. Behunin, Peter T. Rakich, Chad W. Hoyt, Chad Fertig, and Daniel J. Blumenthal*, Conference on Optical Fiber Communications (OFC),* Virtual Conference (2021)

C217. "Self-Similar Ultra-High Q Si 3 N 4 Integrated Resonators for Brillouin Laser Linewidth Narrowing and Stabilization," Kaikai Liu, Grant M. Brodnik, Mark W. Harrington, Andrei Isichenko, Qiancheng Zhao, John Dallyn, Ryan O. Behunin, Paul Morton, Scott Papp, Daniel J. Blumenthal*, Conference on Optical Fiber Communications (OFC),* Paper Th4B.2, Virtual Conference, DOI: 10.1364/OFC.2021.Th4B.2 (2021)

C218. "Low power consumption silicon photonics datacenter interconnects enabled by a parallel architecture," Malik, Aditya, Liu, Songtao, Timurdogan, Erman, Harrington, Mark, Netherton, Andrew, Saeidi, Mitra, Blumenthal, Daniel J., Theogarajan, Luke, Watts, Michael, Bowers, John E., *Optical Fiber Communication Conference (OFC) 2021*, Paper W6A.3, Virtual Conference, DOI: 10.1364/OFC.2021.W6A.3, June 6 (2021)

C219. "Silicon Nitride Bus-Coupled Spiral-Ring Resonator for Dual-Mode Locking Temperature Stabilization," Q. Zhao, M. W. Harrington, A. Isichenko, D. Bose, J. Wang, K. Liu, R. O. Behunin, P. T. Rakich, C. W. Hoyt, C. Fertig, D. J. Blumenthal, *Optical Fiber Communication Conference (OFC) 2021*, Paper Th4B.5, Virtual Conference, June 6 (2021)

C220. "Tantalum Pentoxide Slot Waveguides for Waveguide Enhanced Raman Spectroscopy," Liu, Zuyang, Zhao, Qiancheng, Shi, Peixin, Mitchell, Bill, Zhao, Haolan, Le Thomas, Nicolas, Blumenthal, Daniel J., Baets, Roel, *2021 Conference on Lasers and Electro-Optics Europe and European Quantum Electronics Conference (CLEO Europe/EQEC)*, Paper ch.6.2, Munich (2021)

C221. "720 Million Quality Factor Integrated All-Waveguide Photonic Resonator," K. Liu, N. Jin, H. Cheng, M. W. Puckett, R. O. Behunin, K. D. Nelson, P. T. Rakich, D. J. Blumenthal, *2021 Device Research Conference (DRC)*, DOI: 10.1109/DRC52342.2021.9467132, 20-23 June, (2021)

2022

C222. "Semiconductor Laser Stabilized by a 4 Meter Coil-waveguide Resonator," Kaikai Liu, Nitesh Chauhan, Jiawei Wang, Andrei Isichenko, Grant M. Brodnik, Paul A. Morton, Ryan Behunin, Scott B. Papp, and Daniel J. Blumenthal, *Optical Fiber Communication Conference (OFC) 2022*, Paper Tu3D.2, San Diego, CA, March 6-11 (2022)

C223. "Ultra-low Loss Silicon Nitride Ring Modulator with Low Power PZT Actuation for Photonic Control," Jiawei Wang, Kaikai Liu, Mark W. Harrington, Ryan Q. Rudy, Daniel J. Blumenthal, *Optical Fiber Communication Conference (OFC) 2022*, Paper W3D.5, San Diego, CA, March 6-11 (2022)

C224. "250C Process for < 2dB/m Ultra-Low Loss Silicon Nitride Integrated Photonic Waveguides," Debapam Bose, Jiawei Wang and Daniel J. Blumenthal, *Conference on Lasers and Electrooptics (CLEO)*, Paper , San Jose, CA, 15 – 20 May (2022).

C225. "Photonic integrated cascade-inhibited Brillouin laser with sub-100-mHz fundamental linewidth," K. Liu, M. Harrington, K. D. Nelson, R. O. Behunin, S. B. Papp and D. J. Blumenthal, *Conference on Lasers and Electrooptics (CLEO)*, Paper , San Jose, CA, 15 – 20 May (2022).

C226. "A low-power PZT stress-optic Si3N4 micro-ring modulator for PDH locking applications," J. Wang, K. Liu, M. Harrington, R. Rudy and D. J. Blumenthal, *Conference on Lasers and Electrooptics (CLEO)*, Paper , San Jose, CA, 15 – 20 May (2022).

C227. "Cooling rubidium atoms with a photonic integrated 3D magneto-optical trap," Isichenko, A., Chauhan, N., Bose, D., Kunz, P. D., Blumenthal, D. J., Paper STu4G.6, *Optical Sensors and Sensing Congress 2022 (AIS, LACSEA, Sensors, ES)*, Vancouver, British Columbia (2022)

C228. **"**Microfabrication of Dielectric Resonators with Q-Factor Exceeding 5 Billion, Paper FM4C.1, *Frontiers in Optics + Laser Science meeting (FIO-LS)*, Oct. 17 – 22, 2022

C229. "Integrated 3.0 meter coil resonator for λ = 674 nm laser stabilization," Nitesh Chauhan, Kaikai Liu, Andrei Isichenko, Jiawei Wang, Henry Timmers, Daniel J. Blumenthal, Paper FM1E.1, *Frontiers in Optics + Laser Science meeting (FIO-LS)*, Oct. 17 – 22 (2022)

C230. "Sub-dB/m loss integrated 103 and 90 million Q resonators for laser stabilization at rubidium and strontium wavelengths," Nitesh Chauhan, Andrei Isichenko, Jiawei Wang, Daniel J. Blumenthal, Paper MG4.3, *IEEE Photonics Conference (IPC),* 13 – 17 Vancouver, CA, (2022)

2023

C231. "DSP-Free Frequency Stabilized DCI Coherent Fiber Links Operating at 5.4Tbps 15λx90G-16QAM, 330G 72G-32QAM, and 336G 56G-64QAM," Mark Harrington, Grant Brodnik, Andrei Isichenko, Kaikai Liu, Travis Briles, Scott Papp, and Daniel Blumenthal, *Optical Fiber and Communications Conference (OFC)*, Paper M1E.3, San Diego, CA, March 5-9 (2023)

C232. "27 Hz Integral Linewidth Laser Based on a 5-billion Q Microfabricated Reference Cavity," Andrei Isichenko, Flame Feng, Naijun Jin, Kaikai Liu, Mark Harrington, Peter Rakich, and Daniel Blumenthal, *Optical Fiber and Communications Conference (OFC)*, Paper Th3A.2, San Diego, CA, March 5-9 (2023)

C233. "Optical Frequency Transfer Stability of 1E-15 at 1 Second Over Correlated Core Pairs in a 40 km 7-core Fiber Link," Mark W. Harrington, Nicolas Fontaine, Mikael Mazur, Daniel J. Blumenthal, *Optical Fiber and Communications Conference (OFC)*, Paper M3J.3, San Diego, CA, March 5-9 (2023)

C234. "780 nm Narrow-Linewidth Laser by Self-Injection Locking a Low-Cost Fabry-Pérot Laser To an Integrated Si3N4 145 million Q Resonator," Andrei Isichenko, Nitesh Chauhan, Kaikai Liu, Mark Harrington, and Daniel J. Blumenthal, *The 10th IEEE International Symposium on Inertial Sensors & Systems*, Kauai, HI, March 28 - 31 (2023)

C235. "Integrated High-Extinction-Ratio 2.0-Meter Unbalanced MZI for Laser Frequency Noise Measurement," Kaikai Liu, Jiawei Wang, Andrei Isichenko, Nitesh Chauhan, Daniel Blumenthal, Paper STu4P.5, *Conference on Lasers and Electrooptics (CLEO)*, San Jose, CA, May 7-12 (2023)

C236. "Tunable Integrated 118 Million Q Reference Cavity for 780 nm Laser Stabilization and Rubidium Spectroscopy," Andrei Isichenko, Nitesh Chauhan, Jiawei Wang, Mark Harrington, Kaikai Liu,

Daniel Blumenthal, *Conference on Lasers and Electrooptics (CLEO)*, Paper SF3K.4, San Jose, CA, May 7-12 (2023)

C237. "Visible 780 nm SBS laser with mW level threshold in an ultra-high 145 million Q integrated waveguide resonator," Nitesh Chauhan, Andrei Isichenko, Kaikai Liu, Daniel Blumenthal, *Conference on Lasers and Electrooptics (CLEO)*, Paper SF1K.6, San Jose, CA, May 7-12 (2023)

C238. "AOM-Free Laser Stabilization using integrated Silicon Nitride Carrier-Tracking Stress-Optic Modulator and Reference Cavity," J. Wang; K. Liu; R. Rudy; D. J. Blumenthal, Paper QW3B.3, *Optica Quantum 2.0 Conference*, Denver, CO, June 19-22 (2023)

INVITED INDUSTRY, GOVERNMENT AND ACADEMIA TALKS

SWEP1. D. J. Blumenthal, "Photonic Switching Networks and Optical Control Systems," *GTE Seminars*, Waltham, MA, March (1989).

SWEP2. D. J. Blumenthal, "Network Requirements for Distributed Computing (MIMD)," *AFOSR Digital Optical Computing Workshop*, Vail, CO, January (1991).

SWEP3. D. J. Blumenthal, "National Science Foundation Site Review Visit," Boulder, CO, April (1991).

SWEP4. D. J. Blumenthal, "National Science Foundation Site Review Visit," Boulder, CO, January (1992).

SWEP5. D. J. Blumenthal and J. R. Sauer, "Multiwavelength Fast Photonic Packet Switches," Atlanta, GA, September (1993).

SWEP6. D. J. Blumenthal, "Wavelength Division Multiplexed Optical Communications and Photonic Networks," *Alcatel Photonics Components Unit*, Marcoussis, France, June (1995).

SWEP7. D. J. Blumenthal, "Wavelength Division Multiplexed Optical Communications and Photonic Networks," *Royal Institute of Technology, Department of Photonics and Microwave Engineering*, Stockholm, Sweden, June (1995).

SWEP8. D. J. Blumenthal, "Wavelength Division Multiplexed Optical Communications and Photonic Networks," *Princeton University*, EE Department, Princeton, NJ, December (1995).

SWEP9. D. J. Blumenthal, "In-Line WDM Processing and Communications," *AFOSR Workshop on Multiple Wavelengths In Free-Space Optical Interconnects*, Taos, New Mexico, February (1996).

SWEP10. D. J. Blumenthal, "Optical and Optoelectronic Wavelength Conversion Techniques for WDM Communications and Networks," *Hewlett Packard talk*, Palo Alto, CA, February (1997).

SWEP11. D. J. Blumenthal, "WDM Optical Packet Switching," *MOST Review '97*, DARPA, Washington, DC, June (1997) (Invited talk).

SWEP12. D. J. Blumenthal, "Techniques For Packet Handling/Switching Using Photonics and Optoelectronics," *Nortel Seminar*, Ottawa, Canada, September (1997).

SWEP13. D. J. Blumenthal, "WDM Optical Networks," *Optical Networks Workshop*, Lab for Physical Sciences, University of Maryland, College Park, MD, October 28-30 (1997).

SWEP14. D. J. Blumenthal, "WDM Optical Packet Switching," *MOST Review '98/DARPA,* Washington, DC, June (1998).

SWEP15. D. J. Blumenthal, "Performance and State Monitoring for Optical WDM Networks," *Nortel Seminar*, Ottawa, Canada, June (1998).

SWEP16. D. J. Blumenthal "Devices for Optical WDM Networks," *Nortel Seminar*, Ottawa, Canada, June (1998).

SWEP17. D. J. Blumenthal, "Communications and Networking Research at UCSB and Dense High Speed WDM Trials," *Caltech/JPL Seminar*, Pasadena, CA, November (1998).

SWEP18. D. J. Blumenthal, "Dense High-Speed WDM Trials," *NTON Kickoff Meeting*, Pasadena, CA, November (1998).

SWEP19. D. J. Blumenthal, "All-Optical Label Swapping for Optical Internet Protocol Routing and Underlying Technologies," *Lucent Technologies*, Red Bank, NJ, June 15 (1999).

SWEP20. D. J. Blumenthal, G. Rossi, T. Dimmick, R. Doshi and O. Jerphagnon, "Performance Monitoring in WDM Optical Networks," *Nortel Seminar*, Ottawa Canada, October (1999).

SWEP21. D. J. Blumenthal, "Strategizing Network Management," *The Optical Summit*, Palm Springs, CA, May 16-17 (2000).

SWEP22. D. J. Blumenthal, "All-Optical Label Swapping," *Cisco University Research Program*, Cisco Headquarters, San Jose, CA, September 18 (2000).

SWEP23. D. J. Blumenthal, "Agile Optical Networks" *Russell Award Lecture*, University of Michigan, Ann Arbor, MI, March 2002.

SWEP24. D. J. Blumenthal, "A Perspective on Optical Research Networks" *CENIC 2002*, San Diego, CA, May (2002).

SWEP25. D. J. Blumenthal, "Optical Switching Technologies and Routing Architectures," *Intel Corp.,* Santa Clara, CA, January 9 (2003).

SWEP26. D. J. Blumenthal, "Optical Packet & Burst Switching," *ON*VECTOR Photonics Workshop*, University of California, San Diego, CA, February 2-4 (2003).

SWEP27. D. J. Blumenthal, "All-Optical Signal Processing for All-Photonic Packet and Burst Networks, " *Center for Photonic Communication and Computing Seminar Series*, Northwestern University, Evanston, IL, February 24 (2003).

SWEP28. D. J. Blumenthal, "Agile Photonic Switching Systems," *Intel, Corp.* Santa Clara, CA, May (2005).

SWEP29. D. J. Blumenthal, "Mapping a Future for Optical Networking and Communications," *Light Reading Webinar,* June 27 (2006).

SWEP30. D. J. Blumenthal, "Future Internet Architectures, Platforms, and Technologies," *Cisco Systems Routing Research Symposium*, San Jose, CA, August 29 – 30 (2006).

SWEP31. D. J. Blumenthal, "Optoelectronics, Photonics and Optical Networks," *Engineering insights Track 2: Communications and Networking*, UCSB College of Engineering, Santa Barbara, CA, October (2006).

SWEP32. D. J. Blumenthal, "Optical Techniques For Circuits And Packet-Based Networking," *Cisco Research Center Meeting on Future Internet Architecture, Platforms and Technologie*s, Cisco Systems, San Jose, CA January (2007).

SWEP33. D. J. Blumenthal, "Optical Techniques For Circuits And Packet-Based Networking," *Stanford University, Clean Slate Center Seminar Series*, Stanford, CA, February (2007).

SWEP34. D. J. Blumenthal, "Optical Circuit and Packet Switching Techniques and Integration Technologies," *University of Washington*, Seattle, WA, April (2007).

SWEP35. D. J. Blumenthal, "Optical Circuit and Packet Switching Techniques and Integration Technologies," *Cisco Enterprise Business Group Technical Talk,* Cisco Systems, San Jose, CA, April (2007).

SWEP36. D. J. Blumenthal, "Optical Circuit and Packet Switching Techniques and Integration Technologies," *Google Technical Seminar*, San Jose, CA, May 23 (2007).

SWEP37. D. J. Blumenthal, "Backbone Node High Level Requirements," *GENI Optical Workshop*, Washington, DC, September 25 (2007).

SWEP38. D. J. Blumenthal, "Integrated Photonic Technologies for Optical Networks," *Engineering Insights 2008 – Breakout Session on "Towards Terabit Access Networks*, UCSB College of Engineering, Santa Barbara, CA, February (2008).

SWEP39. D. J. Blumenthal, "Small Buffers and the Impact on Optical Packet Router Architectures and Integration Technologies," *Google*, San Jose, CA, October 8 (2009).

SWEP40. D. J. Blumenthal, "Terabit Optical Ethernet (TOE) and Many Symbol Coherent Optical Terabit PICs (MASCOT)," Princeton University, Department of EE, March 8 (2010)

SWEP41. D. J. Blumenthal, "Terabit Optical Ethernet (TOE) and Many Symbol Coherent Optical Terabit PICs (MASCOT), MIT, Department of ECE, March 11 (2010)

SWEP42. D. J. Blumenthal, "Terabit Optical Ethernet (TOE) and Many Symbol Coherent Optical Terabit PICs (MASCOT), Harvard University, Department of EE and Applied Physics, March 12 (2010)

SWEP43. D. J. Blumenthal, "Energy Efficient Photonics for Communication and Application to the Terabit Optical Ethernet Center (TOEC)," Santa Barbara Summit on Energy Efficiency, Institute for Energy Efficiency, Four Seasons Biltmore, May 12 (2010)

SWEP44. D. J. Blumenthal, J. M. Garcia and H. N. Poulsen, "Optical Packet Switching Core router packet forwarding and edge adaptation," Google, San Jose, CA, November (2010)

SWEP45. D. J. Blumenthal, "The Road to Terabit Optical Ethernet," Stanford Green Workshop, Stanford University, February (2011)

SWEP46. D. J. Blumenthal, "Future Data Center, Warehouse and Cloud Requirements on WDM Communications Heading to Terabit/sec," Infinera Corporation, San Jose, CA, November (2011)

SWEP47. "Technical hurdles that need addressing for next generation communications networks," Sixth Annual OIF Technology Summit at OFC/ Los Angeles, CA, March (2015)

SWEP48. "Realization of Low SWaP+C Environmentally Robust Integrated Waveguide Optical Gyros and PNT Systems," DARPA Micro-PNT Spring 2015 PI Meeting/Pittsburgh, PA, April (2015)

SWEP49. "Realization of Low SWAP+C Environmentally Robust Integrated Waveguide Optical Gyros and PNT Systems," DARPA microPNT Fall 2015 Program Review/San Diego, CA, October (2015)

SWEP50. "Ultra-Low Loss Waveguide Technology and Integration Platform: Challenges Overcome and New Chip-Scale Applications," MIT Seminar/Boston, MA, (2015)

SWEP51. "Chip-Scale Optical Gyros Based on Integrated Ultra Low-Loss Waveguide Coils and Silicon Photonic Front Ends," Eighth Annual Autonomous Guidance, Navigation and Control (AGN&C) Symposium, Draper Labs, Boston, MA, Nov. 3, 2016

SWEP52. "Data Communications and Network Opportunities with Next Generation Low Power Terabit Photonic Integration," Microsoft Network Group, Microsoft, Redmond, WA, Dec. 9, 2016

SWEP53. "Ultra-Low Loss SiN Waveguide Platform for Integrated Passive and Active Components and Next Generation Photonic Integrated Circuits," Microsoft Optics Group, Microsoft, Redmond, WA, Dec. 9, 2016

SWEP54. "Next Generation Ultra Low Loss Si3N4 Integrated Photonics and Applications," Facebook, Palo Alto, CA, Jan. 19, 2017

SWEP55. "Next Generation Ultra Low Loss Si3N4 Integrated Photonics and Applications," Google, Palo Alto, CA, Jan. 20, 2017

SWEP56. "Ultra-Low Loss Integration Platform for Passive and Active Components for Next Generation Photonic Integrated Circuits and Terabit Optical Interfaces and Interconnects," UC Berkeley, Berkeley, CA March 24, 2017

SWEP57. "Ultra-Low Loss Si_3N_4 Integration Platform for Passive and Active Components for Next Generation Photonic Integrated Circuits," University of Maryland, Engineering, College Park, MD, April 25, 2017

SWEP58. "Ultra-Low Loss Si_3N_4 Passive and Active Integration Platform and Next Generation Photonics (NGP)," IEEE Photonics Society, Light Science Workshop, UCSB, Santa Barbara, CA, May 10, 2017

SWEP59. "Data Communications and Network Opportunities with Next Generation Ultra Low Loss Photonic Integration," Microsoft Research (MSR), Cambridge, UK, Aug. 3, 2017

SWEP60. "Low Loss Si_3N_4 Planar Integration for Passive and Active Next Generation Photonic Integrated Circuits," Northern Arizona University, Applied Physics and Materials Science, Flagstaff, AZ, Jan. 19, 2018

SWEP61. "Transforming the DCI Interconnect with Next Generation Photonics," Microsoft Faculty Research Summit, Redmond, WA, July 31, 2018

SWEP62. "Frequency Stabilized Coherent Optical Low-Energy WDM DC Interconnects," ARPA-e ENLITENED Annual Meeting, Seattle, WA, Oct. 22, 2018

SWEP63. FRESCO: FREquency Stabilized Coherent Optical Low-Energy WDM DC Interconnects," IEE Director's Council Meeting, UCSB, Santa Barbara, CA, Nov. 2, 2018

SWEP64. "Ultra-Capacity Highly Integrated Low Energy Photonics for Scaling Fiber DCIs," Microsoft Research (MSR), Redmond, WA, Aug. 6, 2019

SWEP65. "Quiet Light" and Integrated Ultra-Narrow Linewidth SBS Lasers," MIT Optics and Quantum Electronics Seminar Series, MIT, Cambridge, MA, Oct. 16, 2019

SWEP66. "Ultra-Stable Photonic Integrated Sub-Hz Fundamental Linewidth Brillouin Lasers and Their Applications," Institute of Optics and Haim School of Engineering and Applied Sciences Colloquium, University of Rochester, Rochester, NY, April 8, 2019

SWEP67. "Ultra-Stable Photonic Integrated Sub-Hz Fundamental Linewidth Brillouin Lasers and Their Applications," Solid State and Optics Seminar, Department of Applied Physics, Yale University, New Haven, CT, April 10, 2019

SWEP68. "Photonic Integrated Ultra-Narrow Linewidth Brillouin Lasers and Application to Precision Timing and Ultrafast Optics," Honeywell Quantum Group, Louisville, CO, July 10, 2019

SWEP69. "Low-Energy Frequency-Stabilized Coherent WDM Fiber Links," D. J. Blumenthal, Session III: Trends and Challenges of the Fixed/Mobile Convergence Qualcomm/SRC Workshop on New Trajectories for Communication, 2020 Qualcomm, San Diego, CA, February 11-12, 2020

SWEP70. "Device Needs for Photonics QIP," DARPA Workshop on Photonics Quantum Information Processing (QIP), Arlington, VA Feb. 19, 2020

SWEP71. "Visible to IR Photonic integration, low linewidth lasers and Circuits for next Generation Applications," Army Research Labs, Washington, DC, Feb. 18, 2020

SHORT COURSES AND CONTINUING EDUCATION

SC1. "Fast Reconfigurable WDM Optical Networks and Their Physical Limitations," OFC '99, Session SC153, San Diego, CA, February 21-26 (1999).

SC2. "Fiber Optic Networks," Continuing Education Institute-Europe (CEI), Davos, Switzerland, March 8-12 (1999).

SC3. "Fiber Optic Networks," UCSD Extension, San Diego, CA, March 23-26 (1999).

SC4. "Fiber Optic Networks," Continuing Education Institute (CEI) Europe, Barcelona, Spain, October 25–29 (1999).

SC5. "Fast Reconfigurable WDM Optical Networks," OFC '00, Baltimore, MD (2000).

SC6. "Fiber Optic Networks," UCSD Extension, San Diego, CA, June 21-23 (2000).

SC7. "Fast Reconfigurable WDM Optical Networks," OFC '01, Anaheim (2001).

SC8. "Fast Reconfigurable WDM Optical Networks," OFC '02, Anaheim (2002).

SC9. "Fast Reconfigurable WDM Optical Networks," OFC '03, Anaheim (2003).

SC10. "Fast Reconfigurable WDM Optical Networks," OFC '04, Anaheim (2004).

SC11. "Fast Reconfigurable WDM Optical Networks," OFC '05, Anaheim (2005).

SC12. "Fast Reconfigurable WDM Optical Networks," OFC '06, Anaheim (2006).

SC13. "Fast Reconfigurable WDM Optical Networks," OFC '07, Anaheim (2007).

SC14. "Fast Reconfigurable WDM Optical Networks," OFC '08, San Diego (2008).

SC15. "Dynamic ROADMs, Switches and Integrated Technologies and Techniques for Dynamically Reconfigurable and Packet Switched Optical Networks," OFC '09, San Diego (2009).

SC16. "Dynamic ROADMs, Switches and Integrated Technologies and Techniques for Dynamically Reconfigurable and Packet Switched Optical Networks," OFC '10, San Diego (2010).

Ph.D. GRADUATE STUDENTS

1.	Vaughn, Mark	Chair	Degree Completed 1998
2.	Scholz, Christoph	Chair	Degree Completed 1999
3.	Lavrova, Olga	Chair	Degree Completed 2001
4.	Rau, Lavanya	Chair	Degree Completed 2003
5.	Mašanović, Milan	Co-Chair	Degree Completed 2004
6.	Rajaduray, Ramesh	Chair	Degree Completed 2005
7.	Wang, Wei	Chair	Degree Completed 2005
8.	Sysak, Matthew	Co-Chair	Degree Completed 2005
9.	Zhao, Wenbin	Chair	Degree Completed 2006
10.	Davanço, Marcelo	Chair	Degree Completed 2006
11.	Lal, Vikrant	Chair	Degree Completed 2006
12.	Rangarajan, Suresh	Chair	Degree Completed 2006
13.	Sakamoto, Steven	Co-Chair	Degree Completed 2006
14.	Zhao, Wenbin	Chair	Degree Completed 2006

15.	Summers, Joseph	Chair	Degree Completed 2007
16.	Koch, Brian	Co-Chair	Degree Completed 2008
17.	Mack, John	Chair	Degree Completed 2009
18.	Nicholes, Steve	Co-Chair	Degree Completed 2010
19.	Williams, Kimani	Chair	Degree Completed 2012
20.	Lively, Erica	Chair	Degree Completed 2012
21.	John, Demis	Chair	Degree Completed 2012
22.	Garcia, John	Chair	Degree Completed 2014
23.	Nguyen, Kim	Chair	Degree Completed 2013
24.	Li, Wenzao	Chair	Degree Completed 2013
25.	Skahan, Phillip	Chair	Degree Completed 2016
26.	Moreira, Renan	Chair	Degree Completed 2016
27.	Belt, Michael	Chair	Degree Completed 2017
28.	Huffman, Taran	Chair	Degree Completed 2018
29.	Gundavarapu, Sarat	Chair	Degree Completed 2018
30.	Grant Brodnik	Chair	Degree Completed 2022
31.	Jiawei Wang	Chair	In Progress
32.	Bose, Depham	Chair	In Progress
33.	Nitesh Chauhan	Chair	In Progress
34.	Mark Harrington	Chair	In Progress
35.	Andrei Isichencko	Chair	In Progress
36.	Kaikai Liu	Chair	In Progress
37.	David Heim	Chair	In Progress

M.S. ADVISING AND GRADUATES

1.	Jerphagnon, Olivier	Chair	Degree Completed 2004
2.	Ng, Andree	Member	Degree Completed 2006
3.	Huang, Chi-Heng	Member	Degree Completed 2006
4.	Donat, Walt	Chair	Degree Completed 2007
5.	Chun, Mellissa	Chair	Degree Completed 2009
6.	Hollar, Curtis	Chair	Degree Completed 2010

INTERNATIONAL PH.D. ADVISING

1.	Gaudino, Roberto	Politecnico di Torino Italy
2.	Carena, Andrea	Politecnico di Torino Italy
3.	Curri, Vitorio	Politecnico di Torino Italy
4.	Bosco, Gabriella	Politecnico di Torino Italy
5.	Nielsen, Mads	Technical University of Denmark
6.	Berg, Tommy	Technical University of Denmark
7.	Fok, Mable	Chinese University of Hong Kong
8.	Pinho, Catia	University of Aveiro

POST DOCS AND SENIOR SCIENTISTS

1. Qiancheng Zhao
2. Renan Moreira
3. Jared Bauters
4. Mašanović, Milan
5. Barton, Jonathon
6. Stamenic, Biljana
7. Kise, Tomofumi
8. Poulsen, Henrik
9. Mack, John
10. Wolfson, David
11. Rossi, Giammaro

12. Davanço, Marcelo
13. Rau, Lavanya
14. Rangarajan, Suresh
15. Hu, Zhaoyang
16. Yan, Xuejin
17. Wei Wang
18. Beck Mason
19. Greg Fish
20. Kothari, Nitin

ADDITIONAL TALKS

November/2016	"Chip-Scale Optical Gyros Based on Integrated Ultra Low-Loss Waveguide Coils and Silicon Photonic Front Ends"	Eighth Annual Autonomous Guidance, Navigation and Control (AGN&C) Symposium, Draper Labs, Boston, MA
December/2016	"Data Communications and Network Opportunities with Next Generation Low Power Terabit Photonic Integration"	Microsoft Network Group, Microsoft, Redmond, WA
December/2016	"Ultra-Low Loss SiN Waveguide Platform for Integrated Passive and Active Components and Next Generation Photonic Integrated Circuits"	Microsoft Optics Group, Microsoft, Redmond, WA
January/2017	"Next Generation Ultra Low Loss Si3N4 Integrated Photonics and Applications"	Google, Palo Alto, CA
March/2017	"Ultra-Low Loss Integration Platform for Passive and Active Components for Next Generation Photonic Integrated Circuits and Terabit Optical Interfaces and Interconnects"	UC Berkeley, Berkeley, CA
April/2017	"Ultra-Low Loss Si3N4 Integration Platform for Passive and Active Components for Next Generation Photonic Integrated Circuits"	University of Maryland, Engineering, College Park, MD
May/2017	"Ultra-Low Loss Si3N4 Passive and Active Integration Platform and Next Generation Photonics (NGP)"	IEEE Photonics Society, Light Science Workshop, UCSB, Santa Barbara, CA,
August/2017	"Data Communications and Network Opportunities with Next Generation Ultra Low Loss Photonic Integration"	Microsoft Research (MSR), Cambridge, UK
January/2018	"Low Loss Si3N4 Planar Integration for Passive and Active Next Generation Photonic Integrated Circuits"	Northern Arizona University, Applied Physics and Materials Science, Flagstaff, AZ
July/2018	"Transforming the DCI Interconnect with Next Generation Photonics,"	Microsoft Faculty Research Summit, Redmond, WA

October/2018	"Frequency Stabilized Coherent Optical Low-Energy WDM DC Interconnects"	ARPA-e ENLITENED Annual Meeting, Seattle, WA
November/2018	FRESCO: FREquency Stabilized Coherent Optical Low-Energy WDM DC Interconnects,"	IEE Director's Council Meeting, UCSB, Santa Barbara, CA
August/2019	"Ultra-Capacity Highly Integrated Low Energy Photonics for Scaling Fiber DCIs"	Microsoft Research (MSR), Redmond, WA
October/2019	"Quiet Light" and Integrated Ultra-Narrow Linewidth SBS Lasers"	MIT Optics and Quantum Electronics Seminar Series, MIT, Cambridge, MA
April/2019	"Ultra-Stable Photonic Integrated Sub-Hz Fundamental Linewidth Brillouin Lasers and Their Applications"	Institute of Optics and Haim School of Engineering and Applied Sciences Colloquium, University of Rochester, Rochester, NY
April/2019	"Ultra-Stable Photonic Integrated Sub-Hz Fundamental Linewidth Brillouin Lasers and Their Applications"	Solid State and Optics Seminar, Department of Applied Physics, Yale University, New Haven, CT
July/2019	"Photonic Integrated Ultra-Narrow Linewidth Brillouin Lasers and Application to Precision Timing and Ultrafast Optics"	Honeywell Quantum Group, Louisville, CO
February/2020	"Low-Energy Frequency-Stabilized Coherent WDM Fiber Links"	Trends and Challenges of the Fixed/Mobile Convergence Qualcomm/SRC Workshop on New Trajectories for Communication, 2020 Qualcomm, San Diego, CA
February/2020	"Device Needs for Photonics QIP"	DARPA Workshop on Photonics Quantum Information Processing (QIP), Arlington, VA
February/2020	"Visible to IR Photonic integration, low linewidth lasers and Circuits for next Generation Applications"	Army Research Labs, Washington, DC
August/2020	"System-Level Quantum Photonics Applications and Blueprints"	NSF Mid-Scale Quantum Infrastructure Workshop, Online