

## FULL CV: ALAN E. WILLNER

- ADDRESS:** EEB 538, Dept. of Electrical Engineering, Viterbi School of Engineering, USC, LA, CA 90089-2565, 213-740-4664, F: 213-740-8729, willner@usc.edu
- EDUCATION:** **Columbia University - Ph.D.** - Electrical Engineering - Aug. 1988 (defended). Thesis Advisor - **Prof. Richard Osgood, Jr.**, Thesis Title: Laser-Controlled Photochemical Etching of Semiconductors for Electro-optical Devices
- Columbia University - M.S.** - Electrical Engineering (1984)  
Overall Columbia grade index - **4.11** (A = 4.0)
- Yeshiva University - B.A.**- Physics (1982). Grade index - **3.96** (A = 4.0)
- WORK EXPERIENCE:**
- Fall '10 - present **Steven and Kathryn Sample Chaired Professor in Engineering, Ming Hsieh Dept. of Electrical Eng., Viterbi School of Eng., University of Southern California, Communications Sciences Institute**  
· Optical Communication Systems and Networks
- Mar. '15 – Mar. '16 Visiting Professor (Adj. Senior Res. Scientist), Elec. Eng Dept., Columbia Univ.  
Fall '98 – Spring '10 Professor, Ming Hsieh Dept. of Electrical Eng., USC  
Sept. '09 – June '14 Member, **Defense Sciences Research Council**, Consultant to Booz Allen  
· Council performs studies that are presented to DARPA Director & Office Directors
- Fall '07 - Summer '12 **Co-Director**, Communications Sciences Institute, EE Dept. Exec. Comm., USC  
Fall '07 - Summer '17 Visiting Professor, Dept. of Electronic & Electrical Eng, Univ. College London  
Nov. '99 - Nov. '02 **Founder & CTO**, Phaethon Communications (technology acquired by Teraxion)  
· Created the **ClearSpectrum**<sup>®</sup> dispersion compensator product line  
· ClearSpectrum<sup>®</sup> presently deployed in many commercial 40-Gbit/s systems
- Aug. '94 - Sept. '98 Associate Professor, Dept. of EE - Systems, USC  
April '96 - June '04 Associate Director, Student Affairs, NSF-Sponsored Engineering Research Center in Integrated Media Systems, USC
- Spring '98 **Visiting Fulbright Prof.**, Physics Dept., Weizmann Institute of Science, Israel  
Apr. '94 – Present Associate Director, Center for Photonic Technology (CPT), USC  
Jan. '92 - Present **Director, Optical Communications Laboratory**, USC  
Jan. '92 - July '94 Assistant Professor, Dept. of EE - Systems, USC  
Nov. '90 - Jan. '92 **Member of Technical Staff, Bell Comm. Research**, Photonics Research Dept.  
· Fiber Optic Wavelength-Division-Multiplexed Communication Systems
- Oct. '88 - Oct. '90 **Postdoctoral Member of the Technical Staff**, Crawford Hill Lab  
**AT&T Bell Laboratories**, Photonics Networks and Components Research Department, Postdoctoral Supervisor: **Dr. Ivan Kaminow**  
· Fiber Optic Wavelength-Division-Multiplexed Communication Systems
- Sept. '84 - Aug. '88 Graduate Research Assistant, **Columbia University**,  
Microelectronics Science Lab & NSF Center for Telecommunications Research  
· Laser-Fabricated Integrated Optical Components
- Fall '87 **Instructor, Columbia Univ.**, “Fundamentals of Circuits and Systems”  
June '87 Visiting Scientist, Naval Research Laboratory - Modulation Spectroscopy  
Summers '83, '84 Summer Technical Staff, **David Sarnoff Research Center, RCA Labs**  
Fall '83 Teaching Assistant, Columbia Univ., Solid State Devices

**HONORS:**

**Member, U.S. National Academy of Engineering ('16)**

**International Fellow of the U.K. Royal Academy of Engineering ('10)**

Of the 4 Int'l Fellows elected from the US in '10, the other 3 were Drs. Howard Bruschi (former Westinghouse CTO), Robert Langer (MIT Institute Professor) and Charles Vest (former MIT President and NAE President).

**IEEE Eric E. Sumner Award ('14)**

One "Technical Field Award" in Communications from the entire IEEE.

**Vannevar Bush Faculty Fellowship (U.S. DoD) ('16)**

Formerly Defense Security Science & Engineering Faculty Fellowship (NSSEFF)

**J. J. Thomson Medal for Achievement in Electronics, Institution of Engineering & Technology (IET) ('16)**

**Steven and Kathryn Sample Endowed Chair in Engineering ('10)**

Inaugural holder of endowed chair named after the former USC president.

**Fellow of the National Academy of Inventors ('15)**

**'09 Nobel Prize Ceremonies, "invited foreign dignitary representing sciences"**

**Thomas Egleston Medal for Distinguished Engineering Achievement ('17)**

Highest honor for a lifetime of achievement in the engineering profession. Notable winners include Edwin H. Armstrong, Harvey S. Mudd, Hyman G. Rickover.

**Honorary Professor, Huazhong Univ. of Science & Technology (HUST) ('16)**

HUST is one of the top 10 universities in China.

**Honorary Doctorate, *Honoris Causa*, Yeshiva University, Commencement ('12)**

**John Simon Guggenheim Foundation Fellowship ('12)**

**Presidential Faculty Fellows Award ('94)**

30 awards are given annually by the **White House** to faculty in all areas of science and engineering. Sponsored by the NSF.

**David & Lucile Packard Foundation Fellowship in Science & Eng. '93**

20 awards given annually in science and eng. One of three engineering awards.

**NSF National Young Investigator Award ('92)**

Formerly the **Presidential** YI Award.

**Fulbright Foundation Senior Scholar Fellowship Award ('98)**

Pursue research and lecturing at the Weizmann Institute of Science.

**Optical Society of America (OSA) Paul Forman Eng. Excellence Award ('10)**

One award given in 2010 for technical achievements in optical engineering.

**IEEE Photonics Society Engineering Achievement Award ('11)**

One award given in 2011 for technical achievements in photonics.

**Optical Society of America (OSA) Leadership Award / New Focus Prize ('09)**

One given for significant contribution to society or impact on optics.

**SPIE President's Award ('13)**

**HONORS: (CONTINUED)**

**Fellow – American Assoc. for the Advancement of Science (AAAS) ('12)**

**Fellow – Institute of Electronic and Electrical Engineers (IEEE) ('04)**

**Fellow - Optical Society of America (OSA) ('96)**

**Fellow – Society for Photo-Instrumentation Engineers (SPIE) ('10)**

**Fellow - Institution of Engineering & Technology (IET) ('16)**

**Best Contributed Technical Article, '01 Eddy Award, Pennwell Publications**

One award from all 30 magazines in Pennwell's Advanced Technology Division.

**Best Paper Award, IEEE Globecom Conference ('14)**

**Paper Selected as one of the '07 Highlights of *Nature Photonics* by its Editors**

Paper Selected: NP, vol. 1, no. 2, pp. 87-88, 2007.

**USC Associates Award, University-Wide Creativity in Research ('12)**

Two awards given from >2,000 professors at USC. Highest research award.

**USC Associates Award, University-Wide Excellence in Teaching '03**

Two awards given from >2,000 professors at USC. Highest teaching award.

**Phi Kappa Phi Faculty Recognition Award ('16)**

4 given at USC Academic Honors Convocation for significant scholarly work

**IEEE Photonics Society Distinguished Lecturer Award (99', 00')**

4 annual awards to present a distinguished lecture to local chapters worldwide.

**IEEE Photonics Society Distinguished Service Award '03**

1 annual award that recognizes exceptional individual contribution of service.

**HP Labs Research Innovation Award '08, '09,'10 (see also *Grants*)**

**Northrop USC Outstanding Junior Eng. Faculty Research Award '94**

Given to the **highest ranked** Asst. Prof. in the USC School of Engineering.

**Phi Kappa Phi Academic Honor Society, Faculty Inductee '04**

**Northrop/USC Best Electrical Eng. Research Impact Faculty Award '05**

**TRW USC School of Engineering Best Teacher Award '99**

Teaching award given to the highest ranked teacher in the School of Eng.

**NSF Alan T. Waterman Award Finalist ('95, '96, and '97)**

**Outstanding Teaching Award, Elec. Eng. Dept., USC Eng. School ('95, '97)**

**The Okawa Foundation Research Award '00**

**Senior Member – IEEE ('94)**

Taiwan Government Travel Grant (2008)

*“Academician of Academia Sinica or International Renowned Scholar”*

**Edwin Howard Armstrong Foundation Memorial Award**

Given to the **highest ranked** Columbia Univ. Elec. Eng. Masters Student

IEEE LEOS Figure Contest Winner (L. Zhang, et al.) (2008)

**Fellow - Semiconductor Research Corporation - Doctoral Research**

Marquis Who's Who in America; ... in the World; ... in Science & Eng.

NATO/NSF Summer Fellowship (1985) - Italy

**HONORS: (CONTINUED)**

Columbia University Departmental Fellowship (9/83-5/86)

Dr. Samuel Belkin Scholar Award: Yeshiva University

Head Delegate to the Harvard Model United Nations from Yeshiva University

Magna Cum Laude: Yeshiva University

Student Council Member & Junior Class Vice-President: Yeshiva University

Valedictorian (high school); Editor-in-Chief, Yearbook (high school)

**JOURNAL EDITOR:**

**Editor-in-Chief, OSA Optics Letters ('08-'13)**

*#1 ranked Optics publication for 2007 in terms of ISI Impact Factor*

**Editor-in-Chief, IEEE/OSA Journal of Lightwave Technology ('01-'06)**

**Editor-in-Chief, IEEE J. of Selected Topics in Quantum Electronics ('99-'01)**

**Associate Editor, IEEE/OSA J. of Optical Communications & Networking ('09-'11)**

**Associate Editor, IEEE Journal of Selected Areas in Communications,**  
Series on Optical Communications and Networks (2002-2009)

**Associate Editor, IEEE/OSA Journal Lightwave Technology (1995-2000)**

**Guest Co-Editor, Light: Science & Applications,**  
Special Issue, Twisted Light with Orbital Angular Momentum ('17)

**Guest Editor, IEEE/OSA Journal of Lightwave Technology,** Special Issue,  
A Third of a Century of Lightwave Technology Jan. 1983-Apr. 2016 ('16)

**Guest Editor, IEEE Journal of Selected Topics in Quantum Electronics,**  
Special Issue, Optical Waveguides: Technologies and Applications ('16)

**Guest Editor, Nanophotonics (a de Gruyter journal),**  
Special Issue, Advances in Optical Fiber Technology ('14)

**Guest Editor, IEEE Journal of Selected Topics in Quantum Electronics,**  
Special Issue, Optical Modulators - Technologies and Applications ('13)

**Guest Editor, IEEE Journal of Selected Areas in Communications,**  
Special Issue, Next-Generation Broadband Optical Access Network Techn. ('10)

**Guest Editor, IEEE/OSA Journal of Lightwave Technology,**  
Special Issue on the 25<sup>th</sup> Anniversary of JLT (May '08)

**Guest Editor, Applied Physics-A (a Springer Verlag journal),**  
Special Issue on Photonic Interconnects (Dec. 2008)

**Guest Editor, OSA Journal of Optical Networking,**  
Special Issue on Optical Code-Division-Multiple-Access (2007)

**Guest Editor, IEEE Journal of Selected Topics in Quantum Electronics,** Special Millennium Issue (Dec. 2000)

**Guest Editor, IEEE Journal of Quantum Electronics**  
Focus Issue on Ultra-High-Bandwidth Optical Transmission Systems (Nov. 1998)

**Guest Editor, IEEE/OSA Journal of Lightwave Technology & IEEE Journal of Selected Areas in Communications,** Joint Special Issue,  
Multiple-Wavelength Technologies and Networks (June '96)

**Journal Reviewer:** Applied Optics, Applied Physics Lett., IEEE Proceedings, IEEE/OSA Journal of Lightwave Technology, IEEE Photonics Technology Lett., IEEE Trans. on Computers, Electronics Lett., Nature Photonics, Optics Comm., Optics Express, Optics Lett., Science.

**Book Reviewer:** Academic Press; Cambridge U. Press; IEEE Journal Quant. Electronics; Kluwer Press

**Memberships:** American Assoc. for the Advancement of Science (AAAS); American Physical Soc.; IEEE Photonics Society; IET; Optical Society (OSA); Phi Kappa Phi; SPIE

## PROFESSIONAL ACTIVITIES:

### **The Optical Society (OSA) (Membership ~20,000)**

**Past-President (2017)**

**President (2016)**

**President-Elect (2015)**

**Elected Vice President (2014)**

**Chair**, Steering Committee,  
National Photonics Initiative (NPI) ('15-'17)

**Chair**, Committee,  
IEEE Eric Sumner Technical Field Award ('16-'18)

**Vice Chair**, Section 7 Search Committee,  
U.S. National Academy of Engineering ('17-'18)

Member, Independent Technical Advisory Board,  
DoD Applied Research for the Advancement of S&T Priorities (ARAP) Defense  
Optical Channel Program (DOC-P) ('17-'19)

Member, Technical Program Committee, Subcommittee Photonics in Switching  
System and Related Technologies, Photonics in Switching ('16)

**General Co-Chair**,  
IEEE/OSA/SPIE Asia Communications & Photonics Conference, Wuhan ('16)

**Co-Organizer**, Workshop on Twisting Light with Orbital Angular Momentum  
(OAM): Advances and Opportunities,  
IEEE/OSA/SPIE Asia Communications & Photonics Conf (ACP), Wuhan ('16)

National Spectrum Consortium (NSC) Representative, Subject Matter Expert,  
Communications Assessment Working Group ('16)

Member, Technical Program Committee,  
SPIE Photonics West, Conference on Advances in Photonics of Quantum  
Computing, Memory, and Communication ('16-'18)

Member, Conference Program Committee,  
SPIE Photonics West, High-Contrast Metastructures IV Conference ('15-'18)

Member, International Advisory Board,  
School of Engineering Sciences (SES) of Huazhong University of Science and  
Technology (HUST), Wuhan, China ('14-'17)

Member, Technical Program Committee,  
European Conference on Optical Communications (ECOC) ('13, '14, '15)

Member, Organizing Committee,

**PROFESSIONAL ACTIVITIES: (CONTINUED)**

Conference FIAT LUX on the International Year of Light (IYL), Rome ('15)

Member, Technical Program Committee, Systems Subcommittee,  
Photonics in Switching ('13, '14)

Member, **U.S. Army Science Board** ('14-'18)

Faculty Advisor, IEEE Student Branch at USC ('15-'18)

Faculty Advisor, OSA Student Chapter at USC ('14-'18)

Member, **Foundation Board of Directors**, OSA ('14)

Member, **Advisory Board**, National Science Review ('14)

**Consultant Member**, U.S. Army Science Board ('13-'14)

**Co-Organizer**, Section on Optics and Photonics: An International Perspective,  
American Association for the Advancement of Science (AAAS) Annual  
meeting, Chicago ('14)

**Chair-Elect and Member**, Steering Committee  
National Photonics Initiative (NPI) ('13-'14)

**Chair**, Unclassified Technical Program,  
IEEE MILCOM (San Diego, CA) (2013)

**Co-Chair**, U.S. National Academies Committee for NRC Study,  
“*Optics and Photonics: Essential Technologies for Our Nation*” (2011-2012)

**Chair**, Steering Committee,  
APS/IEEE/OSA Conf. on Lasers & Electro-Optics (CLEO) ('08-'10&'10-'12)

Member, **Defense Science Research Council**,  
Council submits reports to DARPA Director and Office Directors ('09-'14)

**Elected Member-at-Large**, Section on Engineering,  
American Association for the Advancement of Science (AAAS) ('12-'16)

Member, 2015 IEEE Eric E. Sumner Award Committee ('15-'16)

Member, Steering Committee,  
Optoelectronics Communications Conference (OECC)('14)

Member, Technical Program Committee,  
22nd Wireless and Optical Communication Conference ('13)

**PROFESSIONAL ACTIVITIES: (CONTINUED)**

Member, Technical Program Committee, Systems Subcommittee,  
Photonics in Switching ('13, '14)

Member, External Advisory Committee,  
Department of Electrical & Computer Eng., Johns Hopkins Univ. ('09-'12)

Member, International Advisory Committee,  
International Conference on Fiber Optics and Photonics, Madras ('12)

Member, Technical Program Committee,  
European Conference on Optical Communications (ECOC) ('12)

Member, Technical Program Committee, Globecom GC12,  
Optical Networks & Systems Symposium (ONS) (2012)

Member, Technical Program Committee, Systems Subcommittee,  
Photonics in Switching 2012

National Academy of Engineering Representative,  
US Advisory Committee, International Commission on Optics ('10-'12,'13-'15)

Co-Chair, Technical Program Committee, SPIE Photonics West,  
Conference on High Contrast Metastructures (OE131), San Francisco ('12)

**General Co-Chair**, OSA Topical Meeting on  
Signal Processing in Photonic Communications (SPPCOM), Toronto (2011)

**IEEE Photonics Society (Membership~7,000)**  
*(Formerly the IEEE Lasers & Electro-Optics Society (LEOS))*

**President (2006-2007)**

**Past-President (2008-2009)**

**President-Elect (2004-2005)**

Member, Strategic Planning Committee,  
IEEE Technical Activities Board (2011-2013)

Member, Board of Editors, OSA ('08-'13)

**Chair**, Awards Committees, IEEE Photonic Society (2010)

Member, Technical Program Committee, IEEE Photonics Society,  
Summer Topical Meeting on Terabit Optical Ethernet, Montreal (2011)

Member, International Advisory Committee,  
IQEC / CLEO Pacific Rim Conference, Sydney (2011)



**PROFESSIONAL ACTIVITIES: (CONTINUED)**

Member, Technical Program Committee,  
7th Workshop on Fibre Optics & Passive Components, July, Montreal (2011)

Member, International Advisory Committee,  
1<sup>st</sup> International Postgraduate Student Conference (PGSC), Singapore (2011)

Member, Conference Program Committee, SPIE Photonics West,  
Free-Space Laser Communication Technologies XXIII (2011)

**Program Co-Chair**, OSA Topical Meeting on  
Signal Processing in Photonic Communications (SPPCOM), Germany (2010)

**Symposium Co-Chair**, European Conf. on Optical Communications (Italy) ('10)  
C. Kao's Nobel Prize & Early Development of Optical Fibres and Optical Comm.

Member, Technical Program Committee,  
European Conference on Optical Communications (ECOC) ('00, '11, '12)

**Chair** ('08) and Member ('10), Int'l Advisory Committee,  
IEEE Photonics Global Singapore

**General Co-Chair**, IEEE Photonics in Switching Conference, Pisa, Italy (2009)

Member, Board of Visitors,  
Army Research Office (ARO) Electronics Division ('10)

Member, Technical Program Committee,  
OSA Topical Meeting on Photonics in Switching, Monterey, CA ('10)

Member, Technical Program Committee,  
Optical Networks & Systems Symposium, IEEE Globecom, Miami ('10)

Member, International Advisory Committee (IAC),  
BGPP'10 (Bragg Gratings, Photosensitivity, & Poling), Germany ('10)

Member, International Advisory Committee,  
3<sup>rd</sup> Int'l Photonics & OptoElectronics Meetings (POEM), Wuhan ('10)

**Co-Chair**, Technical Subcommittee,  
Optical Transmission Systems, Switching and Subsystems,  
IEEE/OSA/SPIE Asia Communications & Photonics Conf (ACP), Shanghai ('09)

Member, Conference Committee, IEEE/LEOS Summer Topical Meeting,  
The Future Global Network, CA (2009)

**PROFESSIONAL ACTIVITIES: (CONTINUED)**

Member, Conference Committee, IEEE/LEOS Summer Topical Meeting,  
Optical Code Division Multiple Access (OCDMA), CA (2009)

Member, Publication Advisory Board,  
OSA's Advances in Optics & Photonics (AOP) ('08-'09)

Member, Editorial Advisory Board, Lightwave Magazine, Pennwell Publishers

Member, Int'l Advisory Committee,  
8th Int'l Conf. on Optical Communications & Networks (ICOON), Beijing ('09)

Member, IEEE Photonics Soc. Distinguished Service Award Committee ('08,'09)

Member, Technical Program Committee, Globecom,  
Optical Networks & Systems Symposium (ONSS), Hawaii (2009)

Member, Conference Program Committee, SPIE Photonics West,  
Advanced Optical Concepts in Quantum Computing, Memory, & Comm. (2009)

Member, Conference Program Committee, SPIE Photonics West,  
Free-Space Laser Communications, CA (2009)

Member, Tech. Prog. Comm., Symp. on Optical Fiber Devices & Applications,  
Int'l Conf. on Materials for Advanced Technologies (ICMAT), Singapore (2009)

Member, OSA Review Committee of the J. of the Optical Society of Korea ('09)

**Program Co-Chair**, OSA Topical Meeting on  
Coherent Optical Technologies and Applications (COTA) (2008)

Member, Technical Program Committee,  
CS/IEICE Int'l Conference on Photonics in Switching, Sapporo, Japan (2008)

Member, Tech. Prog. Comm., ONS (Optical Networks & Systems Symposium),  
IEEE Int'l Conference on Communications (ICC) (2008, 2009)

Member, Optical Network & Broadband Access Subcommittee,  
Opto-Electronics and Communications Conference, Sydney (2008)

**Chair**, Ethics and Conflict Resolution Committee,  
IEEE Technical Activities Board (TAB) (2007)

Member, Strategic Planning Committee,  
IEEE Technical Activities Board (2008-2010)

Member, New Initiatives Committee, IEEE-Wide Committee (2008)

**PROFESSIONAL ACTIVITIES: (CONTINUED)**

**General Co-Chair**, OSA Topical Meeting on Slow & Fast Light (2007)

Member, Ethics and Member Conduct Committee Hearing Panel,  
IEEE Institute-Wide (2006-2008)

Member, Frederic Ives Medal/Jarus Quinn Endowment Award Committee,  
highest award of the Optical Society of America (OSA) ('06,'07)

Member, International Program Committee (IPC),  
International Association of Science & Technology for Development (IASTED)  
Int'l Conf. on Wireless and Optical Communications (WOC), Quebec 2008  
Int'l Conf. on Communication, Internet & Info. Tech. (CIIT), Banff (2007)  
Int'l Conf. on Power and Energy Systems, Thailand (2007)  
Int'l Conf. on Wireless and Optical Communications, Montreal (2007)

**Co-Organizer**, Workshop on Slow Light,  
Conference on Optical Fiber Communications 2007

**Chair**, Steering Committee, AOE Expo and Conference, Shanghai (2007)

**Program Co-Chair**, OSA Topical Meeting on Slow & Fast Light (2006)

**Chair**, Communications Subcommittee, OSA Topical Meeting  
Coherent Optical Technologies and Applications (COTA) (2006)

**Co-Chair, Science and Engineering Council (2001-2003),  
Optical Society of America (OSA) (Total Membership~15,000)**

**Workshop Co-Chair**, The Future of Optical Telecommunications,  
European Conf. on Optical Communications (Cannes) ('06)

**Chair**, External Int'l Review Panel, Research Program in Network Technol.,  
National ICT Australia (NICTA), University of Melbourne ('06-'07)

Member, Technical Program Committee, IEEE LEOS Summer Topical Meetings  
Quantum Communications in Telecom Networks (2006)

Member, Board of Directors, NSERC Canada Research Center,  
Agile All-Photonics Networks (AAPN) ('05-'10)

**Chair**, Membership Committee,  
IEEE Lasers & Electro-Optics Society (LEOS) ('04-'06)

Member, Technical Program Committee, Photonics in Switching,  
OSA Topical Meeting, Greece (2006)

**PROFESSIONAL ACTIVITIES: (CONTINUED)**

Member, International Program Committee, IASTED,  
Int'l Conf. on Comm., Internet and Information Tech., St. Thomas, USVI ('06)

**Chair**, Distinguished Service Award Committee,  
IEEE Lasers & Electro-Optics Society (LEOS) ('04,'05,'06)

**Chair**, Planning Committee, Science & Engineering Council,  
Optical Society of America (OSA) ('04)

Member, Technical Program Committee, Optical Signal Processing,  
IEEE LEOS Summer Topical Meetings (2005)

Member, Technical Program Committee,  
Photonic Technologies for Communications, IEEE Globecom, St. Louis (2005)

Member, Technical Prog. Committee, Optical Systems & Networks Symposium  
IEEE International Communications Conference (ICC) 2006, Turkey

Member, International Steering Committee, Asia-Pacific Optical and Wireless  
Communications Conference (APOC), Beijing, Shanghai, Korea ('04,'05,'06)

Member, International Advisory Committee,  
Symp. on Technology Fusion of Optoelectronics and Communications (STFOC),  
International Conference on Photonics ('05)

**Steering Committee**, Conf. on Optical Fiber Communications (**OFC**) (99-04)  
Budget Subcommittee ('02-'03)  
Long-Range Planning Committee ('03-'04)

**Vice-President, Technical Affairs (1996-1999),  
IEEE Lasers & Electro-Optics Society (LEOS) (Membership~7,500)**

Responsible for all Technical Affairs, including Technical  
Council, Standards Committees, & Gov't Liaison Committees

**Conference on Lasers and Electro-Optics (CLEO)**  
(>1000 invited & contributed papers, >6000 attendees)

**General Co-Chair (2003)**

**Program Co-Chair (2001)**

Member, Long Range Planning Subcomm., Steering Committee ('03)  
Co-Chair, Lasers and Electro-Optics Applications Program (2002)

**Committee Chair**, Lightwave Communications (2000)

Member, Program Committee ('97, '98, '99)

Member, **Board of Directors, OSA (2001-2003)**

**PROFESSIONAL ACTIVITIES: (CONTINUED)**

**Workshop Co-Chair**, Ultra-High Capacity Optical Communications and Networking: Challenges in Broadband Optical Access, Materials Processing, and Manufacturing, **National Science Foundation (2002)**

**Chair**, Distinguished Traveling Lecturer Awards Committee, IEEE LEOS ('02)

Member, Curriculum Committee, NSF-Funded Advanced Technology Education (ATE) Planning Grant for the California Optical and Photonics Technology Education Center (Cal-OPTEC) at San Jose City College ('03-'04)

Member, Technical Program Committee, Optical Interconnects, **IEEE LEOS Summer Topical Meeting '04**

Member, Technical Program Committee, IASTED, Int'l Conf. on Optical Communication Systems & Networks, Banff, Canada (04)

Member, **Technical Program Committee**, Photonics In Switching, Paris ('03)

Member, International Advisory Committee, Asia-Pacific Optical and Wireless Communications Conference (APOC), Wuhan, China ('03)

Member, **Advisory Board**, Photonics Technology Access Program (PTAP), Optoelectronics Industry Development Association

Member, **Public Policy Committee**, OSA ('03)

Member, **Publications Council**, Liason to Science & Eng. Council, OSA ('03)

Member, **Board of Editors**, OSA ('01-'6)

Member, **Finance Committee**, OSA ('02-'04)

Member, **Nominating Committee for President and Directors**, OSA ('00)

**Elected Member of the Board of Governors, IEEE LEOS ('98-'01)**

Member, Technical Program Committee, IASTED, Int'l Conf. on Comm., Internet & Information Technology, Scottsdale, AZ ('03)

Member, **Technical Program Committees**, IEEE LEOS Summer Topical Meetings '02:

- (1) Fast Optical Signal Processing in Optical Transmission Committee
- (2) Dynamic Enablers of Next-Gen Optical Comm. Systems Committee

**Steering Committee Member**,

**PROFESSIONAL ACTIVITIES: (CONTINUED)**

IEEE Workshop on Fiber & Optical Passive Components, Sept., Italy (02,04,05)

Member, Technical Program Committee, IASTED,  
Wireless & Optical Comm. Conference, Banff, Canada (2002)

**IEEE Lasers and Electro-Optics Society (LEOS) Annual Meeting**  
(570 invited & contributed papers, ~ 800 attendees)

**General Chair (1999)**  
**Program Chair (1997)**

**Program Co-Chair, OSA Annual Meeting 2001**

OSA Topical Meeting on Optical Amplifiers and Their Applications

**General Co-Chair (1999)**  
**Technical Co-Chair (1998)**  
**Chair, Systems Applications (1997)**  
**Program Committee Member (1996)**

**Chair, Photonics Division, Technical Council,  
Optical Society of America ('98-'00)**

**Workshop Co-Chair, The Future Revolution in Optical Communications &  
Networks, National Science Foundation (2000)**

Member, Technical Program Committee, IEEE Microwave Photonics Conf. ('01)

Member, Optoelectronics Task Force, Semiconductor Research Corp. ('01)

Member, Technical Program Committee, CLEO Pacific Rim ('01)

Member, Technical Program Committee,  
Optoelectronics Communications Conference (OECC), Sydney ('01)

Member, Technical Program Committee, Optical Networking Subcommittee,  
Asia-Pacific Optical and Wireless Communications Conference (APOC)  
(1) Beijing ('01)  
(2) Shanghai ('02)

Member, Technical Program Committee, SPIE, Photonics West,  
WDM and Photonic Switching Devices for Network Applications, San Jose ('01)

Member, Technical Program Committee,  
International Conference on Fiber Optics and Photonics, Calcutta ('01)

**Chair, Standing Tech. Committee,**

**PROFESSIONAL ACTIVITIES: (CONTINUED)**

Optical Networks, **IEEE LEOS (1996-1999)**

**Co-Chair, IEEE LEOS Summer Topical Meeting '98,**  
Broadband Optical Networks: An Emerging Reality

Member, **Scientific Advisory Board**, U.S./Japan Joint Optoelectronics  
Project, **Optoelectronics Industrial Development Association**

**Workshop Co-Organizer, Conference on Optical Fiber Communications**

(1) Passive Optical Devices ('98)

(2) Systems Software Modeling ('98,'99,'00,'01)

**Member**, US Advisory Committee,  
**International Commission on Optics ('97-'02)**

**Member**, IEEE Tech. Activities Board Subcommittee on  
New Technology Directions '96, '97

**Conference Program Committee, SPIE**, Optical Comm., Taiwan ('98)

**General Co-Chair, IEEE LEOS Summer Topical Meeting '97,**  
**Technologies for the Global Information Infrastructure**

**Invited Workshop Participant**, Frontiers in Engineering,  
**National Academy of Engineering** (nominations of engineers <40 years old)

**Chair**, Optical Communications Technical Committee, **IEEE LEOS ('94-'96)**

**Vice-Chair**, Optical Communications Group, Technical Council,  
Optical Society of America (OSA) (1993-1997)

**Conference General Co-Chair, IEEE LEOS Summer Topical**  
**Meeting '95, Technologies for the Global Information Infrastructure**

**Program Committee, System Technologies,**  
**Conference on Optical Fiber Communications (OFC) '96, '97, '98**

**Program Committee**, IEEE LEOS Summer Topical Meeting '96,  
Broadband Optical Networks and Their Enabling Technologies

**Chair, Optical Communications Committee,**  
LEOS Annual Meeting '94,'95,'96

**Standing Technical Committee,**  
**IEEE LEOS, Optical Networks (1993-1996)**

**PROFESSIONAL ACTIVITIES: (CONTINUED)**

**Program Chair**, Telecommunications Engineering, Society of Photo-Instrumentation Engineers (**SPIE**), Photonics West '95

**Chair**, Conf. on Emerging Technologies for All-Optical Networks, SPIE '95, '96

**Chair**, Information & Comm., NSF Forum on Optical Science & Eng. ('95)

**Chair**, Symposium, System Modeling, Conf. on Integrated Photonics Res. '96

**Technical Program Committee**, Committee on Numerical Modeling, IPR '96

**Awards Committee Member**,  
**IEEE LEOS Fellows Selection Committee '00**

**Awards Committee Member**,  
IEEE LEOS Distinguished Traveling Lecturer Award '01, '03, '04

**Awards Committee Member**,  
IEEE LEOS Wm. Streifer Scientific Achievement '96, '03, '04, '05

**Awards Committee Member**, IEEE LEOS Quantum Electronics Award '97

**Technical Committee**, IEEE Interconnects Workshop (1996)

**Chair**, Panel on Optical Information and Communications, Workshop on Optical Science and Engineering, National Science Foundation (1994)

**Technical Program Committee, Symposium Organizer,**  
**Optical Society of America Annual Meeting:**

'98 (WDM Systems)  
'96 (Optical Networks)  
'95 (Wavelength Conversion Techn.)  
'92 (EDFA Appl.: Distribution)

**Conf. Program Committee, SPIE**,  
Components for WDM ('95,'99,'00,'01,'02)

**Program Committee**, IEEE/ACM/SPIE Workshop on Optical Networks, 2000

**Standing Technical Committee, IEEE LEOS, Optical Comm.** ('92-'94)

**Program Committee**, IEEE LEOS Ann. Meeting '92,'93; Lightwave Comm.

**Review Panel Member**, NSF, Optical Communications  
( '92,'93,'94,'95,'97,'98,'03)



**TEACHING:**

**STUDENT EVALUATIONS**

**I. Univ. of Southern California (5.0 is highest possible score)**

***Undergraduate Course: Introduction to Communications (EE 467)***

1. Spring '17: **4.91/5.0**, 15 students, 11 had evaluated
2. Spring '16: **4.96/5.0**, 27 students, 27 had evaluated
3. Spring '15: **4.96/5.0**, 27 students, 24 had evaluated
4. Spring '14: **4.84/5.0**, 25 students, 19 had evaluated
5. Spring '13: **5.0/5.0**, 21 students, all had evaluated
6. Spring '12: **4.94/5.0**, 20 students, 18 had evaluated
7. Spring '11: **5.0/5.0**, 22 students, 18 had evaluated
8. Spring '10: **5.0/5.0**, 19 students, 16 had evaluated
9. Spring '09: **5.0/5.0**, 10 students, all had evaluated
10. Fall '07: **5.0/5.0**, 11 students, all had evaluated
11. Fall '06: **5.0/5.0**, 10 students, 9 had evaluated
12. Fall '04: **5.0/5.0**, 11 students, all had evaluated
13. Fall '03: **5.0/5.0**, 7 students, all had evaluated
14. Fall '02: **5.0/5.0**, 11 students, all had evaluated
15. Fall '01: **5.0/5.0**, 21 students, all had evaluated
16. Fall '00: **5.0/5.0**, 20 students, all had evaluated
17. Fall '99: **5.0/5.0**, 22 students, 21 had evaluated
18. Fall '98: **5.0/5.0**, 18 students, all had evaluated
19. Fall '97: **5.0/5.0**, 22 students, all had evaluated
20. Fall '96: **4.92/5.0**, 14 students, all had evaluated
21. Fall '95: **5.0/5.0**, 8 students, all had evaluated
22. Fall '94: **5.0/5.0**, 9 students, all had evaluated
23. Fall '93: **5.0/5.0**, 8 students, all had evaluated
24. Fall '92: **5.0/5.0**, 13 students, all had evaluated

***Graduate Course: Optical Fiber Communications Systems (EE 558)***

1. Fall '16: **4.94/5.0**, 22 students, 17 had evaluated
2. Fall '15: **5.0/5.0**, 24 students, 19 had evaluated
3. Fall '14: **4.95/5.0**, 29 students, 22 had evaluated
4. Fall '13: **5.0/5.0**, 26 students, 24 had evaluated
5. Fall '11: **4.88/5.0**, 29 students, 24 had evaluated
6. Fall '10: **4.96/5.0**, 35 students, 28 had evaluated
7. Fall '09: **4.97/5.0**, 31 students, 30 had evaluated
8. Fall '08: **4.94/5.0**, 33 students, all had evaluated
9. Spring '08: **4.88/5.0**, 28 students, 25 had evaluated
10. Spring '07: **4.92/5.0**, 29 students, 24 had evaluated
11. Spring '06: **5.0/5.0**, 20 students, 17 had evaluated

12. Spring '05: **4.97/5.0**, 31 students, 29 had evaluated
13. Spring '04: **4.91/5.0**, 24 students, 23 had evaluated
14. Spring '03: **4.88/5.0**, 26 students, 25 had evaluated
15. Spring '02: **4.73/5.0**, 30 students, all had evaluated
16. Spring '01: **5.0/5.0**, 25 students, 24 had evaluated
17. Spring '00: **4.95/5.0**, 22 students, all had evaluated
18. Spring '99: **5.0/5.0**, 17 students, all had evaluated
19. Spring '97: **4.79/5.0**, 23 students, all had evaluated
20. Spring '96: **4.93/5.0**, 29 students, all had evaluated
21. Spring '95: **4.97/5.0**, 31 students, all had evaluated
22. Spring '94: **4.93/5.0**, 28 students, 27 had evaluated
23. Spring '93: **4.93/5.0**, 40 students, all had evaluated
24. Spring '92: **4.72/5.0**, 19 students, all had evaluated

**II. Columbia Univ. (while a graduate student)** (10.0 is highest possible score)

*Undergraduate Course: Fundamentals of Circuits and Systems*

1. Fall '87: **8.3/10.0**, 110 students, 93 had evaluated

**Ph.D. THESES ADVISED AND GRANTED:**

1. Syang-Myau Hwang, 10/95, "System Performance and Channel Equalization of Optically-Amplified WDM Long-Distance Links and Ring Networks"
2. Andrew David Norte, 1/96, "Experimental Demonstrations of Wavelength Routing Functions for an All-Optical Wavelength-Division-Multiplexed Fiber Optic Communication Network Switching Node"
3. William Shieh, 3/96, "Experimental and Theoretical Study of All-Optical Wavelength Shifting Techniques by using Semiconductor Optical Amplifiers"
4. Eugene Park, 3/96, "Applications of All-Optical Wavelength Shifting using Semiconductor Optical Amplifiers for Switching and Routing Functions in a Dynamically Reconfigurable Wavelength-Division-Multiplexed Fiber-Optical Communication Network"
5. James E. Leight, 8/96, "System and Network Implementations of 2-D Multiple-Plane Wavelength-Division-Multiplexed Optical Interconnects"
6. J.-C. Wu, 8/96, "Protocols and Design Tradeoffs for Packet-Switched WDM Networks with Large Tuning Latencies"
7. M. Imran Hayee, 12/98, "Modeling of Dispersion and Nonlinearities in High-Performance Transmission"
8. Jin-Xing Cai, 6/99, "Experimental Demonstrations of Techniques to Improve System Performance in Non-Static Optical Wavelength Division Multiplexing Systems and Networks"
9. Kai-Ming Feng, 6/99, "System Performance Improvement in Optical Wavelength Division Multiplexing Systems and Networks using Optical Gratings"
10. Jong-Jin Yoo, 12/99, "System Performance and Network Structure of Two-Dimensional Multiple-Plane WDM Optical Interconnects"
11. Steve A. Havstad, 9/00, "Generation, Filtering, and Applications of Subcarriers in Optical Communication Systems"
12. Sanggeon Lee, 9/00, "Characterization and Compensation of Polarization Mode Dispersion and Chromatic Dispersion Slope Mismatch for High Bit-Rate Data Transmission"
13. Reza Khosravani, 10/00, "Reduction of Signal Degrading Effects in Wavelength Division Multiplexed Systems and Networks"
14. Mustafa C. Cardakli, 1/01, "Optical Techniques to Implement Networking Functions in Dynamically Reconfigurable Wavelength-Division-Multiplexed Fiber-Optic Communication Networks"
15. Olaf H. Adamczyk, 2/01, "Experimental Demonstration of Techniques to Improve System Performance in Fiber-Optic Communication Systems using Subcarrier-Multiplexed and Digital Baseband Signals"
16. Zhongqi Pan, 11/02, "Overcoming Fiber Dispersive Effects in High-Speed Reconfigurable Multi-Wavelength Optical Systems and Networks"

**Ph.D. THESES ADVISED AND GRANTED: (CONTINUED)**

17. Asaf B. Sahin, 4/03, "Experimental Demonstration of Techniques to Improve System Performance in Non-Static Microwave Frequency Analog and Digital Signal Transmission over Fiber-Optic Communication Systems"
18. Deniz Gurkan, 5/03, "Experimental Demonstrations of Optical Networking Functions for Wavelength-Division-Multiplexed (WDM) Optical Networks"
19. Yong-Won Song, 10/03, "Mitigation of Signal Degradations in Reconfigurable Wavelength-Division-Multiplexed Fiber-Optic Communication Systems"
20. S.M. Reza Motaghian Nezam, 4/04, "Chromatic and Polarization Mode Dispersion Monitoring for Equalization in Fiber-Optic Communication Systems"
21. Paniz Ebrahimi, 5/04, "Design and Implementation of Novel Optical Subsystems for Enhancing Spectral Efficiency, Security, and Performance of High-Speed Wavelength Division Multiplexed and Optical Code-Division-Multiple-Access Systems"
22. Lian-Shan Yan, 11/04, "Investigation of Degrading Effects and Performance Optimization in Long-Haul WDM Transmission Systems and Reconfigurable Networks "
23. John E. McGeehan, 5/05, "Experimental Demonstration of Optical Router and Signal Processing Functions in Dynamically Reconfigurable Wavelength-Division-Multiplexed Fiber Optic Networks"
24. Changyuan Yu, 8/05, "Dispersive and Nonlinear Effects in High-Speed Reconfigurable WDM Optical Fiber Communication Systems"
25. Yan Wang, 12/05, "Monitoring and Utilization of Dispersive and Nonlinear Effects in High-Speed Reconfigurable WDM Optical Fiber Networks"
26. Ting Luo, 2/06, "Management of Dispersion, Nonlinearity and Polarization-Dependent Effects in High-Speed Reconfigurable WDM Fiber Optic Communication Systems"
27. Saurabh Kumar, 11/06, "Optical Signal Processing For High-Speed, Reconfigurable Fiber Optic Networks"
28. Poorya Saghari, 11/06, "Techniques for Increasing the Number of Users in Dynamically Reconfigurable Optical Code Division Multiple Access Systems and Networks"
29. Louis C. Christen, 9/08, "Detection and Optical Signal Processing using Phase Based Optical Modulation Formats"
30. Bo Zhang, 12/08, "Nonlinear Optical Signal Processing For High-Speed, Spectrally Efficient Fiber Optic Systems and Networks"
31. Lin Zhang, 11/10, "Silicon Integrated Devices for Optical System Applications"
32. Scott R. Nuccio, 12/10, "Applications of All Optical Signal Processing for Advanced Optical Modulation Formats"
33. Irfan Fazal, 7/11, "Optical Signal Processing for Enabling High-Speed, Highly Spectrally Efficient and High Capacity Optical Systems"

**Ph.D. THESES ADVISED AND GRANTED: (CONTINUED)**

34. Jeng-Yuan Yang, 9/11, "Optical Performance Monitoring and Signal Processing to Enable Robust and Reconfigurable Optical Networks"
35. Xiaoxia Wu, 10/11, "High-Speed Optical Signal Processing and Performance Monitoring Towards Tbit/s Optical Networks"
36. Omer Yilmaz, 12/11, "Advanced Nonlinear Optical Signal Processing Techniques For High Speed, Reconfigurable Optical Fiber Networks"
37. Yang Yue, 10/12, "Integrated Silicon Waveguides and Specialty Optical Fibers for Optical Communications System Applications"
38. Salman Khaleghi, 6/13, "High-Speed and Reconfigurable All-Optical Signal Processing for Phase and Amplitude Modulated Signals"
39. Reza Chitgarha, 6/14, "Reconfigurable High-Speed Optical Signal Processing and High-Capacity Optical Transmitter"
40. Hao Huang, 11/14, "Multiplexing Techniques and Reconfigurable Networking Functions for Optical Communications using OAM Beams"
41. Asher Voskoboinik, 12/14, "Sweep-Free Brillouin Optical Time-Domain Analyzer"
42. Nisar Ahmed, 1/16, "Orbital Angular Momentum based Spatially Multiplexed Optical and Millimeter-wave Communications"
43. Yan Yan, 4/16, "High Capacity Optical and RF/mm-wave Communications Utilizing Orbital Angular Momentum Multiplexing"
44. Yongxiong Ren, 11/16, "Orbital Angular Momentum-Based Space Division Multiplexing for High-Capacity Optical and Millimeter-Wave Communications"
45. Morteza Ziyadi, 01/17, "Reconfigurable High-Speed Optical Signal Processing Using Optical Frequency Comb for High-Capacity, Spectrally Efficient Fiber Optic Systems and Networks"

**GRANTS:**

**National Science Foundation (NSF) Young Investigator Award (9/92-8/94), PI,**  
"Optical Fiber Communication Systems"

**Advanced Research Projects Agency (ARPA) (8/93-7/96), Co-PI,** "Two-Dimensional WDM Interconnects for Highly Parallel and Dense High-Speed Optical Processing", with C.J. Chang-Hasnain (Stanford Univ.)

**Charles Lee Powell Foundation USC New Investigator Award (1/92-6/94), PI,**  
"WDM Amplified Optical Networks"

**ILX Lightwave Corp. (10/92), University Donations Program Award, PI,**  
"WDM Systems Research using Wavelength-Tunable Lasers"

**National Science Foundation (NSF) (9/93-8/96), Co-PI,** "Wavelength Converting and Wavelength Routing for High-Efficiency Almost-All-Optical Networks," with V.O.K. Li and P.D. Dapkus (USC)

**(Proposal ranked #1 out of 70 letters-of-intent and 33 final proposals)**

**David and Lucile Packard Foundation (10/93-9/99), PI,** "Fellowship in Science and Engineering: WDM Optical Communications"

**Advanced Research Projects Agency (ARPA) (8/94-7/96), Co-PI,** "Optically-Amplified Scalable WDM Networks using Acousto-Optic Filters for Amplifier Gain Equalization and Signal Routing," with D.A. Smith (Case Western Reserve) and Kathryn D. Li (New Focus)

**National Science Foundation, Presidential Faculty Fellows Award (9/94-8/97), PI,**  
"High-Capacity WDM Optical Communication Systems"

**ILX Lightwave Corp. (4/95), University Donations Award, PI,** "WDM Systems using Multi- $\lambda$  VCSELs"

**Ballistic Missile Defense Org., Focused Research Initiative (5/95-5/98),**  
"Multiscale Photonic Data Fusion Networks and Their Interfaces," **Senior Investigator** (PI - A.A. Sawchuk)

**Optoelectronics Industry Development Assoc. / Joint Optoelectronics Project (OIDA/JOP) (2/96), PI,**  
"Ultra-High-Capacity WDM Switching Systems"

**Defense Univ. Research Instrumentation Program (DURIP / ARPA) (5/96), Co-PI,** "Transparent High-Speed Optically-Amplified Multiple-Wavelengths Networks using AOTFs for Add/Drop Multiplexing and Gain Equalization", with D.A. Smith (Case Western Reserve Univ.)

**National Science Foundation (NSF) 7/96-6/06,** "Multiwavelength Switching in High-Capacity Media Systems," Engineering Research Center in Integrated Media Systems, **Key Investigator** (PI - C.L. Nikias)

**Defense Advanced Research Projects Agency (DARPA) (9/96-8/99), Co-PI,** "Novel WDM Device and System Research for Ultra High Capacity Optical Interconnects", with C.J. Chang-Hasnain (UC Berkeley)

**National Science Foundation (NSF) 8/96-7/97, Co-PI,** Instrumentation Grant,  
"Wired and Wireless High-Speed Networks," with R.A. Scholtz and J. Choma (USC)

**National Science Foundation (NSF) 7/96-6/97, Co-PI,** with L.A. McAdams (Optivision, Inc.), Small Business Technology Transfer (STTR) Program, "Novel Wavelength Shifting Structures for Optical Networks,"

**GRANTS: (CONTINUED)**

**Joint Services Electronics Program (JSEP)** (4/97-3/00), **Senior Investigator** (PI - W. Steier, USC), "Ultra-High-Speed Wavelength and Time Switching for Bursty Communications"

**Defense Advanced Research Projects Agency (DARPA)** (9/97-8/00), **Senior Investigator** (PI - S.R.J. Brueck, Univ. of New Mexico), "Optoelectronic Materials Center for Manufacturable, Multi-dimensional High Capacity Optoelectronic Interconnects"

**Defense Univ. Research Initiative Program (DURIP/ DARPA)** (5/98-4/99), **Co-PI**, "2D VCSEL Arrays for Optical Imaging, Interconnects, and Signal Processing," with C. Chang-Hasnain (UC Berkeley)

**Defense Advanced Research Projects Agency (DARPA)** (6/98-5/01), **PI**, "Using A Recirculating Fiber Loop To Determine The Limitations Placed On Ultra-High-Performance Soliton And Linear Optical Systems By Polarization Mode Dispersion," Next Generation Internet

**National Science Foundation (NSF)** (9/98-8/01), **Co-PI**, "Rapidly-Tunable Integrated Vertical Cavity Filters and Attenuators For Dynamically Reconfigurable Packet-Switched WDM Optical Networks," with C. Chang-Hasnain (UC Berkeley)

**Optoelectronics Industry Development Assoc. / Joint Optoelectronics Project (OIDA/JOP)** (2/98), **PI**, "Ultra-High-Capacity WDM Networks"

**Charles Lee Powell Foundation** (7/98-6/01), **PI**, "Photonics Backbone for Wireless Communications"

**ILX Lightwave Corp.** (6/00), **University Donations Program Award**, **PI**, "WDM Systems Research for the Next Generation Internet"

**Defense Advanced Research Projects Agency (DARPA)** (7/00-6/04), **Senior Investigator** (PI - S.R.J. Brueck, Univ. of New Mexico), "Optoelectronic Materials Center for High Capacity Optoelectronic Interconnects"

**Department of Defense** (6/99-5/01), **PI**, "Compensation of Channel-Degrading Effects in Reconfigurable WDM Systems"

**Hitachi Corporation** (10/99-6/01), **PI**, "Compensation of Polarization Mode Dispersion"

**Phaethon Communications** (10/00-11/02), **PI**, "Studies of Optical-Fiber-Induced Dispersion Effects"

**Defense Advanced Research Projects Agency (DARPA)** (6/00-5/03), **PI**, "Tunable Compensation of Chromatic- and Polarization-Dispersion Effects for Enabling Significantly Higher Performance in the BOSSNET and NTON SUPERNET Testbeds," Next Generation Internet Program

**The Okawa Foundation** (10/00-9/01), **PI**, "Ultra-High-Capacity Multi-Wavelength Optical Systems"

**Intel Corporation** (12/01-11/02), **PI**, "New Technologies for Internet Routing in All-Optical Networks "

**National Science Foundation (NSF)** (10/00-9/03), **PI**, "Novel Dispersion-Division-Multiplexing Technique for Enabling Double the Spectral Efficiency in Transmission & Routing of Photonic & Microwave Networks"

**National Science Foundation (NSF)** (10/00-9/03), **Co-PI**, "Vertically-Integrated Primitives for a Bufferless All-Optical Packet-Switched Network," with C. Chang-Hasnain and V. Anantharam (UC Berkeley)

**GRANTS: (CONTINUED)**

**Defense Advanced Research Projects Agency (DARPA)** (6/00-5/03), **Co-PI**, "Programmable Miniaturized Devices for CDMA WDM Systems," Chip-Scale WDM Program (PI - D.A.B. Miller, Stanford University)

**Defense Advanced Research Projects Agency (DARPA)** (6/00-5/03), **Co-PI**, "Microresonator and Photonic Crystal Filters, Lasers and Modulators for Analog and Digital Chip Scale WDM Systems," Chip-Scale WDM Program, (PI - P.D. Dapkus and J. O'Brien, USC)

**JDS Uniphase Corporation** (3/02), **PI**, "Equipment Donation for the Optical Communications Lab at USC"

**Cisco Systems** (9/03-8/04), **PI**, "Mitigation of Fiber Nonlinear Effects in PMD-Limited WDM Systems"

**Virtual Photonics Inc.** (5/03), **PI**, "Software Donation for the Optical Communications Lab at USC"

**Defense Advanced Research Projects Agency (DARPA)** (12/02-11/06), **PI**, "Secure Communications Over LANs using O-CDMA," OCDMA Program

**Intel Corporation** (1/03-12/04), **PI**, "Optical Buffers for Enhancing Optical Burst Switching"

**Cisco Systems** (9/04-8/05), **PI**, "Analysis of the Transmission Limitations of Directly Modulated Digital Signals in Metropolitan Optical Communication Systems"

**Missile Defense Agency** (10/03-9/04), **Co-PI**, "Measurements of Thin-Film Waveguides" (PI – Boyd Hunter, TPL, Inc.)

**National Science Foundation (NSF)** (9/03-8/06), **PI**, "High-Capacity Optical Communication Networks: Device and Systems Research using Photonic Crystal Structures that Enable Highly-Advanced Classical and Quantum Optical Networking," with A. Scherer (Caltech)

**Defense Advanced Research Projects Agency (DARPA)** (7/04-6/08), **Senior Investigator** (PI - S.R.J. Brueck, Univ. of New Mexico), "Optoelectronic Materials Center for Spatial, Temporal and Spectral Localization for Advanced Photonic Capabilities," University Photonics Research Program

**Defense Advanced Research Projects Agency (DARPA)** (4/04-10/05), **PI**, "DOD-N Network Performance Based on Specific Physical DOD-N Technology Parameters: Connecting Multiple Core Routers," DOD-N Program

**Defense Advanced Research Projects Agency (DARPA)** (7/04-9/08), **Co-PI** (PI – R.W. Boyd, Univ. of Rochester), "Applications of Slow Light in Optical Fibers," Slow Light Program

**Intel Corporation** (5/05-12/05), **PI**, "Measurements of Silicon-Based Photonic Filters"

**Cisco Systems** (9/05-8/06), **PI**, "Systems Measurements and Demonstrations of Cost-Effective Reach Extension and Monitoring using Intel-Fabricated Silicon-Based Waveguide Grating Filters"

**National Science Foundation (NSF)** (9/05-8/09), **Senior Investigator**, "NIRT: Integrated Nanophotonics for Quantum Computation and Quantum Information Processing" (PI – J.D. O'Brien, USC)

**Hewlett Packard Corporation** (10/05-1/06), **PI**, "Optical Interconnections"

**Intel Corporation** (1/06-12/06), **PI**, "Link Studies of Silicon Photonic Devices"



**GRANTS: (CONTINUED)**

**National Science Foundation (NSF)** (9/06-8/09), **Co-PI**, "A Hybrid Integrated Bidirectional Transparent RF-Optical Interface for Heterogeneous Data Traffic" (PI – H. Hashemi, USC)

**Defense Advanced Research Projects Agency (DARPA)** (10/06-7/07), **Co-PI** (PI – R. Beausoleil, Hewlett Packard), "Applications of Nanophotonics to Information Technology," Intra-Chip Communications Program (ARL)

**Defense Advanced Research Projects Agency (DARPA)** (7/07-6/08), **PI**, "Cisco: Variable-Bit-Rate and Multiple-Modulation Format DQPSK/ASK Receivers," Industrial Matching Program for the University Photonics Research Program

**Cisco Systems** (7/07-6/08), **PI**, "Techniques for Enhancing WDM Transmission Performance when using Advanced Modulation Formats at 40 Gb/s and Beyond"

**Defense Advanced Research Projects Agency (DARPA)** (7/07-6/08), **PI**, "Intel: Phase and Amplitude Response of Silicon Modulators for Optical Systems," Industrial Matching Program for the University Photonics Research Program

**Intel Corporation**, (7/07-6/08), **PI**, "Phase and Amplitude Response of Silicon Modulators for Optical Systems"

**Optoelectronics Industry Development Association (OIDA)**, (11/07-3/08), **PI**, "High-Speed Optical Modulators," Photonics Technology Access Program (PTAP)

**National Institute of Standards and Technology (NIST)**, (10/07-9/08), **PI**, "Optical Performance Monitoring to Enable Robust and Reconfigurable Optical Networks," Research Grants Program

**Defense Advanced Research Projects Agency (DARPA)** (1/08-12/10), **Co-PI** (PI – Ann C. Von Lehman, Telcordia), "Dynamic Resilient Terabit IP/Optical Networks," CORONET Program

**Defense Advanced Research Projects Agency (DARPA)** (1/08-6/12), **PI**, "Enhanced Performance & Functionality of Continuously-Tunable Optical Delays," POPS Program

**Hewlett Packard Corporation** (5/08-9/08), **PI**, "Micro-ring Resonators for Optical Interconnections"

**Defense Security Cooperation Agency (DSCA)** (8/09-7/11), **PI**, "Enabling Higher-Performance Nonlinearity-Based Optical Sensors: Advances in Sensitivity and Dynamic Behavior "

**Defense Univ. Research Instrumentation Program / Air Force Office of Scientific Research (DURIP/AFOSR)** (6/08-5/09), **PI**, "A 100-Gbit/s Base Multiplexer for Generation and Transmission of 400-Gbit/s Optical Polarization-Multiplexed Differential Quadrature Phase-Shift-Keying Signals"

**Defense Advanced Research Projects Agency (DARPA)** (6/08-5/09), **PI**, "Exploring Signal Distortion in an Ultra-Low-Loss Waveguide," iPhOD Program

**Defense Advanced Research Projects Agency (DARPA)** (9/08-8/09), **Co-PI** (PI – A.L. Gaeta, Cornell Univ.), "Large Tunable Delays in Fiber and On-Chip via Conversion/Dispersion," Slow Light Program

**Hewlett Packard Corporation** (8/08-7/09), **PI**, "Signal Processing in On-Chip Optical DWDM Networks," HP Labs Innovation Research Program (IRP)

**GRANTS: (CONTINUED)**

**Defense Advanced Research Projects Agency (DARPA)** (11/08-10/09), **Co-PI** (PI – Ann C. Von Lehman, Telcordia), "Data in the Optical Domain Networks (DOD-N) Enabling Technology Transition," DOD-N Program

**National Science Foundation (NSF)** 9/08-8/13, "Center for Integrated Access Networks (CIAN)," Engineering Research Center, **Thrust Leader** (PI - Nasser Peyghambarian, Univ. of Arizona)

**Hewlett Packard Corporation** (8/09-7/10), **PI**, "Signal Processing in On-Chip Optical DWDM Networks II," HP Labs Innovation Research Program (IRP)

**Defense Advanced Research Projects Agency (DARPA)** (11/09-5/14), **Co-PI**, "Ultra-low Loss, Chip-Based Hollow-Core Waveguide using High-Contrast Grating," integrated Photonic Delay (iPhoD) Program (PI: C.J. Chang Hasnain, UC Berkeley)

**Gigoptix Corp.** (11/09-10/10), **PI**, "High-Speed Modulation in Optical Communication Systems"

**Hewlett Packard Corporation** (8/10-7/11), **PI**, "Signal Processing in On-Chip Optical DWDM Networks III," HP Labs Innovation Research Program (IRP)

**Defense Advanced Research Projects Agency (DARPA)** (6/10-4/11), **PI**, "Optical Tapped-Delay-Line High-Speed Signal Processing," MTO Study

**Cisco Systems** (10/09-9/10), **PI**, "Novel Techniques to Enhance the Capacity Planning and Resource Management Efficiency of High-Capacity Optical Networks," Univ. Research Program

**Defense Advanced Research Projects Agency (DARPA)** (9/10-8/13), **Co-PI**, "The Ultimate Capacity-Achieving Receiver for Classical Optical Communications," Information on a Photon (InPho) Program (PI: S. Dolinar, JPL)

**National Science Foundation (NSF)** (11/11-10/16), **Co-PI**, Major Instrumentation Grant (MRI), "Development of Measurement and Testing Equipment for Distributed Wireless Communications," with A. Molisch (PI, USC).

**Defense Univ. Research Initiative Program (DURIP/ONR)** (12/11-11/12), **Co-PI**, "Ultra-wideband MIMO Channel Sounder for Distributed Electronic Warfare Applications and Localization Systems," with A. Molisch (PI, USC)

**Cisco Systems** (10/11-9/12), **PI**, "Flexible, Reconfigurable Capacity Output of High-Performance Optical Transceivers Enabling Cost-Efficient, Scalable Network Architectures," Univ. Research Program

**Defense Security Cooperation Agency (DSCA)** (2/1/2012-1/31/2013), **PI**, "Performance Enhancement of Optical Fiber Sensors Based on Nonlinearities and Multi-Dimensional Parameterization"

**Gigoptix Corp.** (11/10-10/11), **PI**, "100-Gbaud Modulation in Optical Communication Systems"

**Defense Advanced Research Projects Agency (DARPA)** (2/11-2/12), **PI**, "High-Speed Optical Processing of Sparse Aperture Image Data (50 Megapixels, 10-bit Depth) using Tunable Optical Tapped-Delay-Lines," MTO/STO Study

**Google Faculty Research Awards Program** (11/11-10/12), **PI**, "Cost-Effective, Ubiquitous Optical SNR Performance Monitoring to Enhance Stability and Reconfigurability in Advanced, High-Capacity Google Networks"

**GRANTS: (CONTINUED)**

**Defense Advanced Research Projects Agency (DARPA)** (6/12-1/14), **PI**, "Reconfigurable Networking Functions (Add/Drop, Data Exchange, Multicasting) in OAM-Based Systems," DSO Study

**National Science Foundation (NSF)** (3/2012-3/2015), **PI**, "Terabit-per-second Data Processing to Extract Features of Interest in Enormous Amount of Data"

**Air Force Office of Scientific Research (AFOSR)** (7/12-7/15), **PI**, "Tailoring of Dispersion and Nonlinearity of Slotted Waveguides and Ring Resonators to Achieve Stable, Efficient, Octave-Spanning Optical Frequency Combs," Basic Research Initiative (BRI) Program

**Intel Labs University Research Office (URO)** (12/12-12/15), **Co-PI**, "Higher, Denser, Wilder: Massively Broadband and Adaptive Wireless for 5th Generation Wireless Communications" (PI: A. Molisch, USC)

**Google Faculty Research Awards Program** (1/13-12/13), **PI**, "Reconfigurable, Ubiquitous Optical Signal-to-Noise-Ratio Monitoring to Enhance Stability and Upgradability in Google's Present and Future High-Capacity Networks"

**National Science Foundation (NSF)** 9/13-8/15, "Center for Integrated Access Networks (CIAN)," Engineering Research Center, **Thrust Leader** (PI - Nasser Peyghambarian, Univ. of Arizona)

**National Science Foundation (NSF)** (10/13-9/16), **Co-PI**, INSPIRE Program, "An Optical Turing Machine for Native Computing using High-Capacity Transmission Modulation Format Symbols" (PI: Joe Touch, USC ISI)

**Nxgen Partners** (5/14-8/15), **PI**, "Application of Orbital Angular Momentum to Communications"

**Bandwidth10** (5/14-7/15), **PI**, USC-1347563, NSF, Option 1:Small-Business ERC Collaborative

**Air Force Office of Scientific Research (AFOSR)** (6/15-6/19), **PI**, "Fundamental Understanding of the Physics of Kerr Frequency Comb and Its Effects on the Applications of Coherent Communication, Signal Processing and Measurement"

**Air Force Office of Scientific Research (AFOSR)** (12/14-6/15), **Co-PI**, "Terabit Optical COMMunications System (TOCOMM)," STTR Program

**Defense Security Cooperation Agency (DSCA)** (11/15-1/16), **PI**, "Tunable Discrete Random Access Optical Buffer"

**Defense Security Cooperation Agency (DSCA)** (11/15-11/16), **PI**, "Generic Fabrication Methodology for VIS-IR Integrated Electrooptical Circuits"

**Fujitsu** (4/15-4/16), **PI**, "Optical Signal Processing Functions in an Optical Network"

**National Institute of Standards and Technology (NIST)** (2/16-1/17), **PI**, "Measurement, Technology, and Analysis of Overlapped Channels for the Optimal Use of Spectrum in Communication Systems"

**NxGen Partners** (12/15-8/16), **PI**, "Using OAM Beams for High-capacity RF E-band & Optical Fiber km Links"

**Air Force Office of Scientific Research (AFOSR)** (3/16-2/18), **Co-PI**, "Phase II, The Terabit Optical COMMunications (TOCOMM) System" (PI: Robert Bock, R-Dex)

**GRANTS: (CONTINUED)**

**Office of Naval Research (ONR)** (7/15-7/18), **Co-PI**, “High-Capacity, Free-Space Quantum Key Distribution based on Spatial and Polarization Encoding” (PI: Robert Boyd, University of Rochester)

**National Science Foundation (NSF)** (6/15-5/18), **Co-PI**, “Fundamentals of Wireless Communication Systems using Orbital Angular Momenta” (PI: Andreas F. Molisch)

**Huawei / Futurewei** (2/16-2/18), **PI**, “Optical Signal Processing for All-Optical Networks”

**Intel Labs** (2/16-2/19), **PI**, “OAM-Based Wireless Systems”

**Office of Naval Research (ONR)** (10/15-6/16), **Co-PI**, “STTR: Precision Optical Navigation Guidance (PRONG) System” (PI: D. Starodubov, FOMS, Inc.)

**Vannevar Bush Faculty Fellowship (VBFF)** (08/16-07/21), **PI**, “Multiple Structured Electromagnetic Waves Containing Orbital Angular Momentum for Novel Communications, Imaging, and Directed Energy”

**Defense University Research Instrumentation Program (DURIP)** (07/16-06/17), **PI**, “High Baud-Rate and High-Order QAM Optical Transmitter for Long-Range Terabit-per-Second Free-Space Optical Communications Using Orbital Angular Momentum”

**National Science Foundation (NSF)** (07/16-03/17), **Co-PI**, “STTR Phase I: TeraLink - Next Generation Free Space Optical Communications System”

**Huawei / Futurewei** (7/16-7/17), **PI**, “Perspectives on the Future of Optical Communications”

**Fujitsu** (4/17-9/18), **PI**, “Insights for Future Optical Communication Systems”

## **USC ACTIVITIES:**

**Director**, Communications Sciences Institute, Ming Hsieh Dept. of Electrical Eng. ('16-'17)  
Faculty Advisor, IEEE, USC Student Chapter ('16-'18)  
Member, Graduate Curriculum Committee, Ming Hsieh Dept. of Electrical Engineering – Systems ('16-'17)  
**Chair**, Provost's University-Wide Committee on Academic Review (UCAR) (2013-2015)  
**Co-Chair**, Provost's University-Wide Committee on Academic Review (UCAR) (2012-2013)  
**Chair**, Provost's University-Wide Ph.D. Fellowship Evaluation Task Force (2011-2012)  
**Chair**, Provost's University-Wide Graduate School Committee, Fellowships, Prizes & Awards '09-'11  
**President**, USC Chapter of Phi Kappa Phi All-University Honor Society ('11-'12)  
**Vice President**, USC Chapter of Phi Kappa Phi All-University Honor Society ('10-'11)  
Executive Board Member, USC Chapter of Phi Kappa Phi All-University Honor Society ('09-'12)  
Member, Provost's Advisory Committee on Transformational Hiring in Sciences & Eng. ('11-'12)  
Member, Vice-Provost's The Graduate School Faculty Advisory Council (2011-2012)  
Faculty Advisory Committee, USC Viterbi School of Eng., New Frontiers of Science & Eng. Bldg. ('10)  
Provost's Conflict of Interest in Research Committee ('07-'08, '08-'09, '09-'10)  
Provost's Conflict of Interest in Research Task Force ('10-'11)  
Provost's Faculty Working Group for "Defining the New Diploma in Ph.D. Innovation" ('08-'09)  
Provost's Graduate School Committee on Fellowships, Prizes, and Awards ('07-'08, '08-'09)  
Member, Dean's Committee of the Unification of the Ming Hsieh EE Dept., USC Viterbi School of Eng. ('10)  
Executive Committee, Ming Hsieh Dept. of Electrical Engineering - Systems ('07-present)  
**Co-Director**, Communications Sciences Institute, Ming Hsieh Dept. of Electrical Eng. ('07-'11)  
Academic Program Review Subcommittee, Ming Hsieh Dept. of EE Advisory Board Committee ('10)  
Student Affairs Committee of the USC Board of Trustees, Faculty Member ('06-'07)  
Organizer, Students' Practical Guide Seminar Series, Ming Hsieh Dept. of Electrical Eng. ('07-present)  
Co-Chair, Departmental Retreat Committee, Ming Hsieh Dept. of Electrical Eng. ('07)  
Member, Awards Committee, Ming Hsieh Dept. of Electrical Eng. ('07-'08, '08-'09, '11-'12)  
Member, Research Committee of the Engineering Faculty Council, USC Viterbi School of Eng. ('07)  
USC Center for Excellence in Teaching (CET), Teaching Assistant Training Program ('06)  
University-Wide Committee on Appointments, Promotions, & Tenure (UCAPT) ('03-'04, '04-'05, '08-'10)  
Provost's University Financial Disclosures Review Committee ('03-'04, '04-'05, '05-'06, '06-'07)  
Committee, University-Wide Associates Awards, Excellence in Teaching & Outstanding TA ('03-'05, '07-'10)  
Faculty Advisor, Alpha Delta Sigma, USC Jewish Honor Campus Fraternity  
Nominated and Accepted, Provost's Leadership Council ('97-'98)  
USC Department of Electrical Engineering – Systems, Chair Search Committee ('02-'03)  
Chair, Best Student Research Paper Award Committee, Dept. of Electrical Engineering ('02)  
Director's Search Committee, USC's NSF Engineering Research Center in Multimedia ('01-'02)  
USC School of Engineering Dean's Search Committee ('00-'01)  
USC School of Engineering Research Committee ('99-'00)  
Elected, USC Engineering Appointments, Promotions, & Tenure Committee ('94-'98)  
Associate Director, USC Integrated Media Systems Center, Student Affairs ('96-'01)  
University Committee on Patents and Technology ('94-'97)  
Associate Director, USC Center for Photonic Technology ('94-present)  
USC School of Engineering Restructuring Subcommittee ('96)

**USC ACTIVITIES: (CONTINUED)**

USC School of Engineering Systems Architecting Committee ('97)

USC School of Eng. Recruitment Enrollment Management Committee ('94-'96)

Faculty Advisor, Optical Society of America, USC Student Chapter ('95-present)

Board of Directors, LA Hillel City Board, USC Representative ('95-'97)

Faculty Advisory Board, USC Hillel Organization ('92-'99)

Seminar Series Coordinator (Communications Sciences Institute) ('92-'95)

Ph.D. Screening Exam Coordinator (Communications Sciences Institute) ('92-'97)

## PUBLICATIONS

### U.S. PATENTS:

1. Title: A Method of Localized Photochemical Etching of Multilayered Semiconductor Body (U.S. Pat. Ser. No. 5,081,002), Co-Inventors: M. N. Ruberto, D. V. Podlesnik, and R. M. Osgood, Jr. (Jan. 14, 1992)
2. Title: One-To-Many Simultaneous Optical Two-Dimensional Plane Interconnections using Multiple Wavelength, Vertical Cavity, Surface-Emitting Lasers and Wavelength-Dependent Detector Arrays (U.S. Pat. Ser. No. 5,546,209), Co-Inventors: C.J. Chang-Hasnain and J.E. Leight. (Aug. 13, 1996)
3. Title: Tunable Dispersion Compensator Based on a Nonlinearly-Chirped Fiber Bragg Grating (U.S. Pat. Ser. No. 5,982,963), Co-Inventors: J.-X. Cai, J. Feinberg, K.-M. Feng, V. Grubsky, and D.S. Starodubov. (Nov. 9, 1999)
4. Title: Integrated Bi-directional Gradient Refractive Index Multiplexer (U.S. Pat. Ser. No. 6,011,885), Co-Inventors: J.R. Dempewolf, R.H. Dueck, B.V. Hunter, and R.K. Wade. (Jan. 4, 2000)
5. Title: Dispersion Compensation by using Tunable Nonlinearly Chirped Gratings (U.S. Pat. Ser. No. 6,330,383), Co-Inventors: J.-X. Cai, K.-M. Feng, R. Khosravani, S. Lee, and J. Peng. (Dec. 11, 2001)
6. Title: Optical Compensation for Dispersion-Induced Power Fading in Optical Transmission of Double-Sideband Signals (U.S. Pat. Ser. No. 6,388,785), Co-Inventors: O.H. Adamczyk, S.A. Havstad, A.B. Sahin, and Y. Xie. (May 14, 2002)
7. Title: Tunable Compensation for Polarization-Mode Dispersion using a Birefringent Nonlinearly-Chirped Grating in a Dual-Pass Configuration (U.S. Pat. Ser. No. 6,400,869), Co-Inventors: S. Lee, Z. Pan, and Y. Xie. (June 4, 2002)
8. Title: Dynamic Power Equalization of Many Wavelength-Division-Multiplexed Channels in a Fiber Optic System using Acousto-Optic Technology (U.S. Pat. Ser. No. 6,341,021), Co-Inventors: J.-X. Cai, K.-M. Feng, S.H. Huang, D.A. Smith, and X.Y. Zou. (Jan. 22, 2002) [Note: Name misspelled as "Wilner".]
9. Title: Tunable Optical Dispersion-Slope Compensation Based on a Nonlinearly-Chirped Bragg Grating (U.S. Pat. Ser. No. 6,453,093), Co-Inventors: S. Lee, Z. Pan, and Y. Xie. (Sept. 17, 2002)
10. Title: Tuning of Optical Dispersion by using a Tunable Fiber Bragg Grating (U.S. Pat. Ser. No. 6,453,095), Co-Inventors: J.-X. Cai, J. Feinberg, K.-M. Feng, V. Grubsky, and D.S. Starodubov. (Sept. 17, 2002)
11. Title: Optical Detection of a Fiber Span with High Polarization-Mode Dispersion in a Fiber System (U.S. Pat. Ser. No. 6,459,479), Co-Inventors: S. Lee. (Oct. 1, 2002)

12. Title: Technique for Detecting the Status of WDM Optical Signals (U.S. Pat. Ser. No. 6,480,648), Co-Inventors: J.R. Dempewolf, W.W. Peck, I. Turner, and R.K. Wade. (Nov. 12, 2002)
13. Title: Polarization-Mode Dispersion Emulator (U.S. Pat. Ser. No. 6,542,650), Co-Inventors: P. Ebrahimi, E. Ibragimov, R. Khosravani, I.T. Lima, Jr., and C.R. Menyuk. (April 1, 2003)
14. Title: Compensation and Control of Both First-Order and Higher-Order Polarization-Mode Dispersion (U.S. Pat. Ser. No. 6,654,103), Co-Inventors: S. Lee, L.-S. Yan, and Q. Yu. (Nov. 25, 2003)
15. Title: Compensation for Polarization-Mode Dispersion in Multiple Wavelength-Division Multiplexed Channels Without Separate Compensation for Each Individual Channel (U.S. Pat. Ser. No. 6,603,890), Co-Inventors: P. Ebrahimi, S.A. Havstad, R. Khosravani, and Y.W. Song. (Aug. 5, 2003)
16. Title: WDM Fiber Amplifiers using Sampled Bragg Gratings (U.S. Pat. Ser. No. 6,621,627), Co-Inventors: Z. Pan and Y. Xie. (Sept. 16, 2003)
17. Title: Polarization-Division Multiplexing Based on Power Encoding of Two Different Polarization Channels (U.S. Pat. Ser. No. 6,714,742), Co-Inventors: M.C. Cardakli and M.I. Hayee. (March 30, 2004)
18. Title: Intra-Bit Polarization Diversity Modulation (U.S. Pat. Ser. No. 6,646,774), Co-Inventors: T. Luo, Z. Pan, A.B. Sahin, Y. Wang, C.-Y. Yu, and Q. Yu. (Nov. 11, 2003)
19. Title: Reconfigurable Optical Recognition of Bit Information in a Digital Data Stream with Different Bit Rates (U.S. Pat. Ser. No. 6,751,416), Co-Inventors: M.C. Cardakli, D. Gurkan, and S. Lee. (June 15, 2004)
20. Title: Devices and Applications Based on Tunable Waveguiding Bragg Gratings with Nonlinear Group Delays (U.S. Pat. Ser. No. 6,915,040), Co-Inventors: Y.W. Song and S.M.R. Motaghian Nezam. (July 5, 2005)
21. Title: Optical Dispersion Monitoring Based on Vestigial Sideband Optical Filtering (U.S. Pat. Ser. No. 7,035,538), Co-Inventors: Z. Pan, L.-S. Yan, and Q. Yu. (April 25, 2006)
22. Title: Monitoring and In-Line Compensation of Polarization Dependent Loss for Lightwave Systems (U.S. Pat. Ser. No. 7,206,517), Co-Inventors: L.-S. Yan and Q. Yu. (April 17, 2007)
23. Title: Optically Boosted Router (U.S. Pat. Ser. No. 7,369,766), Co-Inventors: J. Bannister, J. McGeehan, P. Kamath, A. Patel, and J.D. Touch. (May 6, 2008)
24. Title: Code Cycle Modulation: Concept and Implementation (U.S. Pat. Ser. No. 7,616,618), Co-Inventors: P.V. Kumar, R. Omrani, P. Saghari, and J.D. Touch. (Nov. 10, 2009)
25. Title: Waveguide-Based Dispersion Device (U.S. Pat. Ser. No. 8,483,529), Co-Inventors: Y. Yue and L. Zhang. (July 9, 2013)
26. Title: Sweep-Free Stimulated Brillouin Scattering-Based Fiber Optical Sensing (U.S. Pat. Ser. No. 8,800,375), Co-Inventors: M. Tur and A. Voskoboynik. (Aug. 12, 2014)



27. Title: All-optical Tunable Tapped-Delay-Lines using Wavelength Conversion and Chromatic Dispersion Based Delays (U.S. Pat. Ser. No. 8,976,445), Co-inventors: Salman Khaleghi, Mohammad Reza Chitgarha, and Omer Yilmaz. (March 10, 2015)
28. Title: On-Chip Two-Octave Supercontinuum Generation Enabled by Advanced Chromatic Dispersion Tailoring in Slotted Waveguides (U.S. Pat. Ser. No. 9,110,219), Co-inventors: Yan Yan, Yang Yue, and Lin Zhang. (Aug. 18, 2015)
29. Title: Mirrorless-Oscillation in a Waveguide using Non-Degenerate Four-Wave Mixing (U.S. Pat. Ser. No. 9,086,609), Co-inventors: Yan Yan and Lin Zhang (July 21, 2015)
30. Title: Reconfigurable Optical Transmitter (U.S. Pat. Ser. No. 9,166,721), Co-inventors: Salman Khaleghi and Mohammad Reza Chitgarha. (October 20, 2015)
31. Title: Systems and Techniques for Orbital Angular Momentum Based Reconfigurable Switching (U.S. Pat. App. No. 14/663392, to be issued), Co-inventors: Nisar Ahmed, Hao Huang, Yongxiong Ren, Moshe Tur, Moshe J. Willner, Yan Yan and Yang Yue (December 3, 2015)
32. Title: Adaptive Optics Based Simultaneous Turbulence Compensation of Multiple Orbital Angular Momentum Beams (U.S. Pat. App. No. 14/807793, to be issued), Co-inventors: Hao Huang, Yongxiong Ren and Guodong Xie (January 28, 2016)
33. Title: Methods, Systems and Devices for Optical-Signal-to-Noise-Ratio Monitoring (U.S. Pat. App. No. 14/221124, to be issued), Co-inventors: Mohammad Reza Chitgarha and Salman Khaleghi (May 19, 2016)
34. Title: Automatically Locked Homodyne Detection (U.S. Pat. App. No. 14/856389, to be issued), Co-inventors: Mohammad Reza Chitgarha, Salman Khaleghi, Amirhossein Mohajerin-ariaei and Morteza Ziyadi (Apr. 18, 2017)

## **BOOKS:**

1. **Optical Fiber Telecommunications VI, Volumes A and B**, Ivan P. Kaminow, Tingye Li, and Alan E. Willner, editors, Elsevier Publishers, Academic Press, San Diego, May 2013, ISBN: 978-0-12-396958-3 and 978-0-12-396960-6.
2. **Optical Fiber Telecommunications ebook Collection: Ultimate CD**, Stewart E Miller, Ivan P. Kaminow, Thomas Koch, Tingye Li, and Alan E. Willner, editors, Elsevier Publishers, Academic Press, San Diego, Sept. 2008, ISBN: 978-0-12-374643-4 and 978-0-12-374643-6.
3. **Optical Fiber Telecommunications V, Volumes A and B**, Ivan P. Kaminow, Tingye Li, and Alan E. Willner, editors, Elsevier Publishers, Academic Press, San Diego, Feb. 2008, ISBN: 978-0-12-374171-4 and 978-0-12-374172-4.
4. **Optical Fiber Communication Systems**, co-authors L.G. Kazovsky, S. Benedetto, and A.E. Willner, Artech House Publishers, Boston, Oct. 1996, ISBN: 0-89006-756-2.
5. **System Technologies, Trends in Optics and Photonics**, vol. 12, co-editor Curtis R. Menyuk (Univ. of Maryland), Optical Society of America, Washington, D.C., 1997, ISBN: 1-55752-484.

6. **Optical Amplifiers and Their Enabling Technologies, Trends in Optics and Photonics**, vol. 16, co-editors S. Sasaki (Hitachi Ltd.) and M.N. Zervas (Southampton Univ.), Optical Society of America, Washington, D.C., 1998, ISBN: 1-55752-505-6.
7. **Emerging Components and Technologies for All Optical Networks**, Proceedings of SPIE - the International Society for Optical Engineering, vol. 2613, co-editors Emil S. Koteles and Alan E. Willner, SPIE, Bellingham, WA, 1995, ISBN-13: 978-0819419774.
8. **Optical Fiber Communication**, Proceedings of SPIE - the International Society for Optical Engineering, co-editors Winston I. Way, Franklin K. Tong, and Alan E. Willner, SPIE, Bellingham, WA, 1998, ISBN-13: 978-0819428745.

### **BOOK CHAPTERS:**

1. Alan. E. Willner, Yan Yan, Yongxiong Ren, Nisar Ahmed and Guodong Xie, "Orbital Angular Momentum-based Wireless Communications: Designs and Implementations," **Signal Processing for 5G: Algorithms and Implementations, First Edition**, Chapter 13, Fa-Long Luo and Charlie Zhang, editors, John Wiley & Sons, Ltd., Chichester, October 2016, ISBN: 978-1-119-11646-2.
2. Alan. E. Willner, "Optical Communications: The Next 100 Years," **OSA Century of Optics**, Section "The Future", Paul Kelley, Govind Agrawal, Mike Bass, Jeff Hecht and Carlos Stroud, editors, The Optical Society (OSA), Washington, 2015, ISBN: 978-1-943580-04-0.
3. Jian Wang and Alan E. Willner, "High-Base Optical Signal Processing," **Applications of Digital Signal Processing through Practical Approach**, Chapter 2, Sudhakar Radhakrishnan, editor, InTech Publishers, San Diego, October 2015, ISBN: 978-953-51-2190-9.
4. Antonella Bogoni and Alan Willner, "Photonic Signal Processing for Login and Computation," **All-Optical Signal Processing: Data Communication and Storage Applications**, Chapter 6, S. Wabnitz and B. Eggleton, editors, Springer Series, vol. 194, April 2015, ISBN: 978-3-319-14991-2.
5. Jian Wang, Miles J. Padgett, Siddharth Ramachandran, Martin P.J. Lavery, Hao Huang, Yang Yue, Nenad Bozinovic, Steven E. Golowich, and Alan E. Willner, "Multimode Communications using Orbital Angular Momentum," **Optical Fiber Telecommunications VIB**, Chapter 12, Ivan P. Kaminow, Tingye Li, and Alan E. Willner, editors, Elsevier Publishers, Academic Press, San Diego, March 2013, ISBN: 978-0-12-396960-6.
6. Jian Wang and Alan E. Willner, "Optical Signal Processing: Data Exchange," **Design and Architectures for Digital Signal Processing**, Chapter 3, Gustavo Ruiz and Juan A. Michell, editors, InTech Publishers, January 2013, ISBN 978-953-51-0874-0.
7. Avi Zadok, Daniel Grodensky, Daniel Kravitz, Yair Peled, Moshe Tur, Xiaoxia Wu and Alan E. Willner, "Ultra-Wideband Waveform Generation using Nonlinear Propagation in Optical Fibers," **Invited Chapter**, in **Ultra Wideband Communications: Novel Trends - Antennas and Propagation**, Mohammad Matin, editor, InTech Publishers, August 2011, ISBN 978-953-307-452-8.
8. A.E. Willner, Jeng-Yuan Yang, and Xiaoxia Wu, "Optical Performance Monitoring: Perspectives and Challenges," **Optical Performance Monitoring Techniques for Next Generation Photonic Networks**, Calvin Chan, editor, Elsevier Publishers, Academic Press, San Diego, 2010.
9. L. Zhang and A. E. Willner, "Micro-Resonators for Communication and Signal Processing Applications," **Photonic Microresonator Research and Applications**, chapter, I. Chremmos, O. Schwelb and N. Uzunoglu, editors, Springer Publishing House, New York, ISBN: 978-1-4419-1743-0, 2010.

10. Alan E. Willner, Changyuan Yu, Zhongqi Pan, and Yong Xie, "WDM Fiber Optic Communication Networks," **Handbook of Optics, Volume V**, Chapter 21, G. Li and C. DeCusatis, editors, McGraw-Hill, Inc., New York, New York, 2009.
11. A.E. Willner, Z. Pan, and C. Yu, "Optical Performance Monitoring," **Optical Fiber Telecommunications VB**, Chapter 7, Ivan P. Kaminow, Tingye Li, and Alan E. Willner, editors, Elsevier Publishers, Academic Press, San Diego, Feb. 2008, ISBN: 978-0-12-374172-4.
12. I.P. Kaminow, Tingye Li, and A.E. Willner, "Overview Chapter," **Optical Fiber Telecommunications V, Volumes A and B**, Chapter 1, Ivan P. Kaminow, Tingye Li, and Alan E. Willner, editors, Elsevier Publishers, Academic Press, San Diego, 2008, ISBN: 978-0-12-374171-4 and 978-0-12-374172-4.
13. A.E. Willner, B. Zhang, and L. Zhang, "Reconfigurable Signal Processing using Slow-Light-based Tunable Optical Delay Lines," **Slow Light: Science and Applications**, Chapter 16, Jacob B. Khurgin and Rodney S. Tucker, editors, Optical Science and Engineering Series, CRC Press, Taylor and Francis Publishers, 2008, ISBN: 978-1420061512.
14. A.E. Willner and Z. Pan, "Optical Characterization, Diagnosis, and Performance Monitoring for PONs," **Passive Optical Network Technologies**, Cedric Lam, editor, Chapter 7, pp. 267-300, Academic Press, Nov. 2007, ISBN: 0-12-373853-9.
15. A.E. Willner and Z. Pan, "Optical Communications," **CRC Handbook of Photonics, 2<sup>nd</sup> Edition**, M.C. Gupta, editor, CRC Press, Florida, 2006, ISBN: 0-8493-3095-7.
16. A.E. Willner and M.C. Hauer, "PMD Emulation," **Polarization Mode Dispersion**, Chapter 16, Andrea Galtarossa and Curtis Menyuk, editors, Springer-Verlag Publishers, Berlin, 2005, ISBN: 0-387-23193-5.
17. A.E. Willner and R. Khosravani, "Photonic Networks," **Electrical Engineering Handbook**, 3<sup>rd</sup> Ed., CRC Press, R.C. Dorf, editor, Chapter 3.3, Florida, 2005, ISBN: 084932274X.
18. A.E. Willner and B. Hoanca, "Fixed and Tunable Management of Fiber Chromatic Dispersion," **Optical Fiber Telecommunications IVB**, Ivan P. Kaminow and Tingye Li, editors, Chapter 14, pp. 642-724, Academic Press, March 2002, ISBN: 0-12-395173-1.
19. Alan E. Willner, Reza Khosravani, and Saurabh Kumar, "Optical Packet and Burst Switching," **Optical Switching**, Tarek S. El-Bawab, editor, Chapter 13, Springer-Verlag Publishers, 2006, ISBN: 0-387-26141-9.
20. Alan E. Willner and Yong Xie, "Wavelength-Division-Multiplexed Fiber Optic Communication Networks," **Fiber Optics Handbook: Fiber, Devices, and Systems for Optical Communications**, M. Bass and E.W. Van Stryland, editors, pp. 13.1-13.31, McGraw-Hill, Inc., New York, New York, 2001, ISBN: 0-07-138623-8.
21. A.E. Willner and Y. Xie, "WDM Fiber Optic Communication Networks," **Handbook of Optics**, Second Edition, vol. IV, pp. 13.1-13.31, McGraw-Hill, Inc., New York, New York, 2001, ISBN: 0-07-136456-0.
22. A.E. Willner, "Optical Communications," **CRC Handbook of Photonics**, M.C. Gupta, editor, CRC Press, Boston, Feb. 1997, ISBN: 0-8493-8909-7.
23. A.E. Willner, "Optical Amplifier Cascades for Long-Distance and Ring-Based WDM Communications," **Emerging Optoelectronic Technologies**, A. Selvarajan and K. Shenai, editors, Institute of Electrical and Telecommunications Engineers, SPIE Press, May 1995.

## **TUTORIALS:**

1. Alan E. Willner, "Device Technologies for Orbital-Angular-Momentum Systems," **Invited Tutorial, Conference on Lasers and Electro-Optics (CLEO)**, San Jose, CA, May 2018 (Optical Society of America, Wash., D.C., 2018).

2. Alan E. Willner, "All-Optical Signal Processing Techniques for Flexible Networks," **Invited Tutorial, IEEE/OSA Conference on Optical Fiber Communications (OFC)**, San Diego, CA, Mar. 2017 (Optical Society of America, Washington, D.C., 2018).
3. Alan E. Willner, "Recent Advancements in Optical Orbital-Angular-Momentum Multiplexing," **Invited Tutorial, Latin American Optics and Photonics (LAOP)**, Cancun, Mexico, Nov. 2014.
4. Alan E. Willner, "OAM Multiplexing: Orbital Angular Momentum Multiplexing," **Invited Tutorial, 87th IEEE 802.15 WPAN Meeting**, Los Angeles, CA, Jan. 2014 (IEEE, Piscataway, NJ, 2014).
5. Alan E. Willner, "Spatial and Mode Division Multiplexing for Optical Communications," **Invited Tutorial, IEEE Military Communications Conference (MILCOM)**, San Diego, CA, Nov. 2013 (IEEE, Piscataway, NJ, 2013).
6. Alan E. Willner, "Optical Signal Processing," **Invited Tutorial, IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OM2G.5, Anaheim, CA, Mar. 2013 (Optical Society of America, Washington, D.C., 2013).
7. Alan E. Willner, "High-Speed Optical Signal Processing and Its Applications," **Invited Tutorial, IEEE/OSA/SPIE Asia Communications & Photonics Conference & Exhibition (ACP) 2010**, paper ThG1, Shanghai, China, Dec. 2010.
8. Alan E. Willner, "Integrated Photonics for Robust and Reconfigurable Communication Systems," **Invited Tutorial, Conference on Lasers and Electro-Optics Pacific Rim (CLEO PacRim)**, paper 1814, Seoul, Korea, Aug. 2007.
3. Alan E. Willner, "Physical-Layer Challenges in Future Optical Networks," **Invited Tutorial, 10th Opto-Electronics and Communications Conference (OECC)**, paper P1444, Seoul, Korea, July 2005.
4. Alan E. Willner, "Novel All-Optical Networks," **Invited Tutorial, Optical Society of America Annual Meeting**, Rochester, New York, Oct. 2004 (Optical Society of America, Wash., D.C., 2004).
5. Alan E. Willner, "Polarization Control and Monitoring," **Invited Tutorial, Conference on Optical Fiber Communications**, Paper WC1, Atlanta, Georgia, Feb. 2003 (Optical Society of America, Wash., D.C., 2003).
6. Alan E. Willner, "Multi-Channel WDM Fiber-Optic Systems," **Invited Tutorial, Optical Society of America Annual Meeting**, paper ThBB1, Dallas, Texas, Oct. 1994 (Optical Society of America, Wash., D.C., 1994).

### **SHORT COURSES:**

1. A.E. Willner, "Background Concepts of Optical Communication Systems," **Invited Short Course, Conference on Optical Fiber Communications**, Course 384, Los Angeles, CA, March 2012 (Optical Society of America, Wash., D.C., 2012). *Repeated in 2013, 2014, 2015, 2016, 2017, 2018.*
2. A.E. Willner, "Combating and Monitoring Degrading Effects in Non-Static and Reconfigurable Optical Systems," **Invited Short Course, Conference on Optical Fiber Communications**, San Diego, CA, Feb. 1999 (Optical Society of America, Wash., D.C., 1999). *Repeated in 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011.*
3. A.E. Willner, "Reconfigurable Multi-Wavelength Optical Systems and Networks," **Invited Short Course, European Conference on Optical Communications**, Munich, Germany, Sept. 2000. *Repeated in 2001.*
4. A.E. Willner, "Optical Fiber Communication Systems," **Invited Short Course, Conf. on Lasers and Electro-Optics (CLEO)**, Course 119, Baltimore, MD, June 1997 (Optical Society of America, Wash., D.C., 1997). *Repeated in 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2012.*

5. L. Lunardi and A.E. Willner, "40 Gbit/s Technologies," **Invited Short Course, IEEE Lasers and Electro-Optics Society Annual Meeting**, San Diego, CA, Nov. 2001 (IEEE, Piscataway, NJ, 2001). *Repeated in 2002, 2003.*
6. A.E. Willner, "Optical Fiber Communications: Basic Principles and Wavelength-Division-Multiplexing," **Invited Short Course, Society of Photo-Instrumentation Engineers (SPIE) Photonics East**, Nov., 1996, Boston, MA (SPIE, Bellingham, Wash., 1996).
7. A.E. Willner, "Multichannel Multiwavelength Fiber-Optic Communication Systems," **Invited Short Course, IEEE Military Communications Conference (MILCOM) San Diego, CA, Nov. 1995** (IEEE, Piscataway, NJ, 1995).
8. A.E. Willner, "Optical Telecommunication Systems Engineering," **Invited Short Course, Society of Photo-Instrumentation Engineers (SPIE) Photonics East '95**, SC36, Philadelphia, PA (SPIE, Bellingham, Wash., 1995).
9. A.E. Willner, "Wavelength Division Multiplexing," **UCLA Extension Course**, Univ. of California at Los Angeles, 1997. *Repeated in 1998, 1999, 2000, 2001, 2004, 2005.*
10. A.E. Willner, "Optical Communication Systems and Networks," **Short Course**, given to several companies, including: Boeing, Cisco, and Salomon Smith Barney.

### **REFEREED JOURNALS:**

1. Peicheng Liao, Changjing Bao, Arne Kordts, Maxim Karpov, Martin H. P. Pfeiffer, Lin Zhang, Yinwen Cao, Ahmed Almainan, Amirhossein Mohajerin-Ariaei, Moshe Tur, Martin M. Fejer, Tobias J. Kippenberg, and Alan E. Willner, "Pump-Linewidth-Tolerant Wavelength Multicasting using Soliton Kerr Frequency Combs," **Optics Letters**, vol. **42**, no. 16, pp. 3177-3180, 2017.  
*\* Paper selected as Editors' Pick: 4 out of 49 papers in that issue of Optics Letters. \**  
*\* #3 downloaded article in Optics Letters for a few days in Aug. 2017. \**
2. Joe Touch, Joseph Bannister, Stephen Suryaputra, and Alan E. Willner, "A Design for an Internet Router With a Digital Optical Data Plane," **Applied Sciences**, vol. **7**, no. 143, pp. 1-19, 2017.
3. Yongxiong Ren, Long Li, Guodong Xie, Yan Yan, Yinwen Cao, Hao Huang, Nisar Ahmed, Zhe Zhao, Peicheng Liao, Chongfu Zhang, Giuseppe Caire, Andreas F Molisch, Moshe Tur, Alan E Willner, "Line-of-sight Millimeter-wave Communications using Orbital Angular Momentum Multiplexing Combined with Conventional Spatial Multiplexing," **IEEE Transactions on Wireless Communications**, vol. **16**, no. 5, pp. 3151-3161, 2017.
4. Yinwen Cao, Morteza Ziyadi, Ahmed Almainan, Amirhossein Mohajerin-Ariaei, Peicheng Liao, Changjing Bao, Fatemeh Alishahi, Ahmad Fallahpour, Bishara Shamee, Asher J. Willner, Youichi Akasaka, Tadashi Ikeuchi, Steven Wilkinson, Carsten Langrock, Martin M. Fejer, Joseph Touch, Moshe Tur, and Alan E. Willner, "Pilot-Tone based Self-Homodyne Detection Using Optical Nonlinear Wave Mixing," **Optics Letters**, vol. **42**, no. 9, pp. 1840-1843, 2017.
5. Changjing Bao, Hossein Taheri, Lin Zhang, Andrey Matsko, Yan Yan, Peicheng Liao, Lute Maleki, Alan E Willner, "High-Order Dispersion in Kerr Comb Oscillators," **J. Opt. Soc. Am. B.**, vol. **34**, no. 4, pp. 715-725, 2017.  
*\* Paper selected as Editors' Pick: 4 out of 24 papers in that issue of JOSA B. \**
6. Zhe Wang, Yan Yan, Amir Arbabi, Guodong Xie, Cong Liu, Zhe Zhao, Yongxiong Ren, Long Li, Nisar Ahmed, Asher J. Willner, Ehsan Arbabi, Andrei Faraon, Robert Bock, Solyman Ashrafi, Moshe Tur, and

**REFEREED PAPERS: (CONTINUED)**

Alan E. Willner, "Orbital Angular Momentum Beams Generated by Passive Dielectric Phase Masks and Their Performance in a Communication Link," **Optics Letters**, vol. 42, no. 14, pp. 2746-2749, 2017.

*\* #4 downloaded article in Optics Letters for a few days in July 2017 \**

7. Peicheng Liao, Changjing Bao, Arne Kordts, Maxim Karpov, Martin H. P. Pfeiffer, Lin Zhang, Amirhossein Mohajerin-Ariaei, Yinwen Cao, Ahmed Almaiman, Morteza Ziyadi, Steven R. Wilkinson, Moshe Tur, Tobias J. Kippenberg, and Alan E. Willner, "Dependence of a Microresonator Kerr Frequency Comb on the Pump Linewidth," **Optics Letters**, vol. 42, no. 4, pp. 779-782, 2017.
8. Guodong Xie, Cong Liu, Long Li, Yongxiong Ren, Zhe Zhao, Yan Yan, Nisar Ahmed, Zhe Wang, Asher J. Willner, Changjing Bao, Yinwen Cao, Peicheng Liao, Morteza Ziyadi, Ahmed Almaiman, Solyman Ashrafi, Moshe Tur, and Alan E. Willner, "Spatial Light Structuring Using a Combination of Multiple Orthogonal Orbital Angular Momentum Beams with Complex Coefficients," **Optics Letters**, vol. 42, no. 5, pp. 991-994, 2017.

*\* #1 downloaded article in OSA subscription journals for a few days in February 2017. \**

9. Changjing Bao, Peicheng Liao, Arne Kordts, Lin Zhang, Maxim Karpov, Martin H. P. Pfeiffer, Yan Yan, Guodong Xie, Yinwen Cao, Yan Yan, Ahmed Almaiman, Guodong Xie, Amirhossein Mohajerin-Ariaei, Long Li, Morteza Ziyadi, Steven R. Wilkinson, Moshe Tur, Tobias J. Kippenberg, and Alan E. Willner, "Dual-Pump Generation of High-Coherence Primary Kerr Combs with Multiple Sub-Lines," **Optics Letters**, vol. 42, no. 3, pp. 595-598, 2017.

*\* A paper selected as Editors' Pick: 4 out of 71 papers in that issue of Optics Letters. \**

10. Guodong Xie, Long Li, Yongxiong Ren, Yan Yan, Nisar Ahmed, Zhe Zhao, Changjing Bao, Zhe Wang, Cong Liu, Haoqian Song, Runzhou Zhang, Kai Pang, Solyman Ashrafi, Moshe Tur, and Alan E. Willner, "Localization from the Unique Intensity Gradient of an Orbital-Angular-Momentum Beam," **Optics Letters**, vol. 42, no. 3, pp. 395-398, 2017.
11. Yongxiong Ren, Long Li, Zhe Wang, Seyedeh Mahsa Kamali, Ehsan Arbabi, Amir Arbabi, Zhe Zhao, Guodong Xie, Yinwen Cao, Nisar Ahmed, Yan Yan, Cong Liu, Asher Willner, Solyman Ashrafi, Moshe Tur, Andrei Faraon, and Alan E. Willner, "Orbital Angular Momentum-based Space Division Multiplexing for High-capacity Underwater Optical Communications," **Scientific Reports**, vol. 6, no. 33306, pp. 1-10, 2016.
12. Yan Yan, Long Li, Guodong Xie, Changjing Bao, Peicheng Liao, Hao Huang, Yongxiong Ren, Nisar Ahmed, Zhe Zhao, Zhe Wang, Nima Ashrafi, Solyman Ashrafi, Shilpa Talwar, Soji Sajuyigbe, Moshe Tur, Andreas F. Molisch, and Alan E. Willner, "Multipath Effects in Millimetre-Wave Wireless Communication using Orbital Angular Momentum Multiplexing," **Scientific Reports**, vol. 6, no. 33482, pp. 1-10, 2016.
13. Amirhossein Mohajerin-Ariaei, Morteza Ziyadi, Ahmed Almaiman, Yinwen Cao, Fatemeh Alishahi, Mohammad Reza Chitgarha, Ahmad Fallahpour, Jeng-Yuan Yang, Changjing Bao, Peicheng Liao, Bishara Shamee, Youichi Akasaka, Motoyoshi Sekiya, Joseph D. Touch, Moshe Tur, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Simultaneous All-Optical Phase Noise Mitigation and Automatically Locked Homodyne Reception of an Incoming QPSK Data Signal," **Optics Letters**, vol. 41, no. 20, pp. 4779-4782, 2016.
14. Ahmed Almaiman, Yinwen Cao, Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Peicheng Liao, Changjing Bao, Fatemeh Alishahi, Ahmad Fallahpour, Bishara Shamee, Nisar Ahmed, Asher J. Willner, Youichi Akasaka, Tadashi Ikeuchi, Shigehiro Takasaka, Ryuichi Sugizaki, Steven Wilkinson, Joseph D. Touch, Moshe Tur, and Alan E. Willner, "Experimental Demonstration of Phase-Sensitive Regeneration of

**REFEREED PAPERS: (CONTINUED)**

a Binary Phase-Shift Keying Channel Without a Phase-Locked Loop using Brillouin Amplification," **Optics Letters**, vol. **41**, no. 23, pp. 5434-5437, 2016.

15. Long Li, Guodong Xie, Yan Yan, Yongxiong Ren, Peicheng Liao, Zhe Zhao, Nisar Ahmed, Zhe Wang, Changjing Bao, Asher J. Willner, Solyman Ashrafi, Moshe Tur, and Alan E. Willner, "Power Loss Mitigation of Orbital-Angular-Momentum-Multiplexed Free-Space Optical Links using Nonzero Radial Index Laguerre–Gaussian Beams," **J. Opt. Soc. Am. B**, vol. **34**, no. 1, pp. 1-6, 2017.

*\* #2 downloaded article in fiber optics from Journal of the Optical Society of America B and Optics Letters between Aug. 2016 and Aug. 2017. \**

16. Guodong Xie, Zhe Zhao, Yan Yan, Long Li, Yongxiong Ren, Nisar Ahmed, Yinwen Cao, Asher J. Willner, Changjing Bao, Zhe Wang, Cong Liu, Morteza Ziyadi, Shilpa Talwar, Soji Sajuyigbe, Solyman Ashrafi, Moshe Tur, Andreas F. Molisch, and Alan E. Willner, "Demonstration of Tunable Steering and Multiplexing of Two 28 GHz Data-Carrying Orbital Angular Momentum Beams Using Antenna Array," **Scientific Reports**, vol. **6**, no. 37078, pp. 1-9, 2016.

17. Seo, Kyung Hee, Jae Seung Lee, and Alan E. Willner. "Time-dependent Analysis of Optical Receivers Using Receiver Eigenmodes," **Journal of The Optical Society of Korea**, vol. **17**, no. 5, pp. 641-641, 2016.

18. Changjing Bao, Peicheng Liao, Arne Kordts, Maxim Karpov, Martin H. P. Pfeiffer, Lin Zhang, Yan Yan, Guodong Xie, Yinwen Cao, Ahmed Almaiman, Morteza Ziyadi, Long Li, Zhe Zhao, Amirhossein Mohajerin-Ariaei, Steven R. Wilkinson, Moshe Tur, Martin M. Fejer, Tobias J. Kippenberg, and Alan E. Willner, "Demonstration of Optical Multicasting using Kerr Frequency Comb Lines," **Optics Letters**, vol. **41**, no. 16, pp. 3876-3879, 2016.

*\* #2 downloaded article in OSA subscription journals for a few days in August 2016. \**

19. Changjing Bao, Peicheng Liao, Lin Zhang, Yan Yan, Yinwen Cao, Guodong Xie, Amirhossein Mohajerin-Ariaei, Long Li, Morteza Ziyadi, Ahmed Almaiman, Lionel C. Kimerling, Jurgen Michel, and Alan E. Willner, "Effect of a Breather Soliton in Kerr Frequency Combs on Optical Communication Systems," **Optics Letters**, vol. **41**, no. 8, pp. 1764-1767, 2016.

20. Yongxiong Ren, Zhe Wang, Guodong Xie, Long Li, Asher J. Willner, Yinwen Cao, Zhe Zhao, Yan Yan, Nisar Ahmed, Nima Ashrafi, Solyman Ashrafi, Robert Bock, Moshe Tur, and Alan E. Willner, "Atmospheric Turbulence Mitigation in an OAM-Based MIMO Free-Space Optical Link using Spatial Diversity Combined with MIMO Equalization," **Optics Letters**, vol. **41**, no. 11, pp. 2406-2409, 2016.

21. Guodong Xie, Yongxiong Ren, Yan Yan, Hao Huang, Nisar Ahmed, Long Li, Zhe Zhao, Changjing Bao, Moshe Tur, Solyman Ashrafi, and Alan E. Willner, "Experimental Demonstration of a 200-Gbit/s Free-Space Optical Link by Multiplexing Laguerre–Gaussian Beams with Different Radial Indices," **Optics Letters**, vol. **41**, no.15, pp. 3447-3450, 2016.

22. Yinwen Cao, Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Ahmed Almaiman, Peicheng Liao, Changjing Bao, Fatemeh Alishahi, Ahmad Falahpour, Bishara Shamee, Jeng-yuan Yang, Youichi Akasaka, Motoyoshi Sekiya, Moshe Tur, Carsten Langrock, Martin Fejer, Joseph Touch, and Alan E. Willner, "Reconfigurable Optical Inter-Channel Interference Mitigation for Spectrally Overlapped QPSK Signals using Nonlinear Wave Mixing in Cascaded PPLN Waveguides," **Optics Letters**, vol. **41**, no. 14, pp. 3233-3236, 2016.

23. Ahmed Almaiman, Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Yinwen Cao, Mohammad Reza Chitgarha, Peicheng Liao, Changjing Bao, Bishara Shamee, Nisar Ahmed, Fatemeh Alishahi, Ahmad Fallahpour, Youichi Akasaka, Jeng-Yuan Yang, Motoyoshi Sekiya, Joseph D. Touch, Moshe Tur, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Experimental Demonstration of Tunable Homodyne

**REFEREED PAPERS: (CONTINUED)**

Detection of WDM and Dual-Polarization PSK Channels by Automatically Locking the Channels to a Local Pump Laser using Nonlinear Mixing," **Optics Letters**, vol. **41**, no. 12, pp. 2680-2683, 2016.

24. N. Ahmed, Z. Zhao, L. Li, H. Huang, M.P.J. Lavery, P. Liao, Y. Yan, Z. Wang, G. Xie, Y. Ren, A. Almaiman, A. J. Willner, S. Ashrafi, A. F. Molish, M. Tur, and A. E. Willner, "Mode-Division-Multiplexing of Multiple Bessel-Gaussian Beams Carrying Orbital-Angular-Momentum for Obstruction-Tolerant Free-Space Optical and Millimetre-Wave Communication Links," **Scientific Reports**, vol. **6**, no. 22082, pp. 1-10, 2016.
25. Yongxiong Ren, Zhe Wang, Peicheng Liao, Long Li, Guodong Xie, Hao Huang, Zhe Zhao, Yan Yan, Nisar Ahmed, Asher Willner, Martin P. J. Lavery, Nima Ashrafi, Solyman Ashrafi, Robert Bock, Moshe Tur, Ivan B. Djordjevic, Mark A. Neifeld, and Alan E. Willner, "Experimental Characterization of a 400 Gbit/s Orbital Angular Momentum Multiplexed Free-space Optical Link over 120-meters," **Optics Letters**, vol. **41**, no. 3, pp. 622-625, 2016.

*\* #2 downloaded article in OSA subscription journals for a few days in February 2016. \**

26. Yinwen Cao, Morteza Ziyadi, Youichi Akasaka, Amirhossein M. Ariaei, Jeng-Yuan Yang, Ahmed Almaiman, Peicheng Liao, Fatemeh Alishahi, Nisar Ahmed, Asher J. Willner, Shigehiro Takasaka, Ryuichi Sugizaki, Joseph Touch, Motoyoshi Sekiya, Moshe Tur, and Alan Willner, "All Optical Signal Level Swapping and Multilevel Amplitude Noise Mitigation based on Different Regions of Optical Parametric Amplification," **Optics Letters**, vol. **41**, no. 4, pp. 677-680, 2016.
27. Long Li, Guodong Xie, Yongxiong Ren, Nisar Ahmed, Hao Huang, Zhe Zhao, Peicheng Liao, Martin P.J. Lavery, Yan Yan, Changjing Bao, Zhe Wang, Asher J. Willner, Nima Ashrafi, Solyman Ashrafi, Moshe Tur, and Alan E. Willner, "Orbital-Angular-Momentum-Multiplexed Free-Space Optical Communication Link Using Transmitter Lenses," **Applied Optics**, vol. **55**, no. 8, pp. 2098-2103, 2016.
28. Martin P. J. Lavery, Hao Huang, Yongxiong Ren, Guodong Xie, and Alan E. Willner, "Demonstration of a 280-Gbit/s Free-space Space-Division-Multiplexing Communications Link Utilizing Plane-wave Spatial Multiplexing," **Optics Letters**, vol. **41**, no. 5, pp. 851-855, 2016.
29. Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Ahmed Almaiman, Yinwen Cao, Mohammad Reza Chitgarha, Loukas Paraschis, Moshe Tur, Carsten Langrock, Martin M. Fejer, Joseph D. Touch, and Alan E. Willner, "Optical Channel De-aggregation of Quadrature-Phase-Shift-Keying and Eight-Phase-Shift-Keying Data using Mapping onto Constellation Axes," **Optics Letters**, vol. **40**, no. 21, pp. 4899-4902, 2015.
30. Asher J. Willner, Yongxiong Ren, Guodong Xie, Zhe Zhao, Yinwen Cao, Long Li, Nisar Ahmed, Zhe Wang, Yan Yan, Peicheng Liao, Cong Liu, Mohammad Mirhosseini, Robert W. Boyd, Moshe Tur, and Alan E. Willner, "Experimental Demonstration of 20 Gbit/s Data Encoding and 2 ns Channel Hopping using Orbital Angular Momentum Modes," **Optics Letters**, vol. **40**, no. 18, pp. 5810-5813, 2015.

*\* Selected by editors as one of two papers for that month to appear in OSA Spotlight on Optics. \**

31. Yongxiong Ren, Zhe Wang, Guodong Xie, Long Li, Yinwen Cao, Cong Liu, Peicheng Liao, Yan Yan, Nisar Ahmed, Zhe Zhao, Asher Willner, Nima Ashrafi, Solyman Ashrafi, Roger D. Linquist, Robert Bock, Moshe Tur, Andreas F. Molisch and Alan E. Willner, "Free-space Optical Communications using Orbital-Angular-Momentum Multiplexing Combined with MIMO-based Spatial Multiplexing," **Optics Letters**, vol. **40**, no. 18, pp. 4190-4193, 2015.
32. Hao Huang, Giovanni Milione, Martin P. J. Lavery, Guodong Xie, Yongxiong Ren, Yinwen Cao, Nisar Ahmed, Thien An Nguyen, Daniel A. Nolan, Ming-Jun Li, Moshe Tur, Robert R. Alfano, and Alan E.



**REFEREED PAPERS: (CONTINUED)**

- Willner, "Mode Division Multiplexing using an Orbital Angular Momentum Mode Sorter and 4×4 MIMO-DSP over a Graded-Index Few-Mode Optical Fibre," **Scientific Reports**, vol. **5**, no. 14931, pp. 1-7, 2015.
33. Guodong Xie, Long Li, Yongxiong Ren, Hao Huang, Yan Yan, Nisar Ahmed, Zhe Zhao, Martin P.J. Lavery, Nima Ashrafi, Solyman Ashrafi, Robert Bock, Moshe Tur, Andreas F. Molisch, and Alan E. Willner, "Performance Metrics and Design Considerations for a Free-Space Optical Orbital-Angular-Momentum Multiplexed Communication Link," **Optica**, vol. **2**, no. 4, pp. 357-365, 2015.
  34. Amirhossein Mohajerin-Ariaei, Morteza Ziyadi, Mohammad Reza Chitgarha, Ahmed Almainan, Yinwen Cao, Bishara Shamee, Jeng-Yuan Yang, Youichi Akasaka, Motoyoshi Sekiya, Shigehiro Takasaka, Ryuichi Sugizaki, Joseph D. Touch, Moshe Tur, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Phase Noise Mitigation of QPSK Signal Utilizing Phase-Locked Multiplexing of Signal Harmonics and Amplitude Saturation," **Optics Letters**, vol. **40**, no. 14, pp. 3328-3331, 2015.
  35. Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Mohammad Reza Chitgarha, Salman Khaleghi, Ahmed Almainan, Yinwen Cao, Amin Abouzaid, Bishara Shamee, Moshe Tur, Loukas Paraschis, Carsten Langrock, Martin M. Fejer, Joseph D. Touch, and Alan E. Willner, "Tunable Radio Frequency Photonics Filter using a Comb-based Optical Tapped Delay Line with an Optical Nonlinear Multiplexer," **Optics Letters**, vol. **40**, no. 14, pp. 3284-3287, 2015.
  36. Yongxiong Ren, Guodong Xie, Hao Huang, Long Li, Nisar Ahmed, Yan Yan, Martin P. J. Lavery, Robert Bock, Moshe Tur, Mark A. Neifeld, Robert W. Boyd, Jeffrey H. Shapiro, and Alan E. Willner, "Turbulence Compensation of an Orbital-Angular-Momentum and Polarization Multiplexed Link using a Data-Carrying Beacon on a Separate Wavelength," **Optics Letters**, vol. **40**, no. 10, pp. 2249-2252, 2015.
  37. Ahmed Almainan, Mohammad Reza Chitgarha, Wajih Daab, Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Salman Khaleghi, Moshe Willner, Vijay Vusirikala, Xiaoxue Zhao, Dan Kilper, Loukas Paraschis, Atiyah Ahsan, Michael Wang, Keren Bergman, Moshe Tur, Joseph D. Touch, and Alan E. Willner, "Experimental Demonstration of Robustness and Accuracy of a DLI-based OSNR Monitor Under Changes in the Transmitter and Link for Different Modulation Formats and Baud Rates," **Optics Letters**, vol. **40**, no. 9, pp. 2012-2015, 2015.
  38. Guodong Xie, Yongxiong Ren, Hao Huang, Martin P.J. Lavery, Nisar Ahmed, Yan Yan, Changjing Bao, Long Li, Zhe Zhao, Yinwen Cao, Moshe Willner, Moshe Tur, Samuel J. Dolinar, Robert W Boyd, Jeffrey H. Shapiro, and Alan E. Willner, "Phase Correction for a Distorted Orbital Angular Momentum Beam using a Zernike Polynomials based Stochastic-Parallel-Gradient-Descent Algorithm," **Optics Letters**, vol. **40**, no. 7, pp. 1197-1200, 2015.
  39. Asher Voskoboinik, Alan E. Willner, and Moshe Tur, "Extending the Dynamic Range of Sweep-Free Brillouin Optical Time-Domain Analyzer," **IEEE/OSA Journal of Lightwave Technology**, vol. **33**, no. 14, pp. 2978-2985, 2015.
  40. Giovanni Milione, Martin P.J. Lavery, Hao Huang, Yongxiong Ren, Guodong Xie, Thien An Nguyen, Ebrahim Karimi, Lorenzo Marrucci, Daniel A. Nolan, Robert R. Alfano, and Alan E. Willner, "4 × 20 Gbit/s Mode Division Multiplexing Over Free Space using Vector Modes and a q-Plate Mode (De)Multiplexer," **Optics Letters**, vol. **40**, no. 9, pp. 1980-1983, 2015.
- \* #2 downloaded article in OSA subscription journals for the week of April 27, 2015. \*
- \* #9 cited article published in Optics Letters from 2015 to 2016. \*
41. Changjing Bao, Yan Yan, Lin Zhang, Yang Yue, Nisar Ahmed, Anuradha M. Agarwal, Lionel C. Kimerling, Jurgen Michel, and Alan E. Willner, "Increased Bandwidth with Fattened and Low Dispersion in a Horizontal Double-Slot Silicon Waveguide," **J. Opt. Soc. Am. B**, vol. **32**, no. 1, pp. 26-30, 2015.

**REFEREED PAPERS: (CONTINUED)**

*\* #1 downloaded article in OSA subscription journals for one week in January 2015. \**

*\* #7 cited article published in JOSA B from 2015 to 2016. \**

42. Morteza Ziyadi, Mohammad R. Chitgarha, Amirhossein M. Ariaei, Salman Khaleghi, Ahmed Almaiman, Yinwen Cao, Moshe Willner, Moshe Tur, Loukas Paraschis, Carsten Langrock, Martin Fejer, Joseph Touch, and Alan Willner, "Optical Nyquist Channel Generation using a Comb-based Tunable Optical Tapped-Delay-Line," **Optics Letters**, vol. **39**, no. 23, pp. 6585-6588, 2014.
43. Yongxiong Ren, Guodong Xie, Hao Huang, Nisar Ahmed, Yan Yan, Long Li, Changjing Bao, Martin P. J. Lavery, Moshe Tur, Mark A. Neifeld, Robert W. Boyd, Jeffrey H. Shapiro, and Alan Willner, "Adaptive Optics-based Simultaneous Pre-and Post-turbulence Compensation of Multiple Orbital-Angular-Momentum Beams in a Bidirectional Free-space Optical Link," **Optica**, vol. **1**, no. 6, pp. 376-382, 2014.
44. Yan Yan, Guodong Xie, Martin P.J. Lavery, Hao Huang, Nisar Ahemd, Changjing Bao, Yongxiong Ren, Yinwen Cao, Long Li, Andreas F. Molisch, Moshe Tur, Miles J. Padgett, and Alan E. Willner, "High-Capacity Millimetre-wave Communications with Orbital-Angular-Momentum Multiplexing," **Nature Communications**, vol. **5**, pp. 1-9, 2014.

*\* #2 most read Nature Communications article in late September 2014. \**

45. Changjing Bao, Lin Zhang, Andrey Matsko, Yan Yan, Zhe Zhao, Guodong Xie, Anuradha M. Agarwal, Lionel C. Kimerling, Jurgen Michel, Lute Maleki, and Alan E. Willner, "Nonlinear Conversion Efficiency in Kerr Frequency Comb Generation," **Optics Letters**, vol. **39**, no. 21, pp. 6126-6129, 2014.
46. Mohammad Reza Chitgarha, Morteza Ziyadi, Salman Khaleghi, Amirhossein Mohajerin-Ariaei, Ahmed Almaiman, Joseph D. Touch, Moshe Tur, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Reconfigurable 2D optical tapped-delay-line to perform correlation on images," **Optics Letters**, vol. **39**, no. 23, pp. 6573-6576, 2014.
47. Mohammad Reza Chitgarha, Salman Khaleghi, Morteza Ziyadi, Ahmed Almaiman, Amirhossein Mohajerin-Ariaei, Ori Gerstel, Loukas Paraschis, Carsten Langrock, Martin M. Fejer, Joseph Touch, and Alan E. Willner, "Demonstration of Tunable Optical Generation of Higher-order Modulation Formats using Nonlinearities and Coherent Frequency Comb," **Optics Letters**, vol. **39**, no. 16, pp. 4915-4918, 2014.

*\* Selected by editors as one of two papers for that month to appear in OSA Spotlight on Optics. \**

48. Hao Huang, Yinwen Cao, Guodong Xie, Yongxiong Ren, Yan Yan, Changjing Bao, Nisar Ahmed, Mark A. Neifeld, Samuel J. Dolinar, and Alan E. Willner, "Crosstalk Mitigation in a Free-space Orbital Angular Momentum Multiplexed Communication Link using 4x4 MIMO Equalization," **Optics Letters**, vol. **39**, no. 16, pp. 4360-4363, 2014.
49. Mohammad Reza Chitgarha, Salman Khaleghi, Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Ahmed Almaiman, Wajih Daab, Devora Rogawski, Moshe Tur, Joseph D. Touch, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Demonstration of All-optical Phase Noise Suppression Scheme using Optical Nonlinearity and Conversion/Dispersion Delay," **Optics Letters**, vol. **39**, no. 10, pp. 2928-2931, 2014.
50. Yongxiong Ren, Guodong Xie, Hao Huang, Changjing Bao, Yan Yan, Nisar Ahmed, Martin P. J. Lavery, Baris I. Erkmen, Samuel Dolinar, Moshe Tur, Mark A. Neifeld, Miles J. Padgett, Robert W. Boyd, Jeffrey H. Shapiro, and Alan E. Willner, "Adaptive Optics Compensation of Multiple Orbital Angular Momentum Beams Propagating Through Emulated Atmospheric Turbulence," **Optics Letters**, vol. **39**, no. 10, pp. 2845-2848, 2014.

*\* #2 downloaded Optics Letters article in June 2014. \**

**REFEREED PAPERS: (CONTINUED)**

51. Hao Huang, Yongxiong Ren, Guodong Xie, Yan Yan, Yang Yue, Nisar Ahmed, Martin P. J. Lavery, Miles J. Padgett, Sam Dolinar, Moshe Tur, and Alan E. Willner, "Tunable Orbital Angular Momentum Mode Filter Based on Optical Geometric Transformation," **Optics Letters**, vol. **39**, no. 6, pp. 1689-1692 (2014).
  52. Mohammad Reza Chitgarha, Salman Khaleghi, Wajih Daab, Ahmed Almainan, Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Devora Rogawski, Moshe Tur, Joseph D. Touch, Vijay Vusirikala, Wendy Zhao, and Alan E. Willner, "Demonstration of In-service Wavelength Division Multiplexing Optical-signal-to-noise Ratio Performance Monitoring and Operating Guidelines for Coherent Data Channels With Different Modulation Formats and Various Baud Rates," **Optics Letters**, vol. **39**, no. 6, pp. 1605-1608, 2014.
  53. Salman Khaleghi, Mohammad Reza Chitgarha, Omer F. Yilmaz, Moshe Tur, Michael W. Haney, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Experimental Characterization of Phase Tuning using Fine Wavelength Offsets in a Tunable Complex-coefficient Optical Tapped-delay-line," **Optics Letters**, vol. **39**, no. 4, pp. 735-738, 2014.
  54. Salman Khaleghi, Mohammad Reza Chitgarha, Omer F. Yilmaz, Moshe Tur, Michael W. Haney, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Experimental Characterization of Phase Tuning using Fine Wavelength Offsets in a Tunable Complex-coefficient Optical Tapped-delay-line," **Optics Letters**, vol. **39**, no. 4, pp. 735-738, 2014.
  55. Kyung Hee Seo, Jae Seung Lee, and Alan E. Willner, "Time-dependent Analysis of Optical Receivers using Receiver Eigenmodes," **J. Opt. Soc. Korea**, vol. **17**, no. 4, pp. 305-311, 2013.
  56. Hao Huang, Guodong Xie, Yan Yan, Nisar Ahmed, Yongxiong Ren, Yang Yue, Dvora Rogawski, Moshe J. Willner, Baris I. Erkmen, Kevin M. Birnbaum, Samuel J. Dolinar, Martin P. J. Lavery, Miles J. Padgett, Moshe Tur, and Alan E. Willner, "100 Tbit/s Free-space Data Link Enabled by Three-dimensional Multiplexing of Orbital Angular Momentum, Polarization, and Wavelength," **Optics Letters**, vol. **39**, no. 2, pp. 197-200, 2014.
- \* #2 cited article published in Optics Letters from 2015 to 2016. \**
57. Moshe J. Willner, Hao Huang, Nisar Ahmed, Guodong Xie, Yongxiong Ren, Yan Yan, Martin P. J. Lavery, Miles J. Padgett, Moshe Tur, and Alan E. Willner, "Reconfigurable Orbital Angular Momentum and Polarization Manipulation of 100-Gbit/s QPSK Data Channels," **Optics Letters**, vol. **38**, no. 24, pp. 5240-5243, 2013.
  58. Deng Pan, Changjian Ke, Songnian Fu, Yaping Liu, Deming Liu, and Alan E. Willner, "All-optical Spectral Linewidth Reduction of Lasers for Coherent Optical Communication," **Optics Letters**, vol. **38**, no. 24, pp. 5220-5223, 2013.
  59. Xiaoyan Zhou, Lin Zhang, Andrea M. Armani, Raymond G. Beausoleil, Alan E. Willner, and Wei Pang, "Power Enhancement and Phase regimes in Embedded Microring Resonators in Analogy With Electromagnetically Induced Transparency," **Optics Express**, vol. **21**, no. 17, pp. 20179-20186, 2013.
  60. Hao Huang, Yang Yue, Yan Yan, Nisar Ahmed, Yongxiong Ren, Moshe Tur, and Alan E. Willner, "Liquid-crystal-on-silicon-based Optical Add/Drop Multiplexer for Orbital-Angular-Momentum Multiplexed Optical Links," **Optics Letters**, vol. **38**, no. 23, pp. 5142-5145, 2013.
  61. Salman Khaleghi, Mohammad Reza Chitgarha, Morteza Ziyadi, Wajih Daab, Amirhossein Mohajerin-Ariaei, Dvora Rogawski, Joseph D. Touch, Moshe Tur, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Simultaneous and Independent Processing of Multiple Input WDM data Signals using a Tunable Optical Tapped Delay Line," **Optics Letters**, vol. **38**, no. 21, pp. 4273-4276, 2013.

**REFEREED PAPERS: (CONTINUED)**

62. Mohammad Reza Chitgarha, Salman Khaleghi, Zahra Bakhtiari, Morteza Ziyadi, Ori Gerstel, Loukas Paraschis, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Demonstration of Reconfigurable Optical Generation of Higher-order Modulation Formats up to 64-QAM using Optical Nonlinearity," **Optics Letters**, vol. **38**, no. 17, pp. 3350-3353, 2013.
63. Yan Yan, Yang Yue, Hao Huang, Yongxiong Ren, Nisar Ahmed, Moshe Tur, Samuel Dolinar, and Alan Willner, "Multicasting in a Spatial Division Multiplexing System Based on Optical Orbital Angular Momentum," **Optics Letters**, vol. **38**, no. 19, pp.3930-3933, 2013.
64. Yongxiong Ren, Hao Huang, Guodong Xie, Nisar Ahmed, Yan Yan, Baris I. Erkmen, Nivedita Chandrasekaran, Martin P. J. Lavery, Nicholas K. Steinhoff, Moshe Tur, Samuel Dolinar, Mark Neifeld, Miles J. Padgett, Robert W. Boyd, Jeffrey H. Shapiro, and Alan E. Willner, "Atmospheric Turbulence Effects on the Performance of a Free Space Optical Link Employing Orbital Angular Momentum Multiplexing," **Optics Letters**, vol. **38**, no. 20, pp.4062-4065, 2013.
65. Yang Yue, Hao Huang, Nisar Ahmed, Yan Yan, Yongxiong Ren, Guodong Xie, Dvora Rogawski, Moshe Tur, and Alan E. Willner, "Reconfigurable Switching of Orbital-angular-momentum-based Free-space Data Channels," **Optics Letters**, vol. **38**, no. 23, pp.5118-5121, 2013.
66. Nenad Bozinovic, Yang Yue, Yongxiong Ren, Moshe Tur, Poul Kristensen, Hao Huang, Alan E. Willner, and Siddharth Ramachandran, "Terabit-Scale Orbital Angular Momentum Mode Division Multiplexing in Fibers," **Science**, vol. **340**, no. 6140, pp. 1545-1548, 2013.
67. Mohammad Reza Chitgarha, Salman Khaleghi, Omer F. Yilmaz, Moshe Tur, Michael W. Haney, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Coherent Correlator and Equalizer using a Reconfigurable All-Optical Tapped Delay Line," **Optics Letters**, vol. **38**, no. 13, pp. 2271-2273, 2013.
68. Hao Huang, Yongxiong Ren, Yan Yan, Nisar Ahmed, Yang Yue, Amanda Bozovich, Baris I. Erkmen, Kevin Birnbaum, Sam Dolinar, Moshe Tur, and Alan E. Willner, "Phase-Shift Interference-Based Wavefront Characterization for Orbital Angular Momentum Modes," **Optics Letters**, vol. **38**, no. 13, pp. 2348-2350, 2013.
69. Jian Wang, Hongyan Fu, Dongyu Geng, and Alan E. Willner, "Single-PPLN-Assisted Wavelength-/Time-Selective Switching/Dropping/Swapping for 100-GHz-Spaced WDM Signals," **Optics Express**, Special Issue on European Conference on Optical Communications, vol. **21**, no. 3, pp. 3756-3774, 2013.
70. Salman Khaleghi, Mohammad Reza Chitgarha, Omer F. Yilmaz, Moshe Tur, Michael W. Haney, Carsten Langrock, Martin F. Fejer, and Alan E. Willner, "Reconfigurable Optical Quadrature Amplitude Modulation Converter/Encoder using a Tunable Complex Coefficient Optical Tapped Delay Line," **Optics Letters**, vol. **38**, no. 10, pp. 1600-1602, 2013.
71. Zhe Zhao, Jian Wang, Shuhui Li, and Alan E. Willner, "Metamaterials-Based Broadband Generation of Orbital Angular Momentum Carrying Vector Beams," **Optics Letters**, vol. **38**, no. 6, pp. 932-934, 2013.
72. Jae Seung Lee and Alan E. Willner, "Analysis of Gaussian Optical Receivers," **IEEE/OSA Journal of Lightwave Technology**, vol. **31**, no. 16, pp. 2987-2993, 2013.
73. Jian Wang, Jeng-Yuan Yang, Hao Huang, and Alan E. Willner, "Three-Input Optical Addition and Subtraction of Quaternary Base Numbers," **Optics Express**, vol. **21**, no. 1, pp. 488-499, 2013.
74. Martin P. J. Lavery, David J. Robertson, Anna Sponselli, Johannes Courtial, Nicholas K. Steinhoff, Glenn A. Tyler, Alan E. Willner, and Miles J. Padgett, "Efficient Measurement of an Optical Orbital-Angular-Momentum Spectrum Comprising More Than 50 States," **New J. Physics**, vol. **15**, no. 013024, pp.1-7, 2013.

**REFEREED PAPERS: (CONTINUED)**

75. H. Huang, S. R. Nuccio, Y. Yue, J.-Y. Yang, Y. Ren, C. Wei, G. Yu, R. Dinu, D. Parekh, C. J. Chang-Hasnain, and A. E. Willner, "Broadband Modulation Performance of 100-GHz EO Polymer MZMs," **IEEE/OSA Journal of Lightwave Technology**, vol. **30**, no. 23, pp. 3647-3652, 2012.
76. Jian Wang, Jeng-Yuan Yang, Xiaoxia Wu, and Alan E. Willner, "Optical Hexadecimal Coding/Decoding using 16-QAM Signal and FWM in HNLFs," **IEEE/OSA Journal of Lightwave Technology**, vol. **30**, no. 17, pp. 2890-2900, 2012.
77. Jian Wang, Jeng-Yuan Yang, Irfan M. Fazal, Nisar Ahmed, Yan Yan, Hao Huang, Yongxiong Ren, Yang Yue, Samuel Dolinar, Moshe Tur and Alan E. Willner, "Terabit Free-Space Data Transmission Employing Orbital Angular Momentum Multiplexing," **Nature Photonics**, vol. **6**, pp. 488-496, 2012.
- \* *Selected by Nature Photonics editors for press release, interview, and News & Views article.* \*
- \* *#1 downloaded Nature Photonics article in late June and early July 2012.* \*
78. Irfan M. Fazal, Nisar Ahmed, Jian Wang, Jeng-Yuan Yang, Yan Yan, Bishara Shamee, Hao Huang, Yang Yue, Sam Dolinar, Moshe Tur, and Alan E. Willner, "2-Tbit/s Free-Space Data Transmission on Two Orthogonal Orbital-Angular-Momentum Beams Each Carrying 25 WDM Channels," **Optics Letters**, vol. **37**, no. 22, pp. 4753-4755, 2012.
79. S. Khaleghi, O.F. Yilmaz, M.R. Chitgarha, M. Tur, N. Ahmed, S.R. Nuccio, I.M. Fazal, X. Wu, M.W. Haney, C. Langrock, M.M. Fejer, and A.E. Willner, "High-Speed Correlation and Equalization using a Continuously Tunable All-Optical Tapped Delay Line," **IEEE Photonics Journal**, vol. **4**, no. 4, pp. 1220-1235, 2012.
80. Salman Khaleghi, Mohammad Reza Chitgarha, Omer F. Yilmaz, Moshe Tur, Michael W. Haney, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Experimental Performance of a Fully Tunable Complex-Coefficient Optical FIR Filter using Wavelength Conversion and Chromatic Dispersion," **Optics Letters**, vol. **37**, no. 16, pp. 3420-3422, 2012.
81. Yang Yue, Lin Zhang, Yan Yan, Nisar Ahmed, Jeng-Yuan Yang, Hao Huang, Yongxiong Ren, Sam Dolinar, Moshe Tur, and Alan E. Willner, "Octave-Spanning Supercontinuum Generation of Vortices in an As<sub>2</sub>S<sub>3</sub> Ring Photonic Crystal Fiber," **Optics Letters**, vol. **37**, no. 11, pp. 1889-1891, 2012.
82. Yang Yue, Yan Yan, Nisar Ahmed, Jeng-Yuan Yang, Lin Zhang, Yongxiong Ren, Hao Huang, Kevin M. Birnbaum, Baris I. Erkmen, Sam Dolinar, Moshe Tur, and Alan E. Willner, "Mode Properties and Propagation Effects of Optical Orbital Angular Momentum (OAM) Modes in a Ring Fiber," **IEEE Photonics Journal**, vol. **4**, no. 2, pp. 535-543, 2012.
83. Yan Yan, Yang Yue, Hao Huang, Jeng-Yuan Yang, Mohammad R. Chitgarha, Nisar Ahmed, Moshe Tur, Samuel J. Dolinar, and Alan E. Willner, "Efficient Generation and Multiplexing of Optical Orbital Angular Momentum Modes in a Ring Fiber by using Multiple Coherent Inputs," **Optics Letters**, vol. **37**, no. 17, pp. 3645-3647, 2012.
84. Mohammad Reza Chitgarha, Salman Khaleghi, Omer F. Yilmaz, Moshe Tur, Michael W. Haney, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Demonstration of Channel-Spacing-Tunable Demultiplexing of Optical Orthogonal-Frequency-Division-Multiplexed Subcarriers Utilizing Reconfigurable All-Optical Discrete Fourier Transform," **Optics Letters**, vol. **37**, no. 19, pp. 3975-3977, 2012.
85. Jian Wang, Scott R. Nuccio, Jeng-Yuan Yang, Xiaoxia Wu, Antonella Bogoni, and Alan E. Willner, "High-Speed Addition/Subtraction/Complement/Doubling of Quaternary Numbers using Optical Nonlinearities and DQPSK Signals," **Optics Letters**, vol. **37**, no. 7, pp. 1139-1141, 2012.

**REFEREED PAPERS: (CONTINUED)**

*\* #6 downloaded article in OSA subscription journals on Optics in Computing in June 2016. \**

86. Antonella Bogoni, Xiaoxia Wu, Scott R. Nuccio, and Alan E. Willner, "640 Gb/s All-Optical Regenerator Based on a Periodically Poled Lithium Niobate Waveguide," **IEEE/OSA Journal of Lightwave Technology**, vol. **30**, no. 12, pp. 1829-1834, 2012.
87. L. Zhang, Q. Lin, Y. Yue, Y. Yan, R. G. Beausoleil, A. Agarwal, L. C. Kimerling, J. Michel, and A. E. Willner, "On-Chip Octave-Spanning Supercontinuum in Nanostructured Silicon Waveguides using Ultralow Pulse Energy," **IEEE Journal of Selected Topics in Quantum Electronics**, Special Issue on Quantum and Nanoscale Photonics, vol. **18**, no. 6, pp. 1799-1806, Nov/Dec 2012.
88. L. Zhang, Q. Lin, Y. Yue, Y. Yan, R. G. Beausoleil, and A. E. Willner, "Silicon Waveguide with Four Zero-Dispersion Wavelengths and its Application in On-Chip Octave-Spanning Supercontinuum Generation," **Optics Express**, vol. **20**, no. 2, pp. 1685-1690, 2012.
89. Omer F. Yilmaz, Lior Yaron, Salman Khaleghi, M. Reza Chitgarha, Moshe Tur, and Alan Willner, "True Time Delays using Conversion/Dispersion with Flat Magnitude Response for Wideband Analog RF Signals," **Optics Express**, vol. **20**, no. 8, pp. 8219-8227, 2012.
90. Yan Yan, Lin Zhang, Jian Wang, Jeng-Yuan Yang, Irfan M. Fazal, Nisar Ahmed, Alan E. Willner, and Samuel J. Dolinar, "Fiber Structure to Convert a Gaussian Beam to Higher-Order Optical Orbital Angular Momentum Modes," **Optics Letters**, vol. **37**, no. 16, pp. 3294-3296, 2012.

*\* #8 most downloaded OSA journal article in Optical comms. and fiber optics from 2013-2014. \**

91. Weijian Yang, James Ferrara, Karen Grutter, Anthony Yeh, Chris Chase, Yang Yue, Alan E. Willner, Ming C. Wu, and Connie J. Chang-Hasnain, "Low Loss Hollow-Core Waveguide on a Silicon Substrate," **Nanophotonics**, vol. **1**, no. 1, pp. 23-29, 2012.
92. Hao Huang, Jeng-Yuan Yang, Xiaoxia Wu, Salman Khaleghi, Morteza Ziyadi, Moshe Tur, Carsten Langrock, Martin M. Fejer, Loukas Paraschis, and Alan E. Willner, "Simultaneous Subchannel Data Updating for Multiple Channels of 16-Quadrature Amplitude Modulation Signals using a Single Periodically Poled Lithium Niobate Waveguide," **Optics Letters**, vol. **37**, pp. 4365-4367, 2012.
93. Yang Yue, Lin Zhang, Xue Wang, Hao Huang, Weijian Yang, James Ferrara, Vadim Karagodsky, Christopher Chase, Moshe Tur, Connie J. Chang-Hasnain, Alan E. Willner, "Three-Dimensional Chirped High-contrast Grating Hollow-Core Waveguide," **IEEE Photonics Journal**, vol. **4**, no. 5, pp. 1372-1380, 2012.
94. Yang Yue, Hao Huang, Lin Zhang, Jian Wang, Jeng-Yuan Yang, Omer F. Yilmaz, Jacob S. Levy, Michal Lipson, and Alan E. Willner, "UWB Monocycle Pulse Generation using Two-Photon Absorption in a Silicon Waveguide," **Optics Letters**, vol. **37**, pp. 551-553, 2012.
95. Yang Yue, Lin Zhang, Hao Huang, Raymond G. Beausoleil, and Alan E. Willner, "Silicon-on-Nitride Waveguide With Ultralow Dispersion Over an Octave-Spanning Mid-Infrared Wavelength Range," **IEEE Photonics Journal**, vol. **4**, no. 1, pp. 126-132, 2012.
96. Leon Yao, Hao Huang, James Chen, Ernie Tan, and Alan Willner, "A Novel Scheme for Achieving Quasi-Uniform Rate Polarization Scrambling at 752 krad/s," **Optics Express**, vol. **20**, pp. 1691-1699, 2012.
97. Antonella Bogoni, Xiaoxia Wu, Scott R. Nuccio, Jian Wang, Zahra Bakhtiari, Alan E. Willner, "Photonic 640 Gb/s Reconfigurable OTDM Add-Drop Multiplexer Based on Pump Depletion in a single PPLN Waveguide," **IEEE Journal of Selected Topics in Quantum Electronics**, vol. **18**, no. 2, pp. 709-716, March/April 2012.

**REFEREED PAPERS: (CONTINUED)**

98. Asher Voskoboinik, Dvora Rogawski, Hao Huang, Yair Peled, Alan E. Willner, and Moshe Tur, "Frequency-Domain Analysis of Dynamically Applied Strain using Sweep-Free Brillouin Time-Domain Analyzer and Sloped-Assisted FBG Sensing," **Optics Express**, vol. **20**, no. 26, pp. B581-B586, 2012.
99. H. Huang, Y. Yue, L. Zhang, C. Chase, D. Parekh, F. Sedgwick, M.C. Wu, M. C.J. Chang-Hasnain, M. Tur, and A.E. Willner, "Analog Signal Transmission in a High-Contrast-Gratings-Based Hollow-Core-Waveguide," **IEEE/OSA Journal of Lightwave Technology**, vol.**30**, no.23, pp.3640-3646, 2012.
100. Yan Yan, Jian Wang, Lin Zhang, Jeng-Yuan Yang, Irfan M. Fazal, Nisar Ahmed, Bishara Shamee, Alan E. Willner, Kevin Birnbaum, and Sam Dolinar, "Fiber Coupler for Generating Orbital Angular Momentum Modes," **Optics Letters**, vol. **36**, no. 21, pp. 4269-4271, 2011.
101. Yan Yan, Lin Zhang, and Alan Willner, "Nondegenerate Mirrorless Oscillation in Silicon Waveguide," **Optics Letters**, vol. **36**, pp. 4113-4115, 2011.
102. Asher Voskoboinik, Omer F. Yilmaz, Alan W. Willner, and Moshe Tur, "Sweep-free Distributed Brillouin Time-Domain Analyzer (SF-BOTDA)," **Optics Express**, vol. **19**, no. 26, pp. B842-B847, 2011.
103. Hao Huang, Xiaoxia Wu, Jian Wang, Jeng-Yuan Yang, Asher Voskoboinik, and Alan E. Willner, "Nondegenerate Four-Wave-Mixing-Based Radio Frequency Up/Down Conversion using a Parametric Loop Mirror," **Optics Letters**, vol. **36**, pp. 4593-4595, 2011.
104. Ali Fard, Jeng-Yuan Yang, Brandon Buckley, Jian Wang, Mohammad R. Chitgarha, Lin Zhang, Alan E. Willner, and Bahram Jalali, "Time-Stretch Oscilloscope with Dual-Channel Differential Detection Front End for Monitoring of 100 Gb/s Return-to-Zero Differential Quadrature Phase-Shift Keying Data," **Optics Letters**, vol. **36**, no. 19, pp. 3804–3806, 2011.
105. Jian Wang, Hao Huang, Xue Wang, Jeng-Yuan Yang, and Alan E. Willner, "Reconfigurable 2.3-Tbit/s DQPSK Simultaneous Add/Drop, Data Exchange and Equalization using Double-Pass LCoS and Bidirectional HNLFF," **Optics Express**, vol. **19**, no. 19, pp. 18246–18252. 2011.
106. Lin Zhang, Yan Yan, Yang Yue, Qiang Lin, Oskar Painter, Raymond G. Beausoleil, Alan E. Willner, "On-Chip Two-Octave Supercontinuum Generation by Enhancing Self-Steepening of Optical Pulses," **Optics Express**, vol. **19**, pp. 11584-11590, 2011.
107. Asher Voskoboinik, Jian Wang, Bishara Shamee, Scott R. Nuccio, Lin Zhang, Mohammadreza Chitgarha, Alan E. Willner, and Moshe Tur, "SBS-Based Fiber Optical Sensing using Frequency-Domain Simultaneous Tone Interrogation," **IEEE/OSA Journal of Lightwave Technology**, vol. **29**, pp. 1729-1735, 2011.
108. Antonella Bogoni, Xiaoxia Wu, Scott R. Nuccio, Nisar Ahmed, and Alan E. Willner, "160 Gbit/s Binary-to-Quaternary Amplitude Shift Keying Encoding in the Optical Domain," **Optics Letters**, vol. **36**, pp. 1978-1980, 2011.
109. Jeng-Yuan Yang, Mohammad R. Chitgarha, Lin Zhang, Jian Wang, Loukas Paraschis, and Alan E. Willner, "Optical Monitoring of PMD Accumulation on a Pol-MUX Phase-Modulated Signal using Degree-of-Polarization Measurements," **Optics Letters**, vol. **36**, pp. 3215-3217, 2011.
110. Omer F. Yilmaz, J. Wang, S. Khaleghi, X. Wang, S. Nuccio, X. Wu, and A. E. Willner, "Pre-Conversion Phase Modulation of Input Differential Phase-Shift-Keying Signals for Wavelength Conversion and Multicasting Applications using Phase-Modulated Pumps," **Optics Letters**, vol. **36**, pp.731-733, 2011.

**REFEREED PAPERS: (CONTINUED)**

111. Jian Wang, Hao Huang, Xue Wang, Jeng-Yuan Yang, and Alan E. Willner, "Multi-Channel 100-Gbit/s DQPSK Data Exchange using Bidirectional Degenerate Four-Wave Mixing," **Optics Express**, vol. **19**, pp. 3332-3338, 2011.
112. Lin Zhang, Yang Yue, Raymond G. Beausoleil, and Alan E. Willner, "Analysis and Engineering of Chromatic Dispersion in Silicon Waveguide Bends and Ring Resonators," **Optics Express**, vol. **19**, pp. 8102-8107, 2011.
113. H. Chaouch, E. Parsons, A. Tervonen, M. Mattila, W. Weiershausen, T. von Lerber, S. Honkanen, J.-Y. Yang, A.E. Willner, and F. Küppers, "All-optical processing of RZ-DPSK signals using counter-propagating pulses in a saturated SOA," **Optics Communications**, vol. 284, pp. 2576-2580, 2011.
114. Xiaoxia Wu, Jeffrey A. Jargon, Loukas Paraschis, and Alan E. Willner, "ANN-Based Optical Performance Monitoring of QPSK Signals using Parameters Derived from Balanced-Detected Asynchronous Diagrams," **IEEE Photonics Technology Letters**, vol. **23**, pp. 248-250, 2011.
115. Jian Wang, Zahra Bakhtiari, Omer F. Yilmaz, Scott Nuccio, Xiaoxia Wu, and Alan E. Willner, "10 Gbit/s Tributary Channel Exchange of 160 Gbit/s Signals using Periodically Poled Lithium Niobate," **Optics Letters**, vol. **36**, pp. 630-632, 2011.
116. Caroline P. Lai, Jeng-Yuan Yang, Ajay S. Garg, Michael S. Wang, Mohammad R. Chitgarha, Alan E. Willner, Keren Bergman, "Experimental Demonstration of Packet-Rate 10-Gb/s OOK OSNR Monitoring for QoS-Aware Cross-Layer Packet Protection," **Optics Express**, vol. **19**, pp. 14871-14882, 2011.
117. S.R. Nuccio, O.F. Yilmaz, X. Wang, H. Huang, J. Wang, X. Wu, and A.E. Willner, "Higher-Order Dispersion Compensation to Enable a 3.6- $\mu$ s Wavelength Transparent Delay of a 100-Gb/s DQPSK Signal," **Optics Letters**, vol. **35**, pp. 2985-2987, 2010.
118. Yang Yue, Lin Zhang, Jian Wang, Raymond G. Beausoleil, and Alan E. Willner, "Highly Efficient Nonlinearity-Reduction in Silicon-on-Insulator Waveguide using Vertical Slots," **Optics Express**, vol. **18**, pp. 22061-22066, 2010.
119. Jian Wang, Scott R. Nuccio, Hao Huang, Xue Wang, Jeng-Yuan Yang, and Alan E. Willner, "Optical Data Exchange of 100-Gbit/s DQPSK Signals," **Optics Express**, vol. **18**, pp. 23740-23745, 2010.
120. L. Zhang, Y. Yue, R.G. Beausoleil, and A.E. Willner, "Flattened Dispersion in Silicon Slot Waveguides," **Optics Express**, vol. **18**, pp. 20529-20534, 2010.
121. Jian Wang, Zahra Bakhtiari, Scott R. Nuccio, Omer F. Yilmaz, Xiaoxia Wu, and Alan E. Willner, "Phase-Transparent Optical Data Exchange of 40-Gbit/s Differential Phase-Shift Keying Signals," **Optics Letters**, vol. **35**, pp. 2979-2981, 2010.
122. Devang Parekh, Bo Zhang, Xiaoxue Zhao, Yang Yue, Werner Hofmann, Markus C. Amann, Alan Willner, and Connie J. Chang-Hasnain, "Long Distance Single-mode Fiber Transmission of Multimode VCSELs by Injection Locking," **Optics Express**, vol. **18**, pp. 20552-20557, 2010.
123. Xiaoxia Wu, Jian Wang, Omer F. Yilmaz, Scott R. Nuccio, Antonella Bogoni, and Alan E. Willner, "Bit-Rate-Variable and Order-Switchable Optical Multiplexing of High-Speed Pseudorandom BitSequence using Optical Delays," **Optics Letters**, vol. **35**, pp. 3042-3044, 2010.
124. Jian Wang, Omer F. Yilmaz, Scott R. Nuccio, Xiaoxia Wu, Alan E. Willner, "Orthogonal Tributary Channel Exchange of 160-Gbit/s Pol-Muxed DPSK Signal," **Optics Express**, vol. **18**, pp. 16995-17008, 2010.



**REFEREED PAPERS: (CONTINUED)**

125. Xiaoxia Wu, Antonella Bogoni, Omer F. Yilmaz, Scott Nuccio, Jian Wang, and Alan E. Willner, "Eightfold 40-320 Gbit/s Phase-Coherent Multiplexing and 320-40 Gbit/s Demultiplexing using Highly Nonlinear Fibers," **Optics Letters**, vol. **35**, pp. 1896-1898, 2010.
126. Antonella Bogoni, Xiaoxia Wu, Zahra Bakhtiari, Scott Nuccio, and Alan E. Willner, "640 Gbit/s Photonic Logic Gates," **Optics Letters**, vol. **35**, pp. 3955-3957, 2010.
127. Scott Nuccio, Omer Yilmaz, Xue Wang, Jian Wang, Xiaoxia Wu, Alan Willner, "Continuously Tunable 1.16- $\mu$ s Optical Delay of 100-Gb/s DQPSK and 50-Gb/s DPSK Signals using Wavelength Conversion and Chromatic Dispersion," **Optics Letters**, vol. **35**, no. 11, pp. 1819-1821, 2010.
- \* Selected by editors as one of two papers for the May 2010 OSA Spotlight in Optics. \**
128. X. Wu, A. Bogoni, O.F. Yilmaz, S. Nuccio, J. Wang, and A.E. Willner, "Eightfold 40-320 Gbit/s Phase-Coherent Multiplexing and 320-40 Gbit/s Demultiplexing using Highly Nonlinear Fibers," **Optics Letters**, vol. **35**, no. 11, pp. 1896-1898, 2010.
129. L. Zhang, Y. Yue, Y. Xiao-Li, J. Wang, R.G. Beausoleil, and A.E. Willner, "Flat and Low Dispersion in Highly Nonlinear Slot Waveguides," **Optics Express**, vol. **18**, no. 12, pp. 13187-13193, 2010.
130. Y. Yue, L. Zhang, J.-Y. Yang, R.G. Beausoleil, and A.E. Willner, "Silicon-on-Insulator Polarization Splitter using Two Horizontally-Slotted Waveguides," **Optics Letters**, vol. **35**, no. 9, pp. 1364-1366, 2010.
131. O.F. Yilmaz, S.R. Nuccio, X. Wu, and A.E. Willner, "40 Gb/s Optical Packet Buffer using Conversion/Dispersion Based Delays," **IEEE/OSA Journal of Lightwave Technology, Special Issue on the Conference on Optical Fiber Communications**, vol. **28**, no. 4, pp. 616-623, 2010.
132. X. Wu, A. Bogoni, S. Nuccio, O.F. Yilmaz, M. Scaffardi, and A.E. Willner, "High-Speed Optical WDM-to-TDM Conversion using Fiber Nonlinearities," **IEEE Journal of Selected Topics in Quantum Electronics**, vol. **16**, pp. 1441-1447, 2010.
133. Jian Wang, Scott Nuccio, Xiaoxia Wu, Omer Yilmaz, Lin Zhang, Irfan Fazal, Jeng-Yuan Yang, Yang Yue, Alan Willner, "40 Gbit/s Optical Data Exchange Between Wavelength-Division-Multiplexed Channels using a Periodically Poled Lithium Niobate Waveguide," **Optics Letters**, vol. **35**, no. 7, pp. 1067-1069, 2010.
134. Jeffrey A. Jargon, Xiaoxia Wu, Hyeon Yeong Choi, Yun C. Chung, and Alan E. Willner, "Optical Performance Monitoring of QPSK Data Channels by Use of Neural Networks Trained with Parameters Derived from Asynchronous Constellation Diagrams," **Optics Express**, vol. **18**, no. 5, pp. 4931-4938, 2010.
135. Avi Zadok, Xiaoxia Wu, Jacob Sendowski, Amnon Yariv, and Alan E. Willner, "Reconfigurable Generation of High-Order Ultra-Wideband Waveforms using Edge Detection," **IEEE/OSA Journal of Lightwave Technology**, vol. **28**, pp. 2207-2212, 2010.
136. Y.K. Lize, J.-Y. Yang, L.C. Christen, P. Saghari, S. Nuccio, T. Wu, N. Godbout, and A.E. Willner, "Mach-Zehnder Interferometer-Assisted Monitoring of OSNR, Chromatic and Polarization Mode Dispersion for NRZ-OOK, NRZ-DPSK and Optical Duobinary," accepted to **IEEE/OSA Journal of Lightwave Technology**.
137. S.R. Nuccio, O.F. Yilmaz, X. Wu, and A.E. Willner, "Fine Tuning of Conversion/Dispersion Based Optical Delays with a 1-pm Tunable Laser using Cascaded Acousto-Optic Mixing," **Optics Letters**, vol. **35**, pp. 523-525, 2010.

**REFEREED PAPERS: (CONTINUED)**

138. M. Song, L. Zhang, R.G. Beausoleil, and A.E. Willner, "Nonlinear Distortion in a Silicon Microring-Based Electro-Optic Modulator for Analog Optical Links," **IEEE Journal of Selected Topics in Quantum Electronics**, Special Issue on Silicon Photonics, vol. **16**, no. 1, pp. 185-191, 2010.
139. Lin Zhang, Yunchu Li, Jeng-Yuan Yang, Muping Song, Raymond G. Beausoleil and Alan E. Willner, "Silicon-Based Microring Resonator Modulators for Intensity Modulation" **IEEE Journal of Selected Topics in Quantum Electronics**, Special Issue on Silicon Photonics, vol. **16**, no. 1, pp. 149-158, 2010.
140. Avi Zadok, Xiaoxia Wu, Jacob Sendowski, Amnon Yariv, and Alan E. Willner, "Photonic Generation of Ultra-Wideband Signals via Pulse Compression in a Highly Nonlinear Fiber," **IEEE Photonics Technology Letters**, vol. **22**, pp. 239-241, 2010.
141. X. Wu, S. Nuccio, O.F. Yilmaz, J. Wang, A. Bogoni, and A.E. Willner, "Controllable Optical Demultiplexing using Continuously Tunable Optical Parametric Delay at 160-Gbit/s with <0.1 ps Resolution," **Optics Letters**, vol. **34**, pp. 3926-3928, 2009.
142. Scott R. Nuccio, Omer F. Yilmaz, Salman Khaleghi, Xiaoxia Wu, Louis Christen, Irfan Fazal, and Alan E. Willner, "Tunable 503 ns Optical Delay of 40-Gb/s RZ-OOK and RZ-DPSK using a Wavelength Scheme for Phase Conjugation to Reduce Residual Dispersion and Increase Delay," **Optics Letters**, vol. **34**, no. 12, pp. 1903-1905, 2009.
143. Jeng-Yuan Yang, Lin Zhang, Yang Yue, Janet Jackel, Anjali Agarwal, Loukas Paraschis, and Alan E. Willner, "CD-Insensitive PMD Monitoring of a High-Speed Polarization-Multiplexed Data Channel," **Optics Express**, vol. **17**, pp. 18171-18177, 2009.
144. J.-Y. Yang, L. Zhang, Y. Yue, V. R. Arbab, A. Agarwal, L. Paraschis, and A. E. Willner, "Optical Signal-to-Noise Ratio Monitoring of an 80-Gb/s Polarization-Multiplexed Return-to-Zero Differential Phase-Shift Keying Channel," **Optics Letters**, vol. **34**, no. 7, pp. 1006-1008, 2009.
145. W. Peng, K. Feng, and A.E. Willner, "Ultimate Sensitivity for Optically-Preamplified Direct-Detected OFDM Systems using Spectrally Matched Optical Filters," **IEEE Photonics Technology Letters**, vol. **21**, pp. 1764-1766, 2009.
146. Yang Yue, Lin Zhang, Muping Song, Raymond G. Beausoleil, and Alan E. Willner, "Higher-Order-Mode Assisted Silicon-on-Insulator 90 Degree Polarization Rotator," **Optics Express**, vol. **17**, pp. 20694-20699, 2009.
147. Antonella Bogoni, Xiaoxia Wu, Irfan Fazal, Alan E. Willner, "160 Gb/s Time-Domain Channel Extraction/ Insertion and All-Optical Logic Operations Exploiting a Single PPLN Waveguide," **IEEE/OSA Journal of Lightwave Technology**, vol. **27**, pp. 4221-4227, 2009.
148. Xiaoxue Zhao, Bo Zhang, Louis Christen, Devang Parekh, Werner Hofmann, Markus C. Amann, Fumio Koyama, Alan E. Willner, and Connie J. Chang-Hasnain, "Greatly Increased Fiber Transmission Distance with an Optically Injection-Locked Vertical-Cavity Surface-Emitting Laser," **Optics Express**, vol. **17**, pp. 13785-13791, 2009.
149. Lin Zhang, Yang Yue, Yinying Xiao-Li, Raymond G. Beausoleil, and Alan E. Willner, "Highly Dispersive Slot Waveguides," **Optics Express**, vol. **17**, no. 9, pp. 7095-7101, 2009.
150. W. Peng, B. Zhang, K. Feng, X. Wu, A.E. Willner, and S. Chi, "Spectrally Efficient Direct-Detected OFDM Transmission Incorporating a Tunable Frequency Gap and an Iterative Detection Techniques," **IEEE/OSA Journal of Lightwave Technology**, vol. **27**, pp. 5723-5735, 2009.

**REFEREED PAPERS: (CONTINUED)**

151. Xiaoxia Wu, Jeffrey Jargon, Ronald A. Skoog, Loukas Paraschis, Alan Willner, "Applications of Artificial Neural Networks in Optical Performance Monitoring," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Signal Processing, vol. **27**, pp. 3580-3589, 2009.
152. Antonella Bogoni, Xiaoxia Wu, Irfan Fazal, Alan E. Willner, "Photonic Processing of 320 Gbits/s Based on Sum-/Difference-Frequency Generation and Pump Depletion in a Single PPLN Waveguide," **Optics Letters**, vol. **34**, no. 12, pp. 1825-1827, 2009.
153. Xiaoxia Wu, Wei-Ren Peng, Vahid Arbab, Jian Wang, and Alan Willner, "Tunable Optical Wavelength Conversion of OFDM Signal using a Periodically-Poled Lithium Niobate Waveguide," **Optics Express**, vol. **17**, no. 11, pp. 9177-9182, 2009.
154. C. Yu, Y. Wang, Z. Pan, T. Luo, S. Kumar, B. Zhang, and A.E. Willner, "Carrier-Suppressed 160-GHz Pulse-Train Generation using a 40-GHz Phase Modulator with Polarization-Maintaining Fiber," **Optics Letters**, vol. **34**, pp. 1657-1659, 2009.
155. Wei-Ren Peng, Xiaoxia Wu, Kai-Ming Feng, Vahid R. Arbab, Bishara Shamee, Jeng-Yuan Yang, Louis C. Christen, Alan E. Willner, and Sien Chi, "Spectrally Efficient Direct-Detected OFDM Transmission Employing an Iterative Estimation and Cancellation Technique," **Optics Express**, vol. **17**, no. 11, pp. 9099-9111, 2009.
156. Wei-Ren Peng, Xiaoxia Wu, Vahid R. Arbab, Kai-Ming Feng, Bishara Shamee, Louis C. Christen, Jeng-Yuan Yang, Alan E. Willner, and Sien Chi, "Theoretical and Experimental Investigations of a Direct-Detected RF-Tone Assisted Optical OFDM System," **IEEE/OSA Journal of Lightwave Technology**, vol. **27**, no. 10, pp. 1332-1339, 2009.
157. Bo Zhang, Xiaoxue Zhao, Devang Parekh, Yang Yue, Werner Hofmann, Markus C. Amann, Connie J. Chang-Hasnain, and Alan E. Willner, "Reconfigurable Multifunctional Operation using Optical Injection-Locked VCSELs," **IEEE/OSA Journal of Lightwave Technology**, vol. **27**, pp. 2958-2963, 2009.
158. Louis Christen, Omer F. Yilmaz, Scott Nuccio, Xiaoxia Wu, Irfan Fazal, Alan E. Willner, Carsten Langrock, and Martin M. Fejer, "Tunable 105 ns Optical Delay for 80 Gb/s RZ-DQPSK, 40 Gb/sRZ-DPSK, and 40 Gb/s RZ-OOK Signals using Wavelength Conversion and Chromatic Dispersion," **Optics Letters**, vol. **34**, no. 4, pp. 542-544, 2009.
159. Wei-Ren Peng, Kai-Ming Feng, Alan E. Willner, and Sien Chi, "Estimation of the Bit Error Rate for Direct-Detected OFDM Signals with Optically Pre-amplified Receivers," **IEEE/OSA Journal of Lightwave Technology**, vol. **27**, no. 10, pp. 1340-1346, 2009.
160. Wei-Ren Peng, Bo Zhang, Xiaoxia Wu, Kai-Ming Feng, Alan E. Willner, and Sien Chi, "Compensation for I/Q Imbalances and Bias Deviation of the Mach-Zehnder Modulators in Direct-Detected Optical OFDM Systems," **IEEE Photonics Technology Letters**, vol. **21**, no. 2, pp. 103-105, 2009.
161. L. Zhang, Y. Li, M. Song, J.-Y. Yang, R. G. Beausoleil and A. E. Willner, "Silicon Microring-Based Signal Modulation for Chip-Scale Optical Interconnection," **Journal of Applied Physics-A** (A Springer Verlag Journal), Special Issue on Photonic Interconnects, vol. 95, pp. 1089-1100, 2009.
162. Xiaoxia Wu, Antonella Bogoni, Mirco Scaffardi, Gianluca Berrettini, Paolo Ghelfi, Luca Poti, Gianluca Meloni and Alan E. Willner, "Multiplexing Two 40-Gb/s WDM Signals into an 80-Gb/s Signal using XPM in a 0.8-meter Bi-HNLF," **Electronics Letters**, vol. **45**, no. 5, pp. 281-282, 2009.
163. Jeffrey A. Jargon, Xiaoxia Wu, and Alan E. Willner, "Optical Performance Monitoring using Artificial Neural Networks Trained with Eye-Diagram Parameters," **IEEE Photonics Technology Letters**, vol. **21**, no. 1, pp. 54-56, 2009.

**REFEREED PAPERS: (CONTINUED)**

164. Yunchu Li, Lin Zhang, Raymond G. Beausoleil, P. Daniel Dapkus, and Alan E. Willner, "Optical Data Timing Skews in On-Chip Optical WDM Interconnects," **Optics Communications**, vol. 282, no. 9, pp. 1925-1929, 2009.
165. Bo Zhang, Lianshan Yan, Lin Zhang, and Alan E. Willner, "Multi-Channel SBS Slow Light using Spectrally-Sliced Incoherent Pumping," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Slow Light, vol. 26, pp. 3763-3769, 2008.
166. G.M. Gehring, R.W. Boyd, A.L. Gaeta, D.J. Gauthier, and A.E. Willner, "Fiber-Based Slow-Light Technologies," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Slow Light, vol. 26, pp. 3752-3762, 2008.
167. O.F. Yilmaz, L. Christen, X. Wu, S.R. Nuccio, I. Fazal, and A.E. Willner "Time-Slot-Interchange of 40 Gb/s Variable Length Optical Packets using Conversion/Dispersion-Based Tunable Delays," **Optics Letters**, vol. 33, pp. 1954-1956, 2008.
168. X. Wu, L. Christen, O.F. Yilmaz, S.R. Nuccio, and Alan E. Willner, "Optical 10-to-20 and 20-to-40 Gb/s PRBS Data Multiplexing Utilizing Conversion/Dispersion-Based Tunable Optical Delays," **Optics Letters**, vol. 33, pp. 1518-1520, 2008.
169. L. Zhang, J.-Y. Yang, Y. Li, R.G. Beausoleil and A.E. Willner, "Monolithic Modulator and Demodulator of Differential Quadrature Phase-Shift Keying Signals Based on Silicon Microrings," **Optics Letters**, vol. 33, pp. 1428-1430, 2008.
170. Xiaoxia Wu, Louis Christen, Bo Zhang, Wei-Ren Peng, Jeng-Yuan Yang, Lin Zhang, Scott R. Nuccio, Loukas Paraschis, Jeffrey A. Jargon, and Alan Willner, "Synchronization Monitoring of I/Q Data and Pulse Carving Misalignment for a Parallel-Type RZ-DQPSK Transmitter by Measuring RF Clock Tone/Low Frequency Power," **IEEE Photonics Technology Letters**, vol. 20, no. 24, pp. 2138-2140, 2008.
171. J.-Y. Yang, L. Zhang, X. Wu, O. Yilmaz, B. Zhang, and A.E. Willner, "All-Optical Chromatic Dispersion Monitoring for Phase-Modulated Signals Utilizing Cross-Phase Modulation in a Highly-Nonlinear Fiber," **IEEE Photonics Technology Letters**, vol. 20, no. 19, pp. 1642-1644, 2008.
172. Yunchu Li, Lin Zhang, Muping Song, Bo Zhang, Jeng-Yuan Yang, Raymond G. Beausoleil, Alan E. Willner, and P. Daniel Dapkus, "Coupled-Ring-Resonator-Based Silicon Modulator for Enhanced Performance," **Optics Express**, vol. 16, no. 17, pp. 13342-13348, 2008.
173. X. Steve Yao, Bo Zhang, Xiaojun Chen, and Alan E. Willner, "Real-time Optical Spectrum Analysis of a Light Source using a Polarimeter," **Optics Express**, vol. 16, no. 22, pp. 17854-17863, 2008.
174. Moshe Nazarathy, Xiang Liu, Louis Christen, Yannick Keith Lize, and Alan Willner, "Self-Coherent Multi-Symbol Detection of Optical Differential Phase-Shift-Keying," **IEEE/OSA Journal of Lightwave Technology**, vol. 26, no. 13, pp. 1921-1934, 2008.
175. L. Zhang, M. Song, T. Wu, L. Zou, R. G. Beausoleil and A. E. Willner, "Embedded Ring Resonators for Micro-Photonic Applications," **Optics Letters**, vol. 33, no. 17, pp. 1978-1980, 2008.
176. Y.K. Lize, X. Wu, M. Nazarathy, Y. Atzmon, L. Christen, S.R. Nuccio, M. Faucher, N. Godbout, Nicolas, and A.E. Willner, "Chromatic Dispersion Tolerance in Optimized NRZ-, RZ- and CSRZ-DPSK Demodulation," **Optics Express**, vol. 16, pp. 4228-4236, 2008.
177. L. Christen, Y.K. Lize, S.R. Nuccio, A.E. Willner, and L. Paraschis, "Variable Rate, Multi-Format Receiver Design for 10 to 40 Gb/s DPSK and OOK Formats," **Optics Express**, vol. 16, pp. 3828-3833 2008.

**REFEREED PAPERS: (CONTINUED)**

178. L. Zhang, Y. Li, M. Song, R.G. Beausoleil and A.E. Willner, "Data Quality Dependencies in Microring-Based DPSK Transmitters and Receivers," **Optics Express**, vol. **16**, pp. 5739-5745, 2008.
179. L. Christen, Y.K. Lize, S.R. Nuccio, L. Paraschis, and A.E. Willner, "Experimental Demonstration of Reduced Complexity 43-Gb/s RZ-DQPSK Rate-Tunable Receiver," **IEEE Photonics Technology Letters**, vol. **20**, pp. 1166-1168, 2008.
180. L. Zhang, T. Luo, Y. Yue and A. E. Willner, "High Group Birefringence in Photonic Crystal Fibers with Both Positive and Negative Phase Birefringences," **Journal of Optics A: Pure and Applied Optics**, vol. **10**, pp. 035004-035007, 2008.
181. B. Zhang, L.-S. Yan, L. Zhang, S. Nuccio, L.C. Christen, T. Wu, and A.E. Willner, "Spectrally-Efficient Slow Light using Multi-level Phase-Modulated Formats," **Optics Letters**, vol. **33**, no. 1, pp. 55-57, 2008.
182. J.-Y. Yang, L. Zhang, L. C. Christen, B. Zhang, S. Nuccio, X. Wu, L.-S. Yan, S. Yao, and A. E. Willner, "Polarization-Mode-Dispersion Monitoring for Phase-Modulated Signals using DGD-Generated Interferometric Filter," **IEEE Photonics Technology Letters**, vol. **20**, pp. 150-152, 2008.
183. Irfan Fazal, Saurabh Kumar, Yunchu Li, Louis Christen, Omer F. Yilmaz, P. Saghari, Carsten Langrock, and Martin M. Fejer, and Alan E. Willner, "SOA-Assisted Data-Polarization-Insensitive Wavelength Conversion in a PPLN Waveguide." **IEEE/OSA Journal of Lightwave Technology**, vol. **26**, pp. 1690-1695, 2008.
184. A.E. Willner, "All Mirrors are not Created Equal," **Nature Photonics**, vol. **1**, no. 2, pp. 87-88, 2007.
- \* Selected as one of the 2007 Highlights in Nature Photonics by its editors. \**
185. Lin Zhang, Ting Luo, Yang Yue, Changyuan Yu and Alan E. Willner, "Photosensitivity-Enabled Dispersion Controllability for Quasi-Phase-Matching in Photonic Crystal Fibers," **Optics Letters**, vol. **32**, no. 24, pp. 3498-3500, 2007.
186. C. Yu, T. Luo, L. Zhang, and A.E. Willner, "Data Pulse Distortion Induced by a Slow Light Tunable Delay Line in Optical Fiber," **Optics Letters**, vol. **32**, no. 1, pp. 20-22, 2007.
187. B. Zhang, D. Leuenberger, M.-C. M Lee, A.E. Willner, and M.C. Wu, "Experimental Demonstration of Dynamic Bandwidth Allocation using a MEMS-Actuated Bandwidth-Tunable Microdisk Resonator Filter," **IEEE Photonics Technology Letters**, vol. **19**, pp. 1508-1510, 2007.
188. Poorya Saghari, P. Kamath, Vahid R. Arbab, Mahta Haghi, Alan E. Willner, Joe A. Bannister, and Joe D. Touch, "Experimental Demonstration of an Interference Avoidance Protocol (Transmission Scheduling) in O-CDMA Networks," **Optics Express**, vol. **15**, no. 25, pp. 16442-16447, 2007.
189. Yannick Keith Lizé, Louis Christen, Moshe Nazarathy, Yuval Atzmon, Scott Nuccio, Poorya Saghari, Robert Gomma, Jeng-Yuan Yang, Raman Kashyap, Alan E. Willner, and Loukas Paraschis, "Tolerances and Receiver Sensitivity Penalties of Multibit Delay Differential-Phase-Shift-Keying Demodulation," **IEEE Photonics Technology Letters**, vol. **19**, pp. 1874-1876, 2007.
190. Y.K. Lizé, L. Christen, J.-Y. Yang, P. Saghari, S. Nuccio, A.E. Willner, and R. Kashyap, "Independent and Simultaneous Monitoring of Chromatic and Polarization-Mode Dispersion in OOK and DPSK Transmission," **IEEE Photonics Technology Letters**, vol. **19**, pp. 3-5, 2007.
191. Lin Zhang, Jengyuan Yang, Muping Song, Yunchu Li, Bo Zhang, Ray G. Beausoleil, and Alan E. Willner, "Microring-Based Modulation and Demodulation of DPSK Signals," **Optics Express**, vol. **15**, pp. 11564-11569, 2007.

**REFEREED PAPERS: (CONTINUED)**

192. Irfan Fazal, Omer Yilmaz, Scott Nuccio, Bo Zhang, Alan E. Willner, Carsten Langrock, Martin M. Fejer, "Optical Data Packet Synchronization and Multiplexing using a Tunable Optical Delay Based on Wavelength Conversion and Inter-Channel Chromatic Dispersion," **Optics Express**, vol. **15**, no. 17, pp. 10492-10497, 2007.
193. S. Kumar, B. Zhang and A. E. Willner, "Impact of Operational Parameters on Optimum Performance of SOA-Based Differential-Mode Wavelength Converters," **IEEE Photonics Technology Letters**, vol. **19**, pp. 1538-1540, 2007.
194. Vahid R. Arbab, Poorya Saghari, Mahta Haghi, Paniz Ebrahimi, and Alan E. Willner, "Increasing the Bit Rate in OCDMA Systems using Pulse Position Modulation Techniques," **Optics Express**, vol. **15**, pp. 12252-12257, 2007.
195. M. Nazarathy, X. Liu, L. Christen, Y. Lize, and A. Willner, "Self-Coherent Decision-Feedback-Directed 40-Gb/s DQPSK Receiver," **IEEE Photonics Technology Letters**, vol. **19**, pp. 828-830, 2007.
196. Lin Zhang, Ting Luo, Changyuan Yu, Wen Zhang, and Alan E. Willner, "Pattern Dependence of Data Distortion in Slow-Light Elements," **IEEE/OSA Journal of Lightwave Technology**, vol. **25**, pp. 1754-1760, 2007.
197. P. Ebrahimi, R. Jones, Y. Wang, L. Yan, T. Mader, M. Paniccia, A. E. Willner, L. Paraschis, "A 10-Gbit/s EML Link using Detuned Narrowband Optical Filtering," **Optics Express**, vol. **15**, pp. 10597-10606, 2007.
198. B. Zhang, L.-S. Yan, J.-Y. Yang, I. Fazal, and A.E. Willner, "A Single Slow-Light Element for Independent Delay Control and Synchronization on Multiple Gb/s Data Channels," **IEEE Photonics Technology Letters**, vol. **19**, pp. 1081-1083, 2007.
199. Y. Wang, S. Hu, L.-S. Yan, J.-Y. Yang, and A.E. Willner, "Chromatic Dispersion and Polarization Mode Dispersion Monitoring for Multi-level Intensity and Phase Modulation Systems," **Optics Express**, vol. **15**, pp. 14038-14043, 2007.
200. Yannick Keith Lize, Louis Christen, Moshe Nazarathy, Scott Nuccio, Xiaoxia Wu, Alan E. Willner, Raman Kashyap, "Combination of Optical and Electronic Logic Gates for Error Correction in Multipath Differential Demodulation," **Optics Express**, vol. **15**, no. 11, pp. 6831-6839, 2007.
201. B. Zhang, L. Zhang, L.-S. Yan, I. Fazal, J.-Y. Yang, and A.E. Willner, "Continuously-Tunable, Bit-rate Variable OTDM using Broadband SBS Slow-Light Delay Line," **Optics Express**, vol. **15**, pp. 8317-8322, 2007.
202. Y. Wang, C. Yu, L.-S. Yan, A.E. Willner, R. Roussey, C. Langrock, M.M. Fejer, Y. Okawachi, J.E. Sharping, and A.L. Gaeta, "44-ns Continuously-Tunable Dispersionless Optical Delay Element using a PPLN Waveguide With a Two Pump Configuration, DCF, and a Dispersion Compensator," **IEEE Photonics Technology Letters**, vol. **19**, pp. 861-863, 2007.
203. X. Steve Yao, L.-S. Yan, B. Zhang, A.E. Willner, and Junfeng Jiang, "All-Optic Scheme for Automatic Polarization Division Demultiplexing," **Optics Express**, vol. **15**, no. 12, pp. 7407-7414, 2007.
204. Yannick Keith Lizé, Louis Christen, Xiaoxia Wu, Jeng-Yuan Yang, Scott Nuccio, Teng Wu, Alan E. Willner, Raman Kashyap, "Free Spectral Range Optimization of Return-to-Zero Differential Phase Shift Keyed Demodulation in the Presence of Chromatic Dispersion," **Optics Express**, vol. **15**, no. 11, pp. 6817-6822, 2007.
205. John E. McGeehan, Saurabh Kumar, and Alan E. Willner, "Simultaneous Optical Digital Half-Subtraction and -Addition using SOAs and a PPLN Waveguide," **Optics Express**, vol. **15**, no. 9, pp. 5543-5549, 2007.

**REFEREED PAPERS: (CONTINUED)**

206. Zhaoming Zhu, Andrew M. Dawes, Daniel J. Gauthier, Lin Zhang, and Alan E. Willner, "Broadband SBS Slow Light in an Optical Fiber," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on 2006 Conference on Optical Fiber Communications, vol. **25**, no. 1, pp. 201-206, 2007.
207. Bo Zhang, Lianshan Yan, Irfan Fazal, Lin Zhang, Alan E. Willner, Zhaoming Zhu, and Daniel J. Gauthier, "Slow Light on Gbit/s Differential-Phase-Shift-Keying Signals," **Optics Express**, vol. **15**, no. 4, pp. 1878-1883, 2007.
208. Bo Zhang, Saurabh Kumar, Lianshan Yan, and Alan E. Willner, "Extinction Ratio Enhancement of SOA-based Delayed-Interference Signal Converter using Detuned Filtering," **Optics Communications**, vol. **280**, pp. 202-205, 2007.
209. C. Yu, Z. Pan, T. Luo, Y. Wang, L. Christen, and A.E. Willner, "Beyond 40-GHz Return-to-Zero Optical Pulse Train Generation using a Phase Modulator and Polarization-Maintaining Fiber," **IEEE Photonics Technology Letters**, vol. **19**, pp. 42-44, 2007.
210. Y.K. Lize, R. Gomma, R. Kashyap, L. Palmer, and A.E. Willner, "Fast All-Optical Polarization Scrambling using Re-entrant Lefevre Controller," **Optics Communications**, vol. **279**, pp. 50-52, 2007.
211. J.E. McGeehan, M. Giltrelli, and A.E. Willner, "All-Optical Digital 3-Input AND Gate using Sum- and Difference-Frequency Generation in a PPLN Waveguide," **Electronics Letters**, vol. **43**, no. 7, pp. 409-410, 2007.
212. Saurabh Kumar, Alan E. Willner, Deniz Gurkan, Krishnan R. Parameswaran, and Martin M. Fejer, "All-Optical Half Adder using an SOA and a PPLN Waveguide for Signal Processing in Optical Networks," **Optics Express**, vol. **14**, no. 22, pp. 10255-10260, 2006.
213. P. Ebrahimi, K. Yu, M.C. Hauer, A.E. Willner, and O. Solgaard, "Tunable Wavelength Demultiplexer and OCDMA Code-Hopping using a 10- $\mu$ s-Tuning MEMS-Actuated Gires-Tournois Filter," **IEEE Photonics Technology Letters**, vol. **18**, pp. 1398-1400, 2006.
214. C. Yu, T. Luo, B. Zhang, Z. Pan, M. Adler, Y. Wang, J.E. McGeehan, and A.E. Willner, "Wavelength-Shift-Free 3R Regenerator for 40-Gbit/s RZ System by Optical Parametric Amplification in Fiber," **IEEE Photonics Technology Letters**, vol. **18**, no. 24, pp. 2569-2571, 2006.
215. T. Luo, C. Yu, L.-S. Yan, S. Kumar, Z. Pan and A.E. Willner, "Simple Autocorrelation Technique Based on Degree-of-Polarization Measurement," **IEEE Photonics Technology Letters**, vol. **18**, pp. 1606-1608, 2006.
216. L.-S. Yan, X. Steve Yao, and A.E. Willner, "Enabling Hinge Model in Polarization-Mode Dispersion Statistics using Variable Differential-Group-Delay Based Emulator," **IEEE Photonics Technology Letters**, vol. **18**, pp. 427-429, 2006.
217. T. Luo, C. Yu, Z. Pan, Y. Wang, J.E. McGeehan, M. Adler, and A.E. Willner, "All-Optical Chromatic Dispersion Monitoring of a 40-Gbit/s RZ Signal by Measuring the XPM-Generated Optical Tone Power in a Highly-Nonlinear Fiber," **IEEE Photonics Technology Letters**, vol. **18**, pp. 430-432, 2006.
218. Saurabh Kumar and Alan E. Willner, "Simultaneous Four-Wave Mixing and Cross-Gain Modulation for Implementing an All-Optical XNOR Logic Gate using a Single SOA," **Optics Express**, vol. **14**, no. 12, pp. 5092-5097, 2006.
219. L.-S. Yan, X. Steve Yao, C. Yu, G. Xie, Y. Wang, L. Lin, Z. Chen, and A.E. Willner, "High-Speed and Highly Repeatable Polarization-State Generator and Analyzer for 40-Gb/s System Performance Monitoring," **IEEE Photonics Technology Letters**, vol. **18**, pp. 643-645, 2006.

**REFEREED PAPERS: (CONTINUED)**

220. R. Khosravani, Y.W. Song, Y. Xie, L.-S. Yan, A. E. Willner, and C. R. Menyuk, "Bit-Pattern-Dependent Polarization Rotation In First-Order PMD-Compensated WDM Systems," **Optics Communications**, vol. **257**, no. 1, pp. 191-196, 2006.
221. L.-S. Yan, T. Luo, Q. Yu, Y. Shi, K.-M. Feng, R. Khosravani, and A.E. Willner, "Investigation of Performance Variations Due to the Amplitude of Group-Delay Ripple in Chirped Fiber Bragg Gratings," **Optical Fiber Technology**, Elsevier Publishers, vol. **12**, pp. 238-242, 2006.
222. Y. Wang, C. Yu, T. Luo, L.. Yan, Z. Pan, and A.E. Willner, "Tunable All-Optical Wavelength Conversion and Wavelength Multicasting using Orthogonally-Polarized Fiber FWM," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Optical Networks, vol. **23**, no. 10, pp. 3331-3338, 2005.
223. L.-S. Yan, X. Steve Yao, Y. Shi, and A.E. Willner, "Simultaneous Monitoring of Both Optical Signal-to-Noise-Ratio and Polarization-Mode-Dispersion using Polarization Scrambling and Polarization-Beam-Splitting," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Optical Networks, vol. **23**, no. 10, pp. 3290-3294, 2005.
224. J.E. McGeehan, P. Saghari, S.M.R.M. Nezam, A.E. Willner, R. Omrani, and P.V. Kumar, "Experimental Demonstration of OCDMA Transmission using a Three-Dimensional (Time-Wavelength-Polarization) Codeset," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Optical Networks, vol. **23**, no. 10, pp. 3282-3289, 2005.
225. P. Saghari, R. Gholizadeh, E. Pakbaznia, J.E. McGeehan, S.M.R.Motaghian Nezam, and A.E. Willner, "Experimental and Theoretical Analysis of the Optimum Decision Threshold for Varying Numbers of Active Users in a 2D Time-Wavelength Asynchronous O-CDMA System," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Optical Networks, vol. **23**, no. 10, pp. 3339-3346, 2005.
226. T. Luo, C. Yu, Z. Pan, Y. Wang, Y. Arieli, and A.E. Willner, "Dispersive Effects Monitoring for RZ Data by Adding a Frequency-Shifted Carrier along the Orthogonal Polarization State," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Optical Networks, vol. **23**, no. 10, pp. 3295-3301, 2005.
227. K.K. Merchant, J.E. McGeehan, A.E. Willner, S. Ovadia, P. Kamath, J. Touch, and J. Bannister, "Analysis of an Optical Burst Switching Router with Tunable Multiwavelength Recirculating Buffers," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Optical Networks, vol. **23**, no. 10, pp. 3302-3312, 2005.
228. P. Saghari, R. Omrani, A.E. Willner, and P.V. Kumar, "Analytical Interference Model for 2-Dimensional (Time-Wavelength)AsynchronousO-CDMA Systems using Various Receiver Structures," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Optical Networks, vol. **23**, no. 10, pp. 3260-3269, 2005.
229. Jay E. Sharping, Yoshitomo Okawachi, James van Howe, Chris Xu, Yan Wang, Alan E. Willner, and Alexander L. Gaeta, "All-Optical, Wavelength and Bandwidth Preserving, Pulse Delay Based on Parametric Wavelength Conversion and Dispersion," **Optics Express**, vol. **13**, no. 20, pp. 7872-7877, 2005.
230. L.-S. Yan, Y. Chang, S. Killmeyer, B. Gomatam, R. Talaga, T. Luo, and A.E. Willner, "Performance Enhancement in 10-Gb/s Long-Haul Fiber Links with Adaptive Eye Mapping in an Integrated 16-bit Si-CMOS Transceiver IC," **IEEE Photonics Technology Letters**, vol. **17**, no. 8, pp. 1752-1754, 2005.
231. Zhaoming Zhu, Daniel J. Gauthier Yoshitomo Okawachi, Jay E. Sharping, Alexander L. Gaeta Robert W. Boyd, and Alan E. Willner, "Numerical Study of All-Optical Slow-Light Delays via Stimulated Brillouin Scattering in an Optical Fiber," **Journal of the Optical Society of America B**, vol. **22**, no. 11, pp. 2378-2384, 2005.



**REFEREED PAPERS: (CONTINUED)**

232. Lin Zhang, Changxi Yang, Changyuan Yu, Ting Luo, and Alan E. Willner, "PCF-Based Polarization Splitters with Simplified Structures," **IEEE/OSA Journal of Lightwave Technology**, vol. **23**, pp. 3558-3565, 2005.
233. L.-S. Yan, Y. Wang, B. Zhang, C. Yu, J. McGeehan, L. Paraschis, and A. E. Willner, "Reach Extension in 10-Gb/s Directly Modulated Transmission Systems using Asymmetric and Narrowband Optical Filtering," **Optics Express**, vol. **13**, pp. 5106-5115, 2005.
234. L.-S. Yan, Y. Shi, and A.E. Willner, "Graphical Solution for RF Half-Wave Voltage and Chirp Parameter of Electro-Optic Modulators using Optical Spectrum Analysis," **IEEE Photonics Technology Letters**, vol. **17**, pp. 1486-1488, 2005.
235. Y.W. Song, S.M.R. Motaghian, Z. Pan, and A.E. Willner, "Efficient DOP Monitoring of WDM Channels for Simultaneous PMD Compensation," **Optics Communications**, vol. **255**, pp. 225-229, 2005.
236. L.-S. Yan, C. Yu, Y. Wang, T. Luo, L. Paraschis, Y. Shi, and A.E. Willner, "40-Gbit/s Transmission over 25-km of Negative-Dispersion Fiber using Narrowband Filtering of a Commercial Directly Modulated DFB Laser," **IEEE Photonics Technology Letters**, vol. **17**, pp. 1322-1324, 2005.
237. C. Yu, L.C. Christen, T. Luo, Y. Wang, Z. Pan, L.-S. Yan, and A.E. Willner, "All-Optical XOR Gate Based on Kerr Effect in a Single Highly-Nonlinear Fiber," **IEEE Photonics Technology Letters**, vol. **17**, pp. 1232-1234, 2005.
238. L.-S. Yan, S.M.R.M. Nezam, A.B. Sahin, J.E. McGeehan, T. Luo, Q. Yu, and A.E. Willner, "Performance Optimization of RZ Data Format in WDM Systems using Tunable Pulse-Width Management at the Transmitter," **IEEE/OSA Journal of Lightwave Technology**, vol. **23**, pp. 1063-1067, 2005.
239. R.W. Boyd, D.J. Gauthier, A.L. Gaeta, and A.E. Willner, "Maximum Time Delay Achievable on Propagation Through a Slow-Light Medium," **Physical Review A**, American Physical Society, vol. **71**, manuscript 023801, pp. 1-4, 2005.
240. C. Yu, L.-S. Yan, T. Luo, Y. Wang, Z. Pan, and A.E. Willner, "Width-Tunable Optical Pulse Generation based on Four Wave Mixing in Highly-Nonlinear Fiber," **IEEE Photonics Technology Letters**, vol. **17**, pp. 636-638, 2005.
241. L.-S. Yan, Q. Yu, and A.E. Willner, "Uniformly Distributed States of Polarization on the Poincarè Sphere using an Improved Polarization Scrambling Scheme," **Optics Communications**, vol. **249**, pp. 43-50, 2005.
242. Z. Pan, Q. Yu, Y. Arieli, and A.E. Willner, "The Effects of XPM-Induced Fast Polarization-State Fluctuations on PMD Compensated WDM Systems," **IEEE Photonics Technology Letters**, vol. **16**, pp. 1963-1965, 2004.
243. Y.W. Song, Z. Pan, Y. Arieli, S.M.R. Motaghian, S.A. Havstad, and A.E. Willner, "Immunitization of WDM Systems to Nonlinearity-Induced Crosstalk using Optical Polarization-Shift-Keying," **Optics Communications**, vol. **252**, pp. 162-166, 2005.
244. C. Yu, Q. Yu, Z. Pan, A.B. Sahin, and A.E. Willner, "Optically Compensating the PMD-Induced RF Power Fading for Single-Sideband Subcarrier-Multiplexed Systems," **IEEE Photonics Technology Letters**, vol. **16**, pp. 341-343, 2004.
245. T. Luo, Z. Pan, S.M.R. Motaghian Nezam, L.-S. Yan, A.B. Sahin, and A.E. Willner, "PMD Monitoring by Tracking the Chromatic-Dispersion-Insensitive RF Power of the Vestigial Sideband," **IEEE Photonics Technology Letters**, vol. **16**, pp. 2177-2179, 2004.

**REFEREED PAPERS: (CONTINUED)**

246. S.M. Reza Motaghian Nezam, J.E. McGeehan, and A.E. Willner, "Theoretical and Experimental Analysis of the Dependence of a Signal's Degree of Polarization on the Optical Data Spectrum," **IEEE/OSA Journal of Lightwave Technology**, vol. **22**, pp. 763-772, 2004.
247. C. Yu, Z. Pan, Y. Wang, Y.W. Song, D. Gurkan, M.C. Hauer, D. Starodubov, and A.E. Willner, "Polarization-Insensitive All-Optical Wavelength Conversion using Dispersion-Shifted Fiber With a Fiber Bragg Grating and a Faraday Rotator Mirror," **IEEE Photonics Technology Letters**, vol. **16**, pp. 1906-1908, 2004.
248. Z. Pan, Y.W. Song, C. Yu, Y. Wang, and A. E. Willner, "using Sampled Nonlinearly-Chirped Fiber Bragg Gratings to Achieve 40-Gbit/s Tunable Multi-channel Dispersion Compensation," **Optics Communications**, vol. **241**, pp. 371-375, 2004.
249. T. Luo, L.-S. Yan, Y.Q. Shi, Z. Pan, Y.W. Song, A.E. Willner, and S. Yao, "Tunable Wavelength Spacing Multi-Wavelength Ring Laser using Programmable DGD Module as Intra-Cavity Filter", **IEE Electronics Letters**, vol. **40**, no. 25, pp. 1578-1579, 2004.
250. Z. Pan, Q. Yu, Y. Xie, S. A. Havstad, A. E. Willner, D. S. Starodubov, and J. Feinberg, "Real-time Group-Velocity Dispersion Monitoring and Automated Compensation without Modifications of the Transmitter," **Optics Communications**, vol. **230**, pp. 145-149, 2004
251. L.-S. Yan, Q. Yu, A.E. Willner, and Y. Shi, "Measurement of the Chirp Parameter of Electro-Optic Modulators by Comparing the Phase Between Two Sidebands," **Optics Letters**, vol. **28**, no.13, pp. 1114-1116, 2003.
252. T. Lu, D.O. Yevick, L.-S. Yan, B. Zhang, and A.E. Willner, "An Experimental Approach to Multicanonical Sampling," **IEEE Photonics Technology Letters**, vol. **16**, pp. 1978-1980, 2004.
253. L.-S. Yan, M.C. Hauer, Y. Shi, X.S. Yao, P. Ebrahimi, Y. Wang, A.E. Willner, and W.L. Kath, "Polarization-Mode-Dispersion Emulator using Variable Differential-Group-Delay (DGD) Elements and Its Use for Experimental Importance Sampling," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Polarization Mode Dispersion, vol. **22**, pp. 1051-1058, 2004.
254. S.M. Reza Motaghian Nezam, Y.-W. Song, C.-Y. Yu, J.E. McGeehan, A.B. Sahin, and A.E. Willner, "First Order PMD Monitoring for NRZ Data using Optical Clock Regeneration Techniques," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Polarization Mode Dispersion, vol. **22**, pp. 1086-1093, 2004.
255. M.C. Hauer, Q. Yu, E.R. Lyons, C.H. Lin, A.A. Au, H.P. Lee, and A.E. Willner, "Electrically Controllable All-Fiber PMD Emulator using a Compact Array of Thin-Film Microheaters," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Polarization Mode Dispersion, vol. **22**, pp. 1059-1065, 2004.
256. S.M. Reza Motaghian Nezam, T. Luo, J.E. McGeehan, and A.E. Willner, "Enhancing the Monitoring Range and Sensitivity in CSRZ Chromatic Dispersion Monitors using a Dispersion-Biased RF Clock Tone," **IEEE Photonics Technology Letters**, vol. **16**, pp. 1391-1393, 2004.
257. M.C. Hauer, J.E. McGeehan, S. Kumar, J. Touch, J. Bannister, E.R. Lyons, C.H. Lin, A.A. Au, H.P. Lee, D.S. Starodubov, and A.E. Willner, "Optically-Assisted Internet Routing using Arrays of Novel Dynamically Reconfigurable FBG-Based Correlators," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Optical Networks, vol. **21**, pp. 2765-2778, 2003.
258. S.M. Reza Motaghian Nezam, J.E. McGeehan, and A.E. Willner, "Measuring Fiber and Component DGD using Polarized Limited-Bandwidth Optical Sources and Monitoring the DOP," **IEEE Photonics Technology Letters**, vol. **16**, pp. 1694-1696, 2004.

**REFEREED PAPERS: (CONTINUED)**

259. S.M.R. Motaghian Nezam, L.-S. Yan, J.E. McGeehan, Y.Q. Shi, A.E. Willner, and X.S. Yao, "Enhancing the Dynamic Range and DGD Monitoring Windows in DOP-based DGD Monitors using Symmetric and Asymmetric Partial Optical Filtering," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Polarization-Mode-Dispersion, vol. **22**, pp. 1094-1102, 2004.
260. D.C. Kilper, R. Bach, D.J. Blumenthal, D. Einstein, T. Landolsi, L. Ostar, M. Preiss, and A.E. Willner, "Optical Performance Monitoring," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on the Conference on Optical Fiber Communications, vol. **22**, pp. 294-304, 2004.
261. D. Gurkan, S. Kumar, A.E. Willner, K.R. Parameswaran, and M.M. Fejer, "Simultaneous Label Swapping and Wavelength Conversion of Multiple Independent WDM Channels in an All-Optical MPLS Network using PPLN Waveguides as Wavelength Converters," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Optical Networks, vol. **21**, pp. 2739-2745, 2003.
262. J.E. McGeehan, S. Kumar, D. Gurkan, S.M.R. Motaghian Nezam, A.E. Willner, K.R. Parameswaran, M.M. Fejer, J. Bannister, and J. Touch, "All-Optical Decrementing of a Packet's Time-to-Live (TTL) Field and Subsequent Dropping of a Zero-TTL Packet," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Optical Networks, vol. **21**, pp. 2746-2752, 2003.
263. S.M.R. Motaghian Nezam, J.E. McGeehan, and A.E. Willner, "Degree-of-Polarization-Based PMD Monitoring for Subcarrier-Multiplexed Signals via Equalized Carrier/Sideband Filtering," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on Polarization-Mode-Dispersion, vol. **22**, pp. 1078-1085, 2004.
264. L.-S. Yan, C. Yeh, G. Yang, L. Lin, Z. Chen, Y.Q. Shi, A.E. Willner, and X. Steve Yao, "Programmable Group Delay Module using Binary Polarization Switching," **IEEE/OSA Journal of Lightwave Technology**, vol. **21**, pp. 1676-1684, 2003.
265. Q. Yu, L.-S. Yan, S. Lee, Y. Xie, and A. E. Willner, "Loop-Synchronous Polarization Scrambling Technique for Simulating Polarization Effects using Recirculating Fiber Loops," **IEEE/OSA Journal of Lightwave Technology**, vol. **21**, no. 5, pp. 1593-1600, 2003.
266. L.-S. Yan, M.C. Hauer, P. Ebrahimi, Y. Wang, Y.Q. Shi, X. Steve Yao, A.E. Willner, and W.L. Kath, "Measurement of Q Degradation due to Polarisation Mode Dispersion using Multiple Importance Sampling," **Electronics Letters**, vol. **39**, no. 13, pp. 974-975, 2003.
267. L.-S. Yan, Q. Yu, T. Luo, J. E. McGeehan, and A.E. Willner, "Deleterious System Effects due to Low Frequency Polarization Scrambling in the Presence of Non-Negligible Polarization Dependent Loss," **IEEE Photonics Technology Letters**, vol. **15**, no. 3, pp. 464-466, 2003.
268. J.E. McGeehan, M.C. Hauer, A. B. Sahin, and A.E. Willner, "Multi-Wavelength-Channel Header Recognition for Reconfigurable WDM Networks using Optical Correlators based on Sampled Fiber Bragg Gratings," **IEEE Photonics Technology Letters**, vol. **15**, no. 10, pp. 1464-1466, 2003.
269. Y. Shi, L.-S. Yan, and A.E. Willner, "High-Speed Electro-Optic Modulator Characterization using Optical Spectrum Analysis", **IEEE/OSA Journal of Lightwave Technology**, vol. **21**, pp. 2358-2367, 2003.
270. Z. Pan, Q. Yu, Y. Xie, Y.W. Song, A.E. Willner, "Clock-Tone Regeneration due to Higher Order PMD in NRZ Systems," **IEEE Photonics Technology Letters**, vol. **15**, pp. 338-340, 2003.
271. Y.W. Song, S.M.R.M. Nezam, D.Starodubov, J.E. Rothenberg, Z. Pan, H. Li, R. Wilcox, J. Popelek, R. Caldwell, V. Grubsky, and A.E. Willner, "Tunable Interchannel Broad-Band Dispersion-Slope Compensation for 10-Gb/s WDM Systems using a Non-channelized Third-Order Chirped FBG," **IEEE Photonics Technology Letters**, vol. **15**, No. 1, pp 144-146, 2003.

**REFEREED PAPERS: (CONTINUED)**

272. Q. Yu, Z. Pan, L.-S. Yan, and A.E. Willner, "Chromatic Dispersion Monitoring Technique using Sideband Optical Filtering and Clock Phase-Shift Detection," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on 40-Gb/s Lightwave Systems, vol. **20**, no. 12, pp. 2267-2271, 2002.
273. Z. Pan, Y.W. Song, C. Yu, Y. Wang, Q. Yu, J. Popelek, H. Li, Y. Li, and A. E. Willner, "Tunable Chromatic Dispersion Compensation in 40-Gbit/s Systems using Nonlinearly-Chirped Fiber Bragg Gratings," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on 40-Gb/s Lightwave Systems, vol. **20**, no. 12, pp. 2239-2246, 2002.
274. Y.W. Song, Z. Pan, S.M.R. Motaghian Nezam, C. Yu, Y. Wang, D. Starodubov, V. Grubsky, J.E. Rothenberg, J. Popelek, H. Li, Y. Li, R. Caldwell, R. Wilcox, and A.E. Willner, "Tunable Dispersion Slope Compensation for 40-Gbit/s WDM Systems using Broadband Non-Channelized 3rd-Order Chirped Fiber Bragg Gratings," **IEEE/OSA Journal of Lightwave Technology**, Special Issue on 40-Gb/s Lightwave Systems, vol. **20**, no. 12, pp. 2259-2266, 2002.
275. L.-S. Yan, Q. Yu, A.B. Sahin, and A.E. Willner, "Differential Group Delay Monitoring used as Feedforward Information for Polarization Mode Dispersion Compensation," **IEEE Photonics Technology Letters**, vol. **14**, pp. 1463 -1465, 2002.
276. M.C. Cardakli and A.E. Willner, "Synchronization of a Network Element for Optical Packet Switching using Optical Correlators and Wavelength Shifting," **IEEE Photonics Technology Letters**, vol. **14**, pp. 1375 -1377, 2002.
277. Z. Pan, Y. Wang, C. Yu, T. Luo, A.B. Sahin, Q. Yu, and A.E. Willner, "Intrabit Polarization Diversity Modulation for the Mitigation of PMD Effects," **IEEE Photonics Technology Letters**, vol. **14**, pp. 1466 - 1468, 2002.
278. L.-S. Yan, Q. Yu, T. Luo, A. E. Willner, and X. S. Yao, "Compensation of Higher-order PMD using Phase Modulation and Polarization Control in the Transmitter," **IEEE Photonics Technology Letters**, vol. **14**, pp. 858-860, 2002.
279. M. C. Cardakli, A. B. Sahin, O. H. Adamczyk, A. E. Willner, K. R. Parameswaran, and M. M. Fejer, "Wavelength conversion of subcarrier channels using difference frequency generation in a PPLN waveguide," **IEEE Photonics Technology Letters**, vol. 14, no. 9, pp. 1327-1329, 2002.
280. M.C. Cardakli, D. Gurkan, S.A. Havstad, A.E. Willner, K.R. Parameswaran, M.M. Fejer, and I. Brenner, "Tunable All-Optical Time-Slot-Interchange and Wavelength Conversion using Difference-Frequency-Generation and Optical Buffers," **IEEE Photonics Technology Letters**, vol. **14**, no. 2, pp. 200-202, 2002.
281. A.B. Sahin, O.H. Adamczyk, and A.E. Willner, "Dispersion Division Multiplexing in Subcarrier Modulated Data Transmission using Channel-Specific RF Fading," **IEEE Photonics Technology Letters**, vol. **14**, pp. 1190-1192, 2002.
282. Y.W. Song, D. Starodubov, Z. Pan, Y. Xie, A.E. Willner, and J. Feinberg, "Tunable WDM Dispersion Compensation with Fixed Bandwidth and Fixed Passband Center Wavelength using a Uniform FBG," **IEEE Photonics Technology Letters**, vol. **14**, pp. 1193-1195, 2002.
283. M.N. Petersen, Z. Pan, S. Lee, S.A. Havstad, and A.E. Willner, "Online Chromatic Dispersion Monitoring and Compensation using a Single Inband Subcarrier Tone," **IEEE Photonics Technology Letters**, vol. **14**, pp. 570-572, 2002.
284. L.-S. Yan, Q. Yu, and A. E. Willner, "Demonstration of In-Line Monitoring and Compensation of Polarization Dependent Loss for Multiple Channels," **IEEE Photonics Technology Letters**, vol. **14**, pp. 864-866, 2002.

**REFEREED PAPERS: (CONTINUED)**

285. Q. Yu and A.E. Willner, "Performance Limits of First-Order PMD Compensators using Fixed and Variable DGD Elements," **IEEE Photonics Technology Letters**, vol. **14**, pp. 304-306, 2002.
286. L.-S. Yan, Q. Yu, Y. Xie, and A. E. Willner, "Experimental Demonstration of the System Performance Degradation due to the Combined Effect of Polarization Dependent Loss with Polarization Mode Dispersion," **IEEE Photonics Technology Letters**, vol. **14**, no. 2, pp. 224-226, 2002.
287. O.H. Adamczyk, A.B. Sahin, Q. Yu, S. Lee, and A.E. Willner, "Statistics of PMD-Induced Power Fading for Intensity-Modulated Double-Sideband and Single-Sideband Microwave and Millimeter-Wave Signals," **IEEE Transactions on Microwave Theory and Techniques and IEEE/OSA Journal of Lightwave Technology**, Joint Special Issue on Microwave and Millimeter-Wave Photonics, vol. **49**, pp. 1962-1967, 2001.
288. R. Khosravani, S.A. Havstad, Y.W. Song, P. Ebrahimi, and A.E. Willner, "Polarization-Mode Dispersion Compensation in WDM Systems," **IEEE Photonics Technology Letters**, vol. **13**, pp. 1370-1372, 2001.
289. Q. Yu, L.-S. Yan, Y. Xie, M. Hauer, and A.E. Willner, "Higher-Order PMD Compensation using a Fixed Time Delay Followed by a Variable Time Delay," **IEEE Photonics Technology Letters**, vol. **13**, pp. 863-865, 2001.
290. Y.W. Song, S.A. Havstad, D. Starodubov, Y. Xie, A.E. Willner, J. Feinberg, "40-nm-wide Tunable Fiber Ring Laser with Single-Mode Operation using A Highly Stretchable FBG," **IEEE Photonics Technology Letters**, vol. **13**, pp. 1167-1169, 2001.
291. I.T. Lima, Jr., E. Ibragimov, R. Khosravani, P. Ebrahimi, C.R. Menyuk, and A.E. Willner, "Comparison on PMD Emulators," **IEEE/OSA Journal of Lightwave Technology**, vol. **19**, pp. 1872-1881, 2001.
292. Y.W. Song, Z. Pan, D. Starodubov, V. Grubsky, E. Salik, S.A. Havstad, Y. Xie, A. E. Willner, and J. Feinberg, "All-Fiber WDM Optical Crossconnect using Ultrastrong Widely-Tunable FBGs," **IEEE Photonics Technology Letters**, vol. **13**, pp. 1103-1105, 2001.
293. M.I. Hayee, M.C. Cardakli, A.B. Sahin, and A.E. Willner, "Doubling of Bandwidth Utilization using Two Orthogonal Polarizations and Power Unbalancing in a Polarization-Division-Multiplexing Scheme," **IEEE Photonics Technology Letters**, vol. **13**, pp. 881-883, 2001.
294. R. Khosravani and A. E. Willner, "System Performance Evaluation in Terrestrial Systems with High Polarization Mode Dispersion and the Effect of Chirping," **IEEE Photonics Technology Letters**, vol. **13**, pp. 296-298, 2001.
295. Y. Xie, Z. Pan, A.E. Willner, E. Salik, V. Grubsky, D. Starodubov, and J. Feinberg, "Spectrally-Efficient L-C Band EDFA Having a Seamless Inter-Band Channel Region using Sampled FBGs" **IEEE Photonics Technology Letters**, vol. **13**, pp. 436-438, 2001.
296. R. Khosravani, I.T. Lima Jr., P. Ebrahimi, E. Ibragimov, A.E. Willner, and C.R. Menyuk, "Time and Frequency Domain Characteristics of Polarization Mode Dispersion Emulators," **IEEE Photonics Technology Letters**, vol. **13**, pp. 127-129, 2001.
297. J.J. Yoo and A.E. Willner, "A Performance and Implementation Comparison of Bidirectional and Dual Bus 2-D WDM Multiple-Plane Optical Interconnections with Row-Column Multihop Network Structure," **IEEE/OSA J. of Lightwave Technology**, vol. **19**, pp. 801-809, 2001.
298. Y. Xie, S. Lee, Z. Pan, J.X. Cai, A.E. Willner, V. Grubsky, D.S. Starodubov, E. Salik, and J. Feinberg, "Tunable Compensation of the Dispersion Slope Mismatch in Dispersion-Managed Systems using a Sampled Nonlinearly-Chirped FBG," **IEEE Photonics Technology Letters**, vol. **12**, pp. 1417-1419, 2000.

**REFEREED PAPERS: (CONTINUED)**

299. S.A. Havstad, A.B. Sahin, O.H. Adamczyk, Y. Xie, and A.E. Willner, "Distance-Independent Microwave and Millimeter-Wave Power Fading Compensation using a Phase Diversity Configuration," **IEEE Photonics Technology Letters**, vol. **12**, pp. 1052–1054, 2000.
300. R. Khosravani, S. Lee, M.I. Hayee, and A.E. Willner, "Soliton Sampling of Subcarrier Multiplexed Signals to Suppress Dispersion-Induced RF Power Fading," **IEEE Photonics Technology Letters**, vol. **12**, pp. 1275–1277, 2000.
301. O.H. Adamczyk, S.A. Havstad, A.B. Sahin, M.C. Cardakli, S. Lee, and A.E. Willner, "Optical Subcarrier-Multiplexing for Output-Port Contention Resolution," **IEEE Photonics Technology Letters**, vol. **12**, pp. 1567-1569, 2000.
302. M.C. Cardakli, S. Lee, A.E. Willner, V. Grubsky, D. Starodubov, and J. Feinberg, "Reconfigurable All-Optical Packet Header Recognition and Routing using Time-to-Wavelength Mapping and Tunable Fiber Bragg Gratings for Correlation Decoding," **IEEE Photonics Technology Letters**, vol. **12**, pp. 552-554, 2000.
303. H. Sun, M.C. Cardakli, K.-M. Feng, J.-X. Cai, H. Long, M.I. Hayee, and A.E. Willner "Tunable RF-Power-Fading Compensation of Multiple-Channel Double-Sideband SCM Transmission using a Nonlinearly-Chirped FBG," **IEEE Photonics Technology Letters**, vol. **12**, pp. 546-548, 2000.
304. S. Lee, R. Khosravani, J. Peng, V. Grubsky, D.S. Starodubov, A.E. Willner, and J. Feinberg, "Adjustable Compensation of Polarization Mode Dispersion using a High-Birefringence, Nonlinearly-Chirped Fiber Bragg Grating," **IEEE Photonics Technology Letters**, vol. **11**, pp. 1277-1279, 1999.
305. J.-X. Cai, K.-M. Feng, A.E. Willner, V. Grubsky, D.S. Starodubov, and J. Feinberg, "Simultaneous Tunable Dispersion Compensation of Many WDM Channels using a Sampled Nonlinearly-Chirped Fiber-Bragg-Grating," **IEEE Photonics Technology Letters**, vol. **11**, pp. 1455-1457, 1999.
306. M.I. Hayee and A.E. Willner, "Transmission Penalties due to EDFA Gain Transients in Add/Drop Multiplexed WDM Networks," **IEEE Photonics Technology Letters**, vol. **11**, pp. 889-891, 1999.
307. S.A. Havstad B. Fischer A.E. Willner, and M.G. Wickham, "Loop-Mirror Filters Based on Saturable Gain or Absorber Gratings," **Optics Letters**, vol. **24**, pp. 1466-1468, 1999.
308. O.H. Adamczyk, M.C. Cardakli, J.-X. Cai, M.I. Hayee, C. Kim, and A.E. Willner, "Coarse and Fine Bit Synchronization for WDM Interconnections using Two Subcarrier-Multiplexed Control Pilot Tones," **IEEE Photonics Technology Letters**, vol. **11**, pp. 1057-1059, 1999.
309. K.-M. Feng, J.-X. Cai, V. Grubsky, D.S. Starodubov, M.I. Hayee, S. Lee, X. Jiang, A.E. Willner, and J. Feinberg, "Dynamic Dispersion Compensation in a 10-Gb/s Optical System using Novel Voltage Tuned Nonlinearly-Chirped Fiber Bragg Grating," **IEEE Photonics Technology Letters**, vol. **11**, pp. 373-375, 1999.
310. T. Sangsiri, S. Havstad, C. Kim, X. Jiang, B. Hoanca, and A.E. Willner, "Bit Synchronization using Subcarriers for Control Signaling in Optical Networks," **IEEE Photonics Technology Letters**, vol. **11**, pp. 602-604, 1999.
311. M.I. Hayee and A.E. Willner, "NRZ vs. RZ in 10-40 Gb/s Dispersion-Managed WDM Transmission Systems," **IEEE Photonics Technology Letters**, vol. **11**, pp. 991-993, 1999.
312. X. Jiang, M. Cardakli, K.M. Feng, J.X. Cai, A.E. Willner, V. Grubsky, D.S. Starodubov, and J. Feinberg, "Control Monitoring of Routing Bits and Data Packets in WDM Networks using Wavelength-to-Time Mapping," **IEEE Photonics Technology Letters**, vol. **11**, pp. 1186-1188, 1999.

**REFEREED PAPERS: (CONTINUED)**

313. R. Khosravani, M.I. Hayee, B. Hoanca, and A.E. Willner, "Reduction of Coherent Crosstalk in WDM Add/Drop Multiplexing Nodes by Bit Pattern Misalignment," **IEEE Photonics Technology Letters**, vol. **11**, pp. 134-136, 1999.
314. X. Jiang, X.P. Chen, and A.E. Willner, "All Optical Wavelength Independent Packet Header Replacement using a Long CW Region Generated Directly from the Packet Flag," **IEEE Photonics Technology Letters**, vol. **10**, pp. 1638-1640, 1998.
315. J.J. Yoo, J.E. Leight, C. Kim, G. Giaretta, W. Yuen, A.E. Willner, and C.J. Chang-Hasnain, "Experimental Demonstration of a Multihop Shuffle Network using WDM Multiple-Plane Optical Interconnections with VCSEL and MQW/DBR Detector Arrays," **IEEE Photonics Technology Letters**, vol. **10**, pp. 1507-1509, 1998.
316. W. Shieh, E. Park, and A.E. Willner, "Demonstration of Output-Port Contention Resolution in a WDM Switching Node Based on All-Optical Wavelength Shifting and Subcarrier-Multiplexed Routing Control Headers," **IEEE Photonics Technology Letters**, vol. **9**, pp. 1023-1025, 1997.
317. J.J. Yoo, J.E. Leight, G. Giaretta, W. Yuen, A.E. Willner, and C.J. Chang-Hasnain, "Experimental Demonstration of a 4-Plane 2-D Multiple-Wavelength Optical Interconnection using Integrated VCSEL Arrays And MQW/DBR Detectors," **IEEE Photonics Technology Letters**, vol. **9**, pp. 1646-1648, 1997.
318. X.P. Chen, B. Hoanca, K.-M. Feng, J.-X. Cai, and A.E. Willner, "Experimental Demonstration of Fast Simultaneous Wavelength Switching and Time Demultiplexing using a Nonlinear Optical Loop Mirror," **IEEE Photonics Technology Letters**, vol. **9**, pp. 919-921, 1997.
319. M.I. Hayee and A.E. Willner, "Pre- and Post-Compensation of Dispersion and Nonlinearities in 10 Gb/s WDM Systems," **IEEE Photonics Technology Letters**, vol. **9**, pp. 1271-1273, 1997.
320. W. Shieh and A.E. Willner, "A Wavelength-Routing Node using Multifunctional Semiconductor Optical Amplifiers and Multiple-Pilot-Tone-Coded Subcarrier Control Headers," **IEEE Photonics Technology Letters**, vol. **9**, pp. 1268-1270, 1997.
321. D. Norte and A.E. Willner, "Experimental Demonstration of a Multiple- $\lambda$  Wavelength Shifter for Dynamically Reconfigurable WDM Networks," **IEEE Photonics Technology Letters**, vol. **9**, pp. 922-924, 1997.
322. J.-X. Cai, K.-M. Feng, X.P. Chen, and A.E. Willner, "Equalization of Non-Uniform EDFA Gain using a Fiber Loop Mirror," **IEEE Photonics Technology Letters**, vol. **9**, pp. 916-918, 1997.
323. J.-X. Cai, K.-M. Feng, X.P. Chen, A. E. Willner, D. A. Smith, C.-H. Lee and Y.-J. Chen, "Experimental Demonstration of Dynamic High-Speed Equalization of Three WDM Channels using a Wavelength Demultiplexer and Acousto-Optic Modulators," **IEEE Photonics Technology Letters**, vol. **9**, pp. 678-680, 1997.
324. S.H. Huang, X.Y. Zou, S.-M. Hwang, A.E. Willner, Z. Bao, and D.A. Smith, "Experimental Demonstration of Active Equalization and ASE Suppression of Three 2.5 Gbit/s WDM-Network Channels over 2,500 km using AOTFs as Transmission Filters," **IEEE Photonics Technology Letters**, vol. **9**, pp. 389-391, 1997.
325. J.E. Leight, J. Yoo, and A.E. Willner, "System Design and Performance of Reconfigurable and Simultaneous 2-D Multiple-Plane WDM Optical Interconnects," **IEEE Electronics Letters**, vol. **33**, pp. 613-614, 1997.

**REFEREED PAPERS: (CONTINUED)**

326. J.-C. Wu, A.E. Willner, and J.A. Silvester, "Protocols to Eliminate Tuning Penalties for Packet-Switched WDM Star Networks with Large Tuning Latency," **Journal of High Speed Networks**, vol. 6, no. 1, pp. 15-31. (IOS Press), 1997.
327. E. Park and A.E. Willner, "Network Demonstration of Self-Routing Wavelength Packets using an All-Optical Wavelength Shifter and QPSK Subcarrier Routing Control," **IEEE Photonics Technology Letters**, vol. 8, pp. 938-940, 1996.
328. S.H. Huang, X.Y. Zou, S.-M. Hwang, A.E. Willner, Z. Bao, and D.A. Smith, "Experimental Demonstration of Dynamic Network Equalization of Three 2.5 Gbit/s WDM Channels over 1,000 km using Acousto-Optic Tunable Filters," **IEEE Photonics Technology Letters**, vol. 8, pp. 1243-1245, 1996.
329. D. Norte and A.E. Willner, "Demonstration of an All-Optical Data Format Transparent WDM-to-TDM Network Node With Extinction Ratio Enhancement for Reconfigurable WDM Networks," **IEEE Photonics Technology Letters**, vol. 8, pp. 715-717, 1996.
330. W. Shieh, E. Park and A.E. Willner, "All-Optical Wavelength Shifting of Microwave Subcarriers by using Four-Wave Mixing in a Semiconductor Optical Amplifier," **IEEE Photonics Technology Letters**, vol. 8, pp. 524-546, 1996.
331. S.-M. Hwang, X.Y. Zou, S.H. Huang, W. Shieh, and A.E. Willner, "Passive Equalization of Four 2.5-Gbit/s WDM Channels over 1,000 km using Notch Filters," **IEEE Electronics Letters**, vol. 32, pp. 676-677, 1996.
332. D. Norte and A.E. Willner, "Experimental Demonstrations of All-Optical Conversions Between the RZ and NRZ Data Formats Incorporating Noninverting Wavelength Shifting Leading to Format Transparency," **IEEE Photonics Technology Letters**, vol. 8, pp. 712-714, 1996.
333. W. Shieh, S.H. Huang, and A.E. Willner, "A Polarization-Independent and Contrast-Ratio-Enhancing Module for All-Optical Wavelength Shifting using SOA's," **IEEE Photonics Technology Letters**, vol. 8, pp. 533-535, 1996.
334. J.E. Leight and A.E. Willner, "Reduced Switching Delay in Wavelength-Division-Multiplexed 2-D Multiple-Plane Optical Interconnections using Multiple-Wavelength VCSEL Arrays," **IEEE/OSA J. of Lightwave Technology**, vol. 14, pp. 1467-1479, 1996.
335. D. Norte and A.E. Willner, "All-Optical Data Format Conversions and Reconversions Between the Wavelength and Time Domains for Dynamically Reconfigurable WDM Networks," **IEEE/OSA J. of Lightwave Technology and IEEE J. on Selected Areas in Communications**, Special Issue on Multiple-Wavelength Technologies and Networks, vol. 14, pp. 1170-1182, 1996.
336. X.Y. Zou, M.I. Hayee, S.-M. Hwang, and A.E. Willner, "Limitations in 10 Gbit/s WDM Optical-Fiber Transmission When using a Variety of Fiber Types to Manage Dispersion and Nonlinearities," **IEEE/OSA J. of Lightwave Technology and IEEE J. on Selected Areas in Communications**, Special Issue on Multiple-Wavelength Technologies and Networks, vol. 14, pp. 1144-1152, 1996.
337. D.A. Smith, R.S. Chakravarthy, Z. Bao, J.E. Baran, J.L. Jackel, A. d'Alessandro, D.J. Fritz, S.H. Huang, X.Y. Zou, S.-M. Hwang, A.E. Willner, and K. Li, "Evolution of the Acousto-Optic Wavelength-Routing Switch," **IEEE/OSA J. of Lightwave Technology and IEEE J. on Selected Areas in Communications**, Special Issue on Multiple-Wavelength Technologies and Networks, vol. 14, pp. 1005-1019, 1996.
338. J.E. Leight, S. Homan, A.E. Willner, G. Giaretta, M.Y. Li, and C.J. Chang-Hasnain, "Experimental Demonstration of a Reconfigurable and Simultaneous Wavelength-Division-Multiplexed Multiple-Plane Optical Interconnections," **IEEE Photonics Technology Letters**, vol. 8, pp. 302-304, 1996.



**REFEREED PAPERS: (CONTINUED)**

339. X.Y. Zou, S.-M. Hwang, and A.E. Willner, "Compensation of Raman Scattering and EDFA's Non-Uniform Gain in Ultra-Long-Distance WDM Links," **IEEE Photonics Technology Letters**, vol. **8**, pp. 139-141, 1996.
340. A.D. Norte and A.E. Willner, "Multi-Stage All-Optical WDM-to-TDM-to-WDM and TDM-to-WDM-to-TDM Data Format Conversion and Reconversion Through 80 km of Fiber and 3 EDFAs," **IEEE Photonics Technology Letters**, vol. **7**, pp. 1354-1356, 1995.
341. W. Shieh and A.E. Willner, "Optimal Conditions for High-Speed All-Optical SOA-Based Wavelength Shifting," **IEEE Photonics Technology Letters**, vol. **7**, pp. 1273-1275, 1995.
342. S. Homan and A.E. Willner, "High-Capacity Optical Storage using Multiple Wavelengths, Multiple Layers, and Volume Holograms," **IEE Electronics Letters**, vol. **31**, pp. 621-623, 1995.
343. A.E. Willner and S.-M. Hwang, "Transmission of Many WDM Channels Through a Cascade of EDFA's in Long-Distance Link and Ring Networks," **IEEE/OSA J. of Lightwave Technology**, Special Issue on Optical Amplifiers and Their Applications, vol. **13**, pp. 802-816, 1995.
344. A.E. Willner and W. Shieh, "Optimal Spectral and Power Parameters for All-Optical Wavelength Shifting: Single Stage, Fanout, and Cascadability," **IEEE/OSA J. of Lightwave Technology**, Special Issue on Optical Amplifiers and Their Applications, vol. **13**, pp. 771-781, 1995.
345. E. Park, D. Norte, and A.E. Willner, "Simultaneous All-Optical Header Replacement and Wavelength Shifting for a Dynamically-Reconfigurable WDM," **IEEE Photonics Technology Letters**, vol. **7**, pp. 810-812, 1995.
346. A.D. Norte, E. Park, and A.E. Willner, "All-Optical TDM-to-WDM Data-Format Conversion in a Dynamically-Reconfigurable WDM Network," **IEEE Photonics Technology Letters**, vol. **7**, pp. 920-922, 1995.
347. K.-C. Lee, V.O.K. Li, S.-M. Hwang, and A.E. Willner, "Multi-Wavelength Optical Networks with Wavelengths Outside the Erbium-Doped Fiber Amplifier Bandwidth," **IEEE/OSA J. of Lightwave Technology**, Special Issue on Optical Amplifiers and Their Applications, vol. **13**, pp. 791-801, 1995.
348. A.E. Willner and S.-M. Hwang, "Optically-Amplified WDM Ring Network Incorporating Channel-Dropping Filters," **IEEE Photonics Technology Letters**, vol. **6**, pp. 760-763, 1994.
349. A.D. Norte, A.E. Willner, W. Shieh, and A.R. Tanguay, Jr., "Multiple-Plane Optical Interconnections using Through-Wafer Hollow Dielectric Waveguide Vias," **IEEE Photonics Technology Letters**, vol. **6**, pp. 851-854, 1994.
350. A.E. Willner, C.J. Chang-Hasnain, and J.E. Leight, "2-D WDM Optical Interconnects using Multiple-Wavelength VCSEL's for Simultaneous and Reconfigurable Communication Between Many Planes," **IEEE Photonics Technology Letters**, vol. **5**, pp. 838-841, 1993.
351. A.E. Willner and S.-M. Hwang, "Passive Equalization of Non-Uniform EDFA Gain by Optical Filtering for Megameter Transmission of 20 WDM Channels through a Cascade of EDFA's," **IEEE Photonics Technology Letters**, vol. **5**, pp. 1023-1026, 1993.
352. S.-M. Hwang and A.E. Willner, "Guidelines for Optimizing System Performance for 20 WDM Channels Propagating through a Cascade of EDFA's," **IEEE Photonics Technology Letters**, vol. **5**, pp. 1190-1193, 1993.

**REFEREED PAPERS: (CONTINUED)**

353. M.W. Maeda, A.E. Willner, J.R. Wullert II, J. Patel, and M. Allersma, "Wavelength-Division Multiple-Access Network Based on Centralized Common-Wavelength Control," **IEEE Photonics Technology Letters**, vol. **5**, pp. 83-86, 1993.
354. A.E. Willner, "SNR Analysis of Crosstalk and Filtering Effects in an Amplified Multi-Channel Direct-Detection Dense-WDM System," **IEEE Photonics Technology Letters**, vol. **4**, pp. 186-189, 1992.
355. A.E. Willner, T. Chapuran, J.R. Wullert II, J. Meyer, and T.P. Lee, "Performance of Random-Wavelength-Switching of a DBR Laser using Packet Headers for Routing," **IEEE Electronics Letters**, vol. **28**, pp. 1526-1528, 1992.
356. H.M. Presby, S. Yang, A.E. Willner, and C.A. Edwards, "Connectorized Integrated Star Couplers on Silicon," **Optical Engineering**, vol. **31**, pp. 1323-1327, 1992.
357. A.E. Willner, A.A.M. Saleh, H.M. Presby, D.J. DiGiovanni, and C.A. Edwards, "Star Couplers with Gain using Multiple Erbium-Doped Fibers Pumped with a Single Laser," **IEEE Photonics Technology Letters**, vol. **3**, pp. 250-252, 1991.
358. A.E. Willner and E. Desurvire, "Effect of Gain Saturation on Receiver Sensitivity in 1 Gb/s Multichannel FSK Direct-Detection Systems using Erbium-Doped Fiber Preamplifiers," **IEEE Photonics Technology Letters**, vol. **3**, pp. 259-261, 1991.
359. A.E. Willner, E. Desurvire, H.M. Presby, C.A. Edwards, and J. Simpson, "LD-Pumped Erbium-Doped Fiber Preamplifiers with Optimal Noise Filtering in a FDMA-FSK 1 Gb/s Star Network", **IEEE Photonics Technology Letters**, vol. **2**, pp. 669-672, 1990.
360. A.E. Willner, I.P. Kaminow, M. Kuznetsov, J. Stone, and L.W. Stulz, "1.2 Gb/s Closely Spaced FDMA-FSK Direct-Detection Star Network," **IEEE Photonics Technology Letters**, vol. **2**, pp. 223-226, 1990.
361. M.N. Ruberto, X. Zhang, R. Scarmozzino, A.E. Willner, D.V. Podlesnik, and R.M. Osgood, Jr., "The Laser-Controlled Micrometer-Scale Photochemical Etching of III-V Semiconductors," **J. Electrochemical Society**, vol. **138**, pp. 1174-1185, 1991.
362. A.E. Willner, "Simplified Model of a FSK-to-ASK Direct-Detection System using a Fabry-Perot Demodulator", **IEEE Photonics Technology Letters**, vol. **2**, pp. 363-366, 1990.
363. A.E. Willner, D. V. Podlesnik and R. M. Osgood, Jr., "600  $\mu\text{m}/\text{min}$  Laser-Induced Nonthermal Etching of GaAs in an HF Solution", **IEEE Electronics Letters**, vol. **26**, pp. 568-569, 1990.
364. A.E. Willner, M. Kuznetsov, I.P. Kaminow, J. Stone, L. Stulz, and C.A. Burrus, "FM/FSK Response of Tunable Two-Electrode DFB Lasers and Their Performance with Noncoherent Detection," **IEEE Photonics Technology Letters**, vol. **1**, pp. 412-415, 1989.
365. A.E. Willner, M. Kuznetsov, I.P. Kaminow, U. Koren, T.L. Koch, C.A. Burrus, and G. Raybon, "Multi-Gigahertz Bandwidth FM Response of Frequency Tunable Two-Electrode DFB Lasers," **IEEE Photonics Technology Letters**, vol. **1**, pp. 360-363, 1989.
366. M. Kuznetsov, A.E. Willner, and I.P. Kaminow, "Frequency Modulation Response of Two-Segment Distributed Feedback Laser," **Applied Physics Letters**, vol. **55**, pp. 1826-1828, 1989.
367. A.E. Willner, I.P. Kaminow, M. Kuznetsov, J. Stone, and L.W. Stulz, "FDMA-FSK Noncoherent Star Network Operated at 600 Mb/s using Two-Electrode DFB Lasers and a Fiber Optical Filter Demultiplexer," **Electronics Letters**, vol. **25**, pp. 1600-1601, 1989.

**REFEREED PAPERS: (CONTINUED)**

368. R. Scarmozzino, D.V. Podlesnik, A.E. Willner and R.M. Osgood, Jr., "Modeling of Riblike Waveguides with Isolation Trenches of Finite Width", **Applied Optics**, vol. **28**, pp. 5203-5206, 1989.
369. M.N. Ruberto, A.E. Willner, D.V. Podlesnik, and R.M. Osgood, Jr., "The Effect of Photogenerated Carrier Confinement on the Laser-Controlled Aqueous Etching of GaAs/AlGaAs Heterostructures," **Applied Physics Letters**, vol. **55**, pp. 984-986, 1989.
370. A.E. Willner, M.N. Ruberto, D.J. Blumenthal, D.V. Podlesnik, and R.M. Osgood, Jr., "Laser Fabricated GaAs Waveguiding Structures," **Applied Physics Letters**, vol. **54**, pp. 1839-1841, 1989.
371. A.E. Willner, **Laser-Controlled Photochemical Etching of Semiconductors for Electrooptical Devices**, Ph.D. Thesis, Columbia University, 1988. **European Conference on Optical Communications (ECOC)**, paper P.3.18, Cannes, France, Sept. 2014.
372. A.E. Willner, M.N. Ruberto, D.V. Podlesnik, and R.M. Osgood, Jr., "Laser Direct Writing of Integrated Optical Components in the GaAs/AlGaAs System," **Journal of the Electrochemical Society**, vol. **135**, no. 9, pp. c451-c452, 1988.
373. A.E. Willner, D.V. Podlesnik, H.H. Gilgen, and R.M. Osgood, Jr., "Photobias Effect in Laser-Controlled Etching of InP," **Applied Physics Letters**, vol. **53**, pp. 1198-1200, 1988.
374. D.V. Podlesnik, H.H. Gilgen, A.E. Willner and R.M. Osgood, Jr., "The Interaction of Deep Ultraviolet Laser Light with GaAs Surfaces in Aqueous Solutions," **Journal of the Optical Society of America B**, vol. **3**, pp. 775-784, 1986.

**INVITED PAPERS:**

1. Yongxiong Ren, Cong Liu, Kai Pang, Jiapeng Zhao, Yinwen Cao, Guodong Xie, Long Li, Zhe Zhao, Zhe Wang, Moshe Tur, Robert Boyd, Alan Willner, "Experimental Demonstration of an Orbital-Angular-Momentum Encoded Quantum Communication Link Co-propagating with a Classical Channel," **Invited Paper, APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SW4I, San Jose, CA, May 2017 (Optical Society of America, Wash., D.C., 2017).

*\* Contributed Paper highly ranked by conference committee and upgraded to Invited Paper status. \**

2. Alan E. Willner, "Structured Light Using OAM and Wavelength Domains for Terabit/sec Communications," **Invited Presentation, APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, San Jose, CA, May 2017 (Optical Society of America, Wash., D.C., 2017).
3. Alan E. Willner, "High-Capacity Optical and Millimeter-Wave Communications Using Multiplexing of Multiple Orbital-Angular-Momentum Beams," **Invited Seminar, Armstrong Memorial Distinguished Lecture and Dept. of Electrical Engineering Distinguished Lecture, Columbia University**, New York, NY, Dec. 2017.
4. Alan E. Willner, "High-Capacity Optical Communications Using Multiplexing of Multiple Orbital-Angular-Momentum Beams," **Invited Colloquium, Department of Physics, University of Colorado at Boulder**, Boulder, CO, March 2017.
5. Alan E. Willner, "High-Capacity Communications using Multiplexing of Multiple Orbital-Angular-Momentum Beams," **Keynote Presentation, Society of Photo-Instrumentation Engineers (SPIE) Photonics West, Complex Light and Optical Forces XI**, paper 10120-31, San Francisco, CA, Feb. 2017 (SPIE, Bellingham, Wash., 2017).

**INVITED PAPERS: (CONTINUED)**

6. Alan E. Willner, "Design Challenges and Potential Mitigation Approaches for Orbital Angular Momentum-Multiplexed Free-Space Links," **Keynote Presentation, Society of Photo-Instrumentation Engineers (SPIE) Photonics West, Quantum Sensing and Nano Electronics and Photonics XIV**, paper 10111-96, San Francisco, CA, Feb. 2017 (SPIE, Bellingham, Wash., 2017).
7. Alan E. Willner, "Optical Delays to Achieve Optical Signal Processing Functions," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West, Slow Light, Fast Light, and Opto-Atomic Precision Metrology X**, paper 10119-59, San Francisco, CA, Feb. 2017 (SPIE, Bellingham, Wash., 2017).
8. Moshe Tur, Guodong Xie and Alan Willner, "Fiber Amplifiers and Lasers using Orbital Angular Momentum (OAM) Optical Modes," **Invited Paper, IFLA - International Meeting on Fiber Lasers and Applications**, Tel Aviv University, Israel, Feb. 2017.
9. Alan E. Willner, "High-Capacity Optical Communications Using Multiplexing of Multiple Orbital-Angular-Momentum Beams," **Distinguished Lecture Series, School of Computing and Information Science, Florida International University**, Miami, FL, Jan. 2017.
10. Alan E. Willner, Yongxiong Ren, Guodong Xie, Yan Yan, Long Li, Zhe Zhao, Jian Wang, Moshe Tur, Andreas F. Molisch, and Solyman Ashrafi, "Recent Advances in High-Capacity Free-Space Optical and Radio-Frequency Communications using Orbital Angular Momentum Multiplexing", **Invited Paper, Phil. Trans. R. Soc. A**, vol. **375**, no. 2087, pp. 1-18, Feb. 2017.
11. Halina Rubinsztein-Dunlop, Andrew Forbes, M.V. Berry, M.R. Dennis, David L. Andrews, Masud Mansuripur, Cornelia Denz, Christina Alpmann, Peter Banzer, Thomas Bauer, Ebrahim Karimi, Lorenzo Marrucci, Miles Padgett, Monika Ritsch-Marte, Natalia M. Litchinitser, Nicholas P. Bigelow, C. Rosales-Guzmán, A Belmonte, J.P. Torres, Tyler W. Neely, Mark Baker, Reuven Gordon, Alex Stilgoe, Jacqueline Romero, Andrew G. White, Robert Fickler, Alan E. Willner, Guodong Xie, Benjamin McMorran, and Andrew M. Weiner, "Roadmap on Structured Light", **Invited Paper, Journal of Optics**, vol. **19**, no. 1, pp. 1-52, Jan. 2017.
12. Alan E. Willner, Guodong Xie, Long Li, Yongxiong Ren, Yan Yan, Nisar Ahmed, Zhe Zhao, Zhe Wang, Cong Liu, Asher Willner, Nima Ashrafi, Solyman Ashrafi, Moshe Tur, and Andreas Molisch, "Design Challenges and Guidelines for Free-Space Optical Communication Links using Orbital-Angular-Momentum Multiplexing of Multiple Beams," **Invited Paper, Journal of Optics**, vol **18**, no. 7, pp. 074014, 2016.  
  
*\* Selected by the editors of Journal of Optics as a Highlight of 2016. \**
13. Alan E. Willner, "High Capacity Optical Communications using Orbital-Angular Momentum Beam Multiplexing," **Plenary Presentation, The International Conference on Fiber Optics and Photonics (PHOTONICS 2016)**, paper W1A.3, the Indian Institute of Technology, Kanpur, India, Dec. 2016.
14. Zhe Zhao, Yongxiong Ren, Guodong Xie, Long Li, Yan Yan, Nisar Ahmed, Zhe Wang, Cong Liu, Asher J. Willner, Solyman Ashrafi, and Alan E. Willner, "Division and Multiplication of The State Order for Data-Carrying Orbital Angular Momentum Beams", **Invited Article, APL Photonics**, vol. **1**, no. 9, Dec. 2016.  
  
*\* #1 most read APL Photonics article for several weeks in early 2017. \**
15. Alan E. Willner, "High-Capacity Communications using Multiplexing of Multiple Orbital-Angular-Momentum Beams," **Plenary Presentation, Physics of Quantum Electronics (PQE) Meeting**, Snowbird, UT, Jan. 2017.

**INVITED PAPERS: (CONTINUED)**

16. Alan E. Willner, "Innovations Abound in Functional Optical Communications," **Plenary Presentation, IEEE/OSA/SPIE Asia Communications and Photonics Conference (ACP)**, Wuhan, China, Nov. 2016 (Optical Society of America, Washington, D.C., 2016).
17. Alan E. Willner, "Perspectives on Using OAM Multiplexing and Encoding for Communications," **Invited Paper, IEEE/OSA/SPIE Asia Communications and Photonics Conference Workshop on Twisting Light with Orbital Angular Momentum (OAM): Advances and Opportunities**, Wuhan, China, Nov. 2016 (Optical Society of America, Washington, D.C., 2016).
18. Joe Touch, Yinwen Cao, Morteza Ziyadi, Ahmed Almainan, Amirhossein Mohajerin Ariaei, Alan E. Willner, "Digital Optical Processing of Optical Communications: Towards an Optical Turing Machine," **Invited Paper, Journal of Nanophotonics**, vol. 6, no. 3, pp. 507-530, 2017.
19. Alan E. Willner, "Advocating for Optics and Photonics," **Plenary Presentation, Optics & Photonics Japan 2016**, Tokyo, Japan, Oct. 2016.
20. Alan E. Willner, Long Li, Guodong Xie, Yongxiong Ren, Hao Huang, Yang Yue, Nisar Ahmed, Moshe J. Willner, Asher J. Willner, Yan Yan, Zhe Zhao, Zhe Wang, Cong Liu, Moshe Tur, and Solyman Ashrafi, "Orbital-Angular-Momentum-Based Reconfigurable Optical Switching and Routing," **Invited Paper, Photon. Res.**, vol. 4, no. 5, pp. B5-B8, 2016.  
  
*\*Journal issue cover is taken from this paper. \**
21. Alan E. Willner, "Twisted Light Could Dramatically Boost Data Rates," **Invited Feature Paper, IEEE Spectrum**, pp. 34-39, New York, August 2016.
22. Alan E. Willner, "Tunable Optical Delays with Complex Weights to Achieve Reconfigurable and High-Speed Optical-Signal-Processing Functions," **Invited Paper, IEEE Photonics Society Summer Topical Meeting**, paper MD1.2, Newport Beach, California, July 2016 (IEEE, Piscataway, NJ, 2016).
23. Alan E. Willner, "Free-Space Communications using Orbital-Angular-Momentum Multiplexing of Multiple Beams," **Invited Paper, IEEE Photonics Society Summer Topical Meeting**, paper MC3.1, Newport Beach, California, July 2016 (IEEE, Piscataway, NJ, 2016).
24. Joe Touch, Yinwen Cao, Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Ahmed Almainan and Alan E. Willner, "A Candidate Approach for Optical In-Network Computation," **Invited Paper, IEEE Photonics Society Summer Topical Meeting**, paper MD1.1, Newport Beach, California, July 2016 (IEEE, Piscataway, NJ, 2016).
25. Alan E. Willner, "Emulating and Mitigating Atmospheric Effects in Free-Space OAM-based Communications Links," **Invited Paper, Propagation Through and Characterization of Atmospheric and Oceanic Phenomena**, paper. Tu4A.3, Washington, DC, June 2016.
26. Alan E. Willner, "Optical Signal Processing for Functional Subsystems," **Invited Paper, Green Photonics Symposium**, Haifa, March 2016.
27. Alan E. Willner, "Physics Behind Optical Fiber Communications: Technologies that Drive the Internet Capacity Growth," **Invited Paper, American Physical Society (APS) March Meeting 2016**, Baltimore, March 2016.
28. Bishara Shamee, Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Ahmed Almainan, Yinwen Cao, Nisar Ahmed, Steven R. Wilkinson and Alan E. Willner, "Smoothly Clipped Root Raised Cosine Waveforms for an Effective Loading of a Coherent Optical M-QAM Modulator," **Invited Paper, Society of Photo-**

**INVITED PAPERS: (CONTINUED)**

**Instrumentation Engineers (SPIE) Photonics West, Advanced Modulation Format and DSP I**, paper 9774-9, San Francisco, CA, Feb. 2016 (SPIE, Bellingham, Wash., 2016).

29. Alan E. Willner, "Innovation in Photonics R&D," **Invited Presentation, Lloyd Greif Center for Entrepreneurial Studies, Marshall School of Business, USC**, Jan 28, 2015 and Jan. 26, 2016.
30. Yongxiong Ren, Guodong Xie, Asher J. Willner, Nisar Ahmed, Long Li, Zhe Wang, and Alan E. Willner, "Challenges and Opportunities in using Orbital Angular Momentum for Communication Links," **Invited Presentation, Asia Communications and Photonics Conference (ACP) Workshop on Recent Advances in Space-Division Multiplexing (SDM)**, Hong Kong, China, Nov. 2015 (Optical Society of America, Wash., D.C., 2015).
31. Alan E. Willner, "High-Capacity Optical Communications using Multiplexing of Multiple Orbital-Angular-Momentum Modes," **Invited Presentation, 2015 IEEE Photonics Santa Clara Valley Photonics Society Chapter**, Santa Clara, CA, Nov. 2015 (IEEE/LEOS, Piscataway, New Jersey, 2015).
32. Alan E. Willner, "High-Capacity Free-Space Optical Communications Using Multiplexing of Multiple Orbital-Angular-Momentum Modes," **Keynote Presentation, Annual International Workshop (IWOW) of the EU COST Action 1101 OPTICWISE**, Istanbul, Turkey, Sept. 2015.
33. Alan E. Willner, "The National Photonics Initiative and Integrated Photonics," **Invited Presentation, New York Photonics Annual Meeting**, Rochester, NY, Sept. 2015.
34. Alan E. Willner, "Optics and Photonics; Essential Technologies for our World", **Plenary Presentation, New Mexico International Year of Light Event**, Albuquerque, NM, Sept. 2015.
35. Alan E. Willner, "High-speed Communications using Multiplexing of Multiple Orbital-Angular-Momentum Beams," **Plenary Presentation, 3rd International Conference on Optical Angular Momentum (ICOAM)**, paper OAM01-65, New York, NY, Aug. 2015 (SPIE, Bellingham, Wash., 2015).
36. Jeng-Yuan Yang, Youichi Akasaka, Motoyoshi Sekiya, Amirhossein Mohajerin Ariaei, Morteza Ziyadi, Yinwen Cao, Ahmed Almaiman, Alan Willner, Joe Touch, Sigehiro Takasaka, and Ryuichi Sugizaki, "PSA and PSA-Based Optical Regeneration for Extending the Reach of Spectrally Efficient Advanced Modulation Formats," **Invited Paper, IEEE Photonics Society Summer Topical Meeting**, paper TuF2.1, Nassau, Bahamas, July 2015 (IEEE, Piscataway, NJ, 2015).
37. Alan E. Willner, "Increasing Transmission Capacity and Spectral Efficiency in Millimeter-wave Free-Space Links by Multiplexing of Multiple Orbital-Angular-Momentum Beams," **Invited Presentation, Intel Workshop**, Portland, July 2015.
38. Alan E. Willner, "High-Capacity Millimeter-Wave Communications using Orbital-Angular-Momentum Multiplexing," **Invited Presentation, URO 5G Seminar Series**, Webcast, June 2015.
39. Alan E. Willner, Hao Huang, Yan Yan, Yongxiong Ren, Nisar Ahmed, Guodong Xie, Changjing Bao, Long Li, Yinwen Cao, Zhe Zhao, Zhe Wang, Martin P. J. Lavery, Moshe Tur, Siddharth Ramachandran, Andreas F. Molisch, Nima Ashrafi, and Solyman Ashrafi, "Optical Communications using Orbital Angular Momentum Beams," **Invited Paper, Advances in Optics and Photonics**, vol. 7, no. 1, pp. 66-106, 2015.  
*\* #1 downloaded AOP paper for April and May, #5 in June and #7 in July 2015. \**  
*\* #1 cited article published in the Advances in Optics and Photonics (AOP) from Mar. 2015 to Mar. 2017. \**
40. Mohammad Reza Chitgarha, Amirhossein Mohajerin-Ariaei, Yinwen Cao, Morteza Ziyadi, Salman Khaleghi, Ahmed Almaiman, Joseph D. Touch, Carsten Langrock, Martin M. Fejer, and Alan E. Willner,

**INVITED PAPERS: (CONTINUED)**

- "Tunable Homodyne Detection of an Incoming QPSK Data Signal using Two Fixed Pump Lasers," **Invited Paper, IEEE/OSA Journal of Lightwave Technology**, vol. **33**, pp.1344-1350, 2015.
41. Alan E. Willner, "Orbital-Angular-Momentum Multiplexing for High-Capacity Free-Space Optical Communications," **Invited Paper, Application of Lasers to Sensing and Free Space Optical Communication**, paper LTh1C.1, Arlington, VA, Jun. 2015 (Optical Society of America, Washington, D.C., 2015).
  42. Avi Motil, Ido Sovran, Raanan Hadar, Arik Bergman, Asher Vokoboink, Alan Willner, and Moshe Tur, "Optical Communications using Multiplexing of Multiple Orbital-Angular-Momentum Beams," **Invited Paper, 20th Opto-Electronics and Communications Conference (OECC)**, paper WE9F-4, Shanghai, China, June 2015.
  43. Alan E. Willner, "Optics and Photonics: Essential Technologies for Society," **Invited Seminar, World Metrology Day Event, National Institute of Standards and Technology (NIST)**, Gaithersburg, MD, May 2015.
  44. Alan E. Willner, "Real-time Analytics in Optical Networks: Correlation and Performance Monitoring," **Invited Presentation, 6th Danish-Californian Workshop on Big Data and Real Time Analytics in Photonics**, University of California, Los Angeles, Mar. 2015.
  45. Alan E. Willner, "Tunable Optical Delays for Implementing High-speed Optical Signal Processing Functions," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West, Slow Light, Fast Light, and Opto-Atomic Precision Metrology VIII Conference**, paper 9378-10, San Francisco, CA, Feb. 2015 (SPIE, Bellingham, Wash., 2015).
  46. Alan E. Willner, "Activities of the National Photonics Initiative Related to Advanced Lithography," **Plenary Presentation, 2015 SPIE Advanced Lithography Symposium**, San Jose, CA, Feb. 2015 (SPIE, Bellingham, Wash., 2015).
  47. Amirhossein Mohajerin-Ariaei, Morteza Ziyadi, Mohammad Reza Chitgarha, and Alan E. Willner, "All-optical Implementation of Signal Processing Functions," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West, Optical Metro Networks and Short-Haul Systems VII Conference**, paper 9388-7, San Francisco, CA, Feb. 2015 (SPIE, Bellingham, Wash., 2015).
  48. Alan E. Willner, "Structured Light," **Invited Presentation, Photonically Optimized Embedded Microprocessors (POEM) Workshop, DARPA MTO**, Phoenix, October 2014.
  49. Martin P.J. Lavery, Giovanni Milione, Thien An Nguyen, Hao Huang, Guodong Xie, Dan A. Nolan, Robert R. Alfano, and Alan E. Willner, "Demonstration of Vector Mode Multiplexing and Demultiplexing in a 160 Gbit/s Free-space link," **Invited Paper, European Conference on Optical Communications (ECOC)**, paper We.3.6.1, Cannes, France, Sept. 2014.
  50. Alan E. Willner, "Advances in Optical Orbital-Angular-Momentum Multiplexing," **Invited Paper, International Nano-Optoelectronic Workshop (iNOW)**, St. Petersburg, Russia, Aug. 2014.
  51. Alan E. Willner, "High-Capacity Millimeter-Wave Communications using Orbital-Angular-Momentum Multiplexing," **Invited Presentation, URO 5G Seminar Series**, Webcast, August 2014.
  52. Alan E. Willner, Hao Huang, Nisar Ahmed, Yang Yue, Moshe J. Willner, "Data Switching in Communication Networks using Orbital-Angular-Momentum Multiplexing," **Invited Paper, Advanced Photonics for Communications 2014**, paper PT1B.1, San Diego, CA, Jul. 2014 (Optical Society of America, 2014).

**INVITED PAPERS: (CONTINUED)**

53. Alan E. Willner, "Optical Communications using Multiplexing of Multiple Orbital-Angular-Momentum Beams," **Plenary Presentation, 19th Opto-Electronics and Communications Conference (OECC)**, Melbourne, Australia, July 2014.
54. Alan E. Willner, "Exciting Prospects for Optical Signal Processing," **Plenary Presentation, Seventh International Photonics and Optoelectronics Meetings (POEM 2014)**, Wuhan, China, June 2014.
55. Alan E. Willner, "Free Space Optical Communications Using Orbital Angular Multiplexing: Turbulence Effects," **Invited Presentation, Seventh International Photonics and Optoelectronics Meetings (POEM 2014) Workshop on Orbital Angular Momentum (OAM) and its Applications**, Wuhan, China, June 2014.
56. Alan E. Willner, Yongxiong Ren, Hao Huang, Yan Yan, Nisar Ahmed, Guodong Xie, Jian Wang, Yang Yue, Martin P. J. Lavery, Miles J. Padgett, Moshe Tur, Nenad Bozinovic, and Siddharth Ramachandran, and Long Li, "Optical Communications using Multiplexing of Multiple Orbital-Angular-Momentum Beams," **Invited Paper, Newsletter of the IEEE Lasers and Electro-Optics Society**, June. 2014 (IEEE/LEOS, Piscataway, New Jersey, 2014).
57. Nisar Ahmed, Hao Huang, Yongxiong Ren, Yan Yan, Guodong Xie, Moshe Tur, and Alan E. Willner, "Reconfigurable 2x2 Orbital Angular Momentum Based Optical Switching of 50-Gbaud QPSK Channels," **Invited Paper, Optics Express**, Special Issue on European Conference on Optical Communications, vol. **22**, no. 1, pp. 756-761, 2014.
58. Alan E. Willner, "U.S. Leadership Role in Optical R&D: A Researcher's (and National Academies' Optics and Photonics) Perspective," **Invited Presentation, Optoelectronics Industry Development Association (OIDA) Focus Group Meeting on Integrated Photonics Manufacturing**, Washington, May 2014.
59. Alan E. Willner, Salman Khaleghi, Mohammad Reza Chitgarha, and Omer Faruk Yilmaz, "All-Optical Signal Processing," **Invited Paper, IEEE/OSA J. Lightwave Technol.**, vol. 32, no. 4, pp. 660-680, 2014.
60. Jian Wang and Alan E. Willner "using Orbital Angular Momentum Modes for Optical Transmission," **Invited Paper, IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper W4J.5, San Francisco, CA, Mar. 2014 (Optical Society of America, Washington, D.C., 2014).
61. Joe Touch, Joseph Bannister, Stephen Suryaputra, and Alan E. Willner, "A Design for an Internet Router With a Digital Optical Data Plane," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 9008-8, Feb. 2014, San Francisco, CA (SPIE, Bellingham, Wash., 2014).
62. Alan E. Willner, "2D and WDM Correlators using Tunable Optical Delays," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 8998-47, Feb. 2014, San Francisco, CA (SPIE, Bellingham, Wash., 2014).
63. Alan E. Willner, "Innovations Continue to Make the Future of Optical Communications Exciting," **Plenary Presentation, 19th Opto-Electronics and Communications Conference (OECC)**, Melbourne, Australia, July 2014.
64. Alan E. Willner, "Tbit/s Optical Communications using Multiplexing of Multiple Orbital-Angular-Momentum Modes," **Plenary Presentation**, Optical Society of Korea Winter Meeting, Feb. 2014.
65. Alan E. Willner, "Exciting Prospects for Optical Signal Processing," **Invited Seminar**, KAIST, Daejeon, Korea, Feb. 2014.



**INVITED PAPERS: (CONTINUED)**

66. Alan E. Willner, "The National Academies' Report on Optics and Photonics: The Road to a National Photonics Initiative," **Invited Paper**, APS March Meeting, Denver, March 2014 (American Physical Society, NY, 2014).
67. Alan E. Willner, "Orbital Angular Momentum Multiplexing," **Invited Presentation, 5th Danish-Californian Workshop on Photonic Technologies for Communication and Sensing**, University of California, Berkeley, Feb. 2014.
68. Alan E. Willner, "Technologies in Lightwave Communications: Innovations (and their Needs) Abound," **Plenary Presentation, Asia Communications and Photonics Conference 2013**, paper AW1A.1, Beijing, China, Nov. 2013 (Optical Society of America, Washington, D.C., 2013).
69. Alan E. Willner, "Tbit/s Optical Communications using Multiplexing of Multiple Orbital-Angular-Momentum Modes," **Invited Seminar, IEEE Computer Society—Coastal Los Angeles Chapter**, Loyola Marymount University, Nov. 2013 (IEEE, Piscataway, NJ, 2014).
70. Alan E. Willner, "National Photonics Initiative," **Invited Presentation, Board on Physics and Astronomy (BPA) Fall Meeting, National Research Council**, Irvine, Nov. 2013.
71. Alan E. Willner, "Optical Communications using Orbital-Angular-Momentum-Based Multiplexing" **Invited Paper, OSA Incubator Workshop on Structured Light in Structured Material**, Washington, DC, Sept. 2013 (Optical Society of America, Washington, D.C., 2014).
72. Alan E. Willner, "Tbit/s Optical Communications using Multiplexing of Multiple Orbital-Angular-Momentum Modes," **Invited Seminar**, Tianjin University, Nov. 2013.
73. Alan E. Willner, "National Academies Perspective," **Invited Seminar, NSF Workshop on US-based Silicon Photonics Foundry/Fabrication Resources**, Washington, DC, Sept 2013 (Optical Society of America, Wash., D.C., 2013).
74. Alan E. Willner, "National Academies Study on Optics and Photonics: Essential Technologies for Our Nation," **Plenary Presentation, IEEE Optical Interconnects Conference**, Santa Fe, NM, May 2013 (IEEE, Piscataway, NJ, 2013).
75. Alan E. Willner, "Orbital Angular Momentum Transmission," **Invited Paper, European Conference on Optical Communications (ECOC)**, paper Mo.4.A.1, London, Great Britain, Sept. 2013.
76. Alan E. Willner, "Multiplexing Information-Carrying Orthogonal Beams using Orbital Angular Momentum States," **Invited Paper, Frontiers in Optics Conference 2013 (FiO)**, paper FM3F.1, Oct. 2013, Orlando, FL (Optical Society of America, Wash., D.C., 2013).
77. Morteza Ziyadi, Mohammad Reza Chitgarha, Salman Khaleghi, Amirhossein Mohajerin-Ariaei, Ahmed Almaiman, Joe Touch, Moshe Tur, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Tunable Optical Correlator using an Optical Frequency Comb and a Nonlinear Multiplexer," **Invited Paper, Optics Express**, Special Issue on European Conference on Optical Communications, vol. **22**, no. 1, pp. 84-89, 2014.
78. Yan Yan, Andrey Matsko, Changjing Bao, Lute Maleki, and Alan E. Willner, "Increasing the Spectral Bandwidth of Optical Frequency Comb Generation in a Microring Resonator using a Slotted Waveguide," **Invited Paper, IEEE Photonics Conference 2013**, paper TuD3.2, September, Bellevue, WA (IEEE, Piscataway, NJ, 2013).

*\* Contributed Paper highly ranked by conference committee and upgraded to Invited Paper status. \**

**INVITED PAPERS: (CONTINUED)**

79. Yi Rao, Weijian Yang, Chris Chase, Michael C. Y. Huang, D. P. Worland, Salman Khaleghi, Mohammad R. Chitgarha, Morteza Ziyadi, Alan E. Willner, and Connie J. Chang-Hasnain, "Long-Wavelength VCSEL using High Contrast Grating," **Invited Paper, IEEE Journal of Selected Topics in Quantum Electronics**, vol. **13**, no. 4, 2013.
80. Alan E. Willner, "Tbit/s Optical Communications using Orbital Angular Momentum," **Invited Paper, 18<sup>th</sup> Microoptics Conference (MOC'13)**, Tokyo, Japan, Oct. 2013.
81. Yongxiong Ren, Hao Huang, Guodong Xie, Nisar Ahmed, Baris Erkmen, Nivedita Chandrasekaran, Martin Lavery, Jeffrey Shapiro, Nicholas Steinhoff, Moshe Tur, Miles Padgett, Robert Boyd, and Alan Willner, "Experimental Turbulence Effects on Crosstalk and System Power Penalty over a Free Space Optical Communication link using Orbital Angular Momentum Multiplexing," **Invited Paper, APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CM2G.4, San Jose, CA, June 2013 (Optical Society of America, Wash., D.C., 2013).

*\* Contributed Paper highly ranked by conference committee and upgraded to Invited Paper status. \**

82. Alan E. Willner, "National Academies Study on 'Optics and Photonics: Essential Technologies for Our Nation,'" **Invited Paper, IEEE Avionics, Fiber-Optics and Photonics Conference (AVFOP)**, San Diego, CA, May 2013 (IEEE, Piscataway, NJ, 2013).
83. Alan E. Willner, "Optics and Photonics: Essential Technologies for Our Nation," **Invited Presentation, Division Committee on Engineering and Physical Sciences (DEPS) Spring Meeting, National Research Council**, Washington, March 2013.
84. Alan E. Willner, "Terabit/sec Free-Space Data Transmission using Orbital Angular Momentum," **Invited Paper, The 43<sup>rd</sup> Winter Colloquium on the Physics of Quantum Electronics (PQE)**, Snowbird, UT, Jan. 2013.
85. Robert W. Boyd, Mehul Malik, Mohammad Mirohosseini, Colin O'Sullivan, Brandon Rodenburg, Zhimin Shi, Daniel J. Gauthier, Miles J. Padgett, Martin P.J. Lavery, Stephen M. Barnett, Alan Willner, and Yongxiong Ren, "Orbital-Angular-Momentum Encoding for Free Space QKD," **Invited Paper, The 43<sup>rd</sup> Winter Colloquium on the Physics of Quantum Electronics (PQE)**, Snowbird, UT, Jan. 2013.
86. Alan E. Willner, "Multiplexing Vortex Beams for Tbit/s Free-Space Optical Communications," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 8610-4, Feb. 2013, San Francisco, CA (SPIE, Bellingham, Wash., 2013).
87. Alan E. Willner, "Reconfigurable Optical Networking Functions using Orbital Angular Momentum," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 8647-4, Feb. 2013, San Francisco, CA (SPIE, Bellingham, Wash., 2013).
88. Alan E. Willner, "Optical Techniques for Generating and Demultiplexing Higher-Order Modulation Formats," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 8646-21, Feb. 2013, San Francisco, CA (SPIE, Bellingham, Wash., 2013).
89. Alan E. Willner, Jian Wang, and Hao Huang, "Applied Physics Perspective: A Different Angle on Light Communications," **Invited Paper, Science**, vol. **337**, no. 6095, pp. 655-656, 10 August 2012.
90. Alan E. Willner, Robert L. Byer, Constance J. Chang-Hasnain, Steven Forrest, Henry Kressel, Herwig Kogelnik, Guillermo J. Tearney, Charles H. Townes, and Michalis Zervas, "Optics and Photonics: Key Enabling Technologies," **Invited Paper, Proceedings of the IEEE**, Special Centennial Issue, vol. **100**, pp. 1604-1643, May 2012.

**INVITED PAPERS: (CONTINUED)**

91. Alan E. Willner, R.L. Byer, C.J. Chang-Hasnain, S.R. Forrest, H. Kressel, H. Kogelnik, G.J. Tearney, C.H. Townes, and M.N. Zervas, "Prolog to the Section on Optics and Photonics," **Invited Paper, Proceedings of the IEEE**, Special Centennial Issue, vol. **100**, pp. 1600-1603, May 2012.
92. L.-S. Yan, A.E. Willner, X. Wu, A.-L. Yi, A. Bogoni, Z.-Y. Chen, and H.-Y. Jiang, "All-Optical Signal Processing for Ultra-High Speed Optical Systems and Networks," **Invited Paper, IEEE/OSA Journal of Lightwave Technology**, vol. 30, no. 24, pp. 3760-3770, 2012).
93. Alan E. Willner, "Terabit/sec Free-Space Data Transmission using Orbital Angular Momentum," **Invited Paper, International Nano-Optoelectronic Workshop (iNOW)**, Berkeley, CA, Aug. 2012.
94. Alan E. Willner and J. Wang, "Optical Communications using Light Beams Carrying Orbital Angular Momentum," **Invited Paper**, in Special Symposium on "Singular Light: Applications of Vortices, Orbital angular momentum, Bessel and Airy beams," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper JTU2K.1, San Jose, MD, May 2012 (Optical Society of America, Wash., D.C., 2012).
95. Alan E. Willner and Scott R. Nuccio, "Electro-Optic Polymer Modulators," **Invited Paper, IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, Los Angeles, CA, Mar. 2012 (Optical Society of America, Washington, D.C., 2012).
96. Y. Rao, C. Chase, M. C.Y. Huang, S. Khaleghi, M. R. Chitgarha, M. Ziyadi, D. P. Worland, A.E. Willner, and C. J. Chang-Hasnain, "Tunable 1550-nm VCSEL using High Contrast Gratings," **Invited Paper, IEEE Photonics Conference 2012**, paper WU4, September, Burlingame, CA (IEEE, Piscataway, NJ, 2012).
97. Alan E. Willner, "Optical Tapped-Delay-Lines," **Invited Presentation**, in Workshop "All-optical Signal Processing: Next-generation Materials," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, Los Angeles, CA, Mar. 2012 (Optical Society of America, Washington, D.C., 2012).
98. Jian Wang and A. E. Willner, "Review of Robust Data Exchange using Optical Nonlinearities," **Invited Review Article, International Journal of Optics**, Special Issue of "Optical Parametric Processing", vol. **2012**, Article ID 575429, 25 pages (doi:10.1155/2012/575429), 2012.
99. Alan E. Willner, "Tunable Optical Tapped-Delay-Lines for Signal Processing Applications," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 8273-40, Jan. 2012, San Francisco, CA (SPIE, Bellingham, Wash., 2012).
100. Alan E. Willner, Yang Yue, Hao Huang, and Lin Zhang, "Signal Propagation Effects in HCG Hollow-Core Waveguides," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 8270-15, Jan. 2012, San Francisco, CA (SPIE, Bellingham, Wash., 2012).
101. Alan E. Willner, O. Yilmaz, J. Wang, X. Wu, A. Bogoni, L. Zhang, and S.R. Nuccio, "Optically Efficient Nonlinear Signal Processing," **Invited Paper, IEEE Journal of Selected Topics in Quantum Electronics**, Special Issue on Green Photonics, vol. 17, pp. 320-332, 2011.
102. A.E. Willner, "Optical Communications: Innovations (and Their Needs) Abound," **Plenary Paper, IEEE Co-Sponsored 45th Annual Conference on Information Sciences and Systems (CISS)**, Johns Hopkins University, Baltimore, March 2011.
103. A.E. Willner, Z. Pan, and M. I. Hayee, "Major Accomplishments in 2010 on Optical Fiber Communications," **Invited Paper, IEEE Photonics Journal**, vol. 3, no. 2, pp. 320-324, 2011.

**INVITED PAPERS: (CONTINUED)**

104. A.E. Willner, "All-Optical Signal Processing using Optical Nonlinearities," **Invited Paper**, OSA Topical Meeting on Signal Processing in Photonic Communications (SPPCom), OSA Optics & Photonics Congress on "Advanced Photonics," paper SPMC1, Toronto, Canada, June 2011 (Optical Society of America, Washington, DC, 2011).
105. A.E. Willner, "Nonlinear Optics in Optical Fiber Communications: *For Worse and For Better*," **Invited Presentation**, *Quantum Electronics Seminar*, Stanford University, Oct. 31, 2011.
106. A.E. Willner, "Technologies in Lightwave: From (Cavity) Modes to (WDM) Nodes," **Plenary Presentation**, **2011 International Symposium on Information Photonics & Optical Communications**, July 2011, Chengdu, China.
107. A.E. Willner, "All-Optical Signal Processing using Optical Nonlinearities," **Invited Presentation**, **5th International Symposium on Ultrafast Photonic Technologies**, at HHI in Berlin, Sept. 2011.
108. A.E. Willner, S.R. Nuccio, and O. Yilmaz, "Recent Advances in Tunable Optical Delays and Their Applications," **Invited Paper**, **Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, Conference 7949, paper 7949-7, Jan. 2011, San Jose, CA (SPIE, Bellingham, Wash., 2011).
109. Lin Zhang, Yang Yue, and Alan E. Willner, "Micro-Resonator Devices for Optical Broadband Access Application," **Invited Paper**, **Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, Broadband Access Communication Technologies V Conference 7959, paper 7959-2, Jan. 2011, San Jose, CA (SPIE, Bellingham, Wash., 2011).
110. A.E. Willner, "All-Optical Signal Processing using Optical Nonlinearities," **Invited Seminar**, **Bar Ilan University**, Israel, July 26, 2011.
111. A.E. Willner, L. Zhang, and Y. Yue, "Tailoring of Dispersion and Nonlinear Properties of Integrated Silicon Waveguides for Signal Processing Applications," **Invited Paper**, **IOP Semiconductor Science and Technology**, Special Issue Honoring Zhores Alferov: From Heterostructures to Nanostructures, vol. 26, no. 1, paper 014044, Jan. 2011.
112. Zahra Bakhtiari, Jian Wang, Xiaoxia Wu, Jeng-Yuan Yang, Robert Hellwarth, and Alan E. Willner, "Demonstration of 10-40-Gbaud Baud-Rate-Tunable Optical Generation of 16-QAM from a QPSK Signal using a Variable DGD Element," **Invited Paper**, **Conference on Lasers and Electro-Optics (CLEO)**, paper CThY5, Baltimore, MD, May 2011 (Optical Society of America, Wash., D.C., 2011).  
 \* *Contributed Paper highly ranked by conference committee and upgraded to Invited Paper status.* \*
113. A.E. Willner, "Optical Communications: Innovations (and Their Needs) Abound," **Invited Presentation**, **IEEE Student Chapter at USC**, Nov. 1, 2011.
114. A. Bogoni, L. Potì, A. Willner, P. Ghelfi, C. Porzi, M. Scaffardi, G. Meloni, G. Berrettini, F. Fresi, E. Lazzeri, and X. Wu, "Overview on Optical Logic Elementary Circuits," **Invited Paper**, **Journal of IET Circuits, Devices & Systems**, vol. 5, pp. 76-83, 2011.
115. A.E. Willner, "Towards Robust and Reconfigurable Optical Communication Systems," **Plenary Paper**, **Third International Photonics and Optoelectronics Meetings (POEM 2010)**, Wuhan, China, Nov. 2010.
116. A.E. Willner, "Optical Performance Monitoring," **Invited Paper**, **IEEE Avionics, Fiber-Optics and Photonics Conference (AVFOP)**, paper WA1, Denver, CO, Sept. 2010 (IEEE, Piscataway, NJ, 2010).
117. Alan E. Willner, Lin Zhang, Yang Yue, and Xiaoxia Wu, "Integrated Nano-Structured Silicon Waveguides and Devices for High-Speed Optical Communications," **Invited Paper**, **Chinese Optics Letters**, Special

**INVITED PAPERS: (CONTINUED)**

Issue on Science and Technology for High-Speed Optical Communications, vol. 8, no. 9, pp. 909-917, 2010.

118. A.E. Willner, "Dispersion and Nonlinearity Tailoring using Slotted Waveguides," **Invited Paper, IEEE Photonics Society 21st Annual Workshop on Interconnections Within High-Speed Digital Systems**, Santa Fe, May 2010 (IEEE, Piscataway, NJ, 2010).
119. Scott R. Nuccio, Omer F. Yilmaz, Xue Wang, Jian Wang, Xiaoxia Wu, Alan E. Willner, "1.16- $\mu$ s Continuously Tunable Optical Delay of a 100-Gb/s DQPSK Signal using Wavelength Conversion and Chromatic Dispersion in an HNLF," **Invited Paper, Conference on Lasers and Electro-Optics (CLEO)**, paper X, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
 

*\* Contributed Paper highly ranked by conference committee and upgraded to Invited Paper status. \**
120. A.E. Willner, "U.S. Leadership Role in R&D: A Researcher's Perspective," **Invited Paper, Optoelectronics Industry Development Association (OIDA) Annual Forum**, Arlington, VA, Nov. 2010.
121. A.E. Willner, "Towards Robust and Reconfigurable Optical Communication Systems," **Invited Seminar, CREOL, Univ. of Central Florida**, IEEE Photonics Society Student Local Chapter, Orlando, June 2010.
122. A.E. Willner, "Towards Robust and Reconfigurable Optical Communication Systems," **Invited Seminar, Stanford University, OSA/SPIE Student Chapter Seminar Series**, May 2010.
123. Antonella Bogoni, Xiaoxia Wu, Jian Wang, Alan E. Willner, "Ultra-Fast All Optical Signal Processing and Switching Based on PPLN Waveguides," **Invited Paper, OSA Topical Meeting on Photonics in Switching**, paper PWA1, Monterey, CA, July (Optical Society of America, Wash., D.C., 2010).
124. A.E. Willner, "A Researcher's Perspective to the Energy Issue," **Invited Presentation, OSA Topical Meeting on Photonics in Switching**, Workshop 1: Energy Efficient Networking and Systems, Monterey, CA, July (Optical Society of America, Wash., D.C., 2010).
125. A.E. Willner, "Efficient Communications for Access and Interconnects," **Invited Presentation, Annual Danish-Californian Workshop on Photonic Technologies for Access and Interconnects**, Stanford University, CA, Jan.2010.
126. Zhongqi Pan, Changyuan Yu, and Alan E. Willner, "Optical Performance Monitoring for the Next Generation Optical Communication Networks," **Invited Paper, Journal of Optical Fiber Technology**, vol. 16, pp. 20-45, 2010.
127. A.E. Willner, "Writing Your CV and Cover Letter," **Invited Seminar, USC Center for Excellence in Teaching (CET) 2010 Academic Careers Week Program**, Oct. 2010.
128. A.E. Willner, "A Broader-Bandwidth Optical Network," **Keynote Paper, 14th Opto-Electronics and Communications Conference (OECC)**, Hong Kong, July 13, 2009.
129. Alan E. Willner, "Optical Communications: Innovations (and Their Needs) Abound," **Plenary Presentation, IPOS Launch and Symposium: Faster, Further, Smarter**, Institute of Photonics and Optical Science, Univ. of Sydney, April 2009.
130. Alan E. Willner, "Towards High-Performance and Reconfigurable Optical Communication Networks," **Invited Presentation, Distinguished Lecturer Series**, Dipartimento di Ingegneria dell'Informazione, Universita' di Padova, Italy, 2009.
131. M. Scaffardi, P Ghelfi, C. Porzi, G. Meloni, G. Berrettini, A. Malacarne, F. Fresi, E. Lazzeri, J. Wang, X. Wu, I. Fazal, A. Willner, L. Potì, A. Bogoni, "Photonic Digital Processing for Enabling Next Generation

**INVITED PAPERS: (CONTINUED)**

- Optical,"**Invited Paper, IEEE Photonics in Switching Meeting**, paper Wei2-5, Pisa, Italy, Sept. 2009 (IEEE, Piscataway, NJ, 2009).
132. Alan E. Willner, "Advanced Optical Communication Functions using Nanophotonic Devices,"**Invited Paper, International Nano-Optoelectronic Workshop (iNOW)** (sponsored by U.S. and German NSF), Stockholm, Aug. 2009.
  133. A.E. Willner, "Enhancing Optical Communication Systems by using Advanced OE Devices,"**Invited Paper, The 12th Meeting on Optical Engineering and Science in Israel (2<sup>nd</sup> OASIS)**, Association of Engineers and Architects in Israel, Tel Aviv, March 2009.
  134. A.E. Willner, "Optical Communications: Innovations (and Their Needs) Abound," **Invited Seminar, W.V.T. Rusch Engineering Honors Colloquium**, USC Viterbi School of Engineering, Feb. 2009.
  135. Alan E. Willner, "Advanced Optical Signal Processing Functions using Integrated Photonics,"**Invited Paper, Center for High Technology Materials (CHTM) Silver Event**, Univ. of New Mexico, Aug. 2009.
  136. Alan E. Willner, "Acute Need for Optical Chip Fab & Packaging: An Academic User's Perspective,"**Invited Presentation, Workshop on Photonics Engineering Prototyping Resource (PEPR)** (sponsored by Air Force Research Laboratory), Dayton, OH, July 2009.
  137. A.E. Willner, "Achieving Tunable Delays using Wavelength Conversion," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West, Conference on Advances in Slow and Fast Light II (OPTO OE116)**, paper 7226-11, Jan. 2009, San Jose, CA (SPIE, Bellingham, Wash., 2009).
  138. Alan E. Willner, "Optical Communications: Innovations (and their Needs) Abound," **Invited Presentation, Colloquium Lecture Series**, College of Optical Sciences, Univ. of Arizona, March 5, 2009.
  139. Alan Willner, "Negotiating an Academic Job Offer,"**Invited Seminar, USC Center for Excellence in Teaching (CET) Seminar**, Oct. 2009.
  140. A.E. Willner, B. Zhang, L. Zhang, L.-S. Yan, and I. Fazal, "Optical Signal Processing using Tunable Delay Elements Based on Slow Light,"**Invited Paper, IEEE Journal of Selected Topics in Quantum Electronics**, Special Issue on Nonlinear Optical Signal Processing, vol. 14, pp. 691-705, 2008.
  141. Alan E. Willner, "Optical Communications: Innovations (and their Needs) Abound," **Invited Presentation, 100<sup>th</sup> Anniversary of Corning's R&D, Corning's Stookey Award Ceremony**, Corning R&D Laboratories, Corning, NY, Oct. 2008.
  142. A.E. Willner, "Stable and Reconfigurable High-Capacity Optical Networks,"**Plenary Paper, IEEE Photonics Global Singapore (IPGC 2008)**, 7<sup>th</sup> Int'l Conference on Optical Communications & Networks (ICOON), Singapore, Dec. 2008.
  143. Alan E. Willner, "Towards Stable and Reconfigurable High-Capacity Optical Networks,"**Plenary Paper, International Conference on Optics and Photonics in Taiwan 2008**, paper Fri-AP-01, Taipei, Taiwan, Dec. 2008.
  144. A.E. Willner, "Targeted Optical Signal Processing for High-Performance Optical Networking," **Plenary Paper, CS/IEICE/IEEE Conference on Photonics in Switching**, Saporro, Japan, Aug. 2008.
  145. A.E. Willner, "Future Broader-Bandwidth Optical Communication Systems," **Plenary Paper, IEEE Lasers and Electro-Optics Society Summer Topical Meeting on Mitigating Channel Degrading Effects**, Proceedings, Acapulco, Mexico, July 21-23, 2008 (IEEE, Piscataway, NJ, 2008).

**INVITED PAPERS: (CONTINUED)**

146. Alan Willner, "Towards High-Performance and Reconfigurable Optical Communication Networks," **Invited Seminar, Applied Physics Seminar Series, California Institute of Technology (Caltech)**, Nov. 2008.
147. Alan E. Willner, "Optical Communications: Innovations (and their Needs) Abound," **Invited Presentation, Distinguished Lecture, The Annual Boris Stoicheff Lecture**, Jointly by the Institute of Optical Sciences (Univ. of Toronto) and the Royal Canadian Institute, Dec. 2008.
148. Alan E. Willner, "Towards High-Performance and Reconfigurable Optical Communication Networks," **Invited Seminar, IEEE ComSoc and LEOS Baltimore Chapter Seminar Series**, Oct. 2008.
149. Alan E. Willner, "Optical Performance Monitoring for Reconfigurable Optical Networks," **International Nano-Optoelectronic Workshop (iNOW)**, Japan, Aug. 2008.
150. Lin Zhang, Muping Song, Raymond G. Beausoleil and Alan E. Willner, "Embedded Ring Resonators," **Invited Paper** for Winner of LEOS Figure Contest, IEEE LEOS Newsletter, vol. 22, no. 6, pp. 21-22, 2008.
151. A.E. Willner, "High-Performance Gbit/s Data Transmission Through Slow Light Elements," **Invited Paper, Optical Society of America (OSA) Topical Meeting on Slow and Fast Light**, paper SMC1, Boston, July 2008 (OSA, D.C., 2008).
152. Alan E. Willner and Lin Zhang, "Physical Layer Challenges of On-Chip Optical Interconnects," **Invited Presentation, HP Photonic Interconnect Forum**, Hewlett-Packard Laboratories, Palo Alto, CA, May 2008.
153. A.E. Willner, "Value of Societies to Your Career: Plant the Flag to be a Leader," **Invited Presentation**, OSA Student Activities Workshop, **Conference on Lasers and Electro-Optics (CLEO)**, San Jose, CA, May 2008 (Optical Society of America, Wash., D.C., 2008).
154. A.E. Willner and B. Zhang, "Tunable Delay Lines using Slow Light for Gbit/s Data Signals," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West, Conference on Advances in Slow and Fast Light (OE21)**, paper 6904-09, Jan. 2008, San Jose, CA (SPIE, Bellingham, Wash., 2008).
155. A.E. Willner, "All-Optical Signal Processing in Next-Generation Communication Systems" **Invited Presentation**, Workshop OMD on All-Optical Signal Processing and Conditioning, **Conference on Optical Fiber Communications (OFC)**, San Diego, CA, Feb. 2008.
156. A.E. Willner, "Specialty Fibers to Realize Signal Processing Functions," **Invited Presentation**, Workshop OSuA on "Is Optical Transmission Fiber a Commodity or is Further Innovation Required?," **Conference on Optical Fiber Communications (OFC)**, San Diego, CA, Feb. 2008.
157. A.E. Willner, "Systems Requirements for Signal Processing using Parametric Processes," **Invited Presentation**, Workshop OMD on All-Optical Signal Processing and Conditioning, **Conference on Optical Fiber Communications (OFC)**, San Diego, CA, Feb. 2008.
158. Alan E. Willner, "Optical Networking Perspectives vs. Optical Technologies Reality," **Keynote Presentation, ONDM Conference COST 291 Workshop**, International Federation of Information Processing (IFIP), Athens, Greece, May 2007.
159. A.E. Willner, "Opportunities & Challenges in Optical Networking," **Plenary Presentation, 9<sup>th</sup> International Conference on Transparent Optical Networks (ICTON)**, Rome, Italy, July 2007.

**INVITED PAPERS: (CONTINUED)**

160. A.E. Willner, "Robust and Reconfigurable Optical Communication Systems," **Plenary Presentation**, Workshop on Optical Communications, **Advanced Communications Center**, Tel Aviv University, Dec. 2007.
161. A.E. Willner, "Stable and Reconfigurable Optical Networks," **Invited Paper, IEEE Lasers and Electro-Optics Society Annual Meeting 2007**, paper WFF1, Orlando, Oct. (IEEE, Piscataway, NJ, 2007).
162. Yannick Keith Lize, Xiaoxia Wu, Louis Christen, Mathieu Faucher, and Alan E. Willner, "Free Spectral Range and Optical Filtering Optimization in NRZ-, RZ- and CSRZ-DPSK Demodulation," **Invited Paper, IEEE Lasers and Electro-Optics Society Annual Meeting 2007**, paper MP1, Orlando, Oct. (IEEE, Piscataway, NJ, 2007).
- \* Contributed Paper highly ranked by conference committee and upgraded to Invited Paper status. \**
163. Alan E. Willner, Poorya Saghari, and Vahid R. Arbab, "Advanced Techniques to Increase the Number of Users and Bit Rate in OCDMA Networks," **Invited Paper, IEEE Journal of Selected Topics in Quantum Electronics**, Special Issue on Optical Codes in Optical Communications and Networks, vol. **13**, pp. 1403-1414, 2007.
164. A.E. Willner, "The Resume Process: Not it, but about it," **Invited Presentation, USC Academic Careers Week**, Oct. 2007.
165. A.E. Willner, "Managing Multiple Roles for Faculty: Just say no, sometimes," **Invited Presentation, USC's Academic Leadership and Development Workshop on Managing Multiple Roles as Faculty**, November 2007.
166. Alan E. Willner, "Physical-Layer Challenges in Stable, High-Capacity Optical Communication Networks," **Invited Presentation**, Dept. of Applied Physics Seminar Series, Hebrew University, June 6, 2007.
167. A.E. Willner, "Tunable Optical Delay Lines for Switching and Processing," **Invited Paper, IEEE Photonics in Switching Topical Meeting**, San Francisco, Aug. 2007 (IEEE, Piscataway, NJ, 2007).
168. Alan E. Willner, "Physical-Layer Challenges in Stable, High-Capacity Optical Communication Networks," **Invited Colloquium, Institute of Optics**, University of Rochester, Rochester, NY, Feb. 2007.
169. Alan E. Willner, "Monitoring and Channel Measurements to Enable Stable, High-Capacity Optical Networks," **Invited Seminar**, NIST, Boulder, Colorado, Feb. 2007.
170. A.E. Willner, "Leverage the Show Floor to Your Advantage," **Invited Presentation**, Student Activities Workshop, **Conference on Lasers and Electro-Optics (CLEO)**, Baltimore, MD, May 2007 (Optical Society of America, Wash., D.C., 2007).
171. Alan E. Willner, "Physical-Layer Challenges in Stable, High-Capacity Optical Communication Networks," **Keynote Paper, Asia Optical Communications and Optoelectronics Exhibition (AOE)**, Shanghai, China, Oct. 2006.
172. A.E. Willner, "Optical Performance Monitoring for Robust Optical Networks," **Invited Seminar**, Dept. of Electrical Engineering, Univ. of Melbourne, Melbourne, Australia, Oct. 2006.
173. Alan E. Willner, "Photonic Integration for Smart and Robust Communication Systems," **Plenary Presentation**, MIT Center for Integrated Photonic Systems (CIPS) Annual Meeting, May 5, 2006.
174. Zhaoming Zhu, Andrew M.C. Dawes, Daniel Gauthier, Michael D. Stenner, Mark A. Neifeld, Ting Luo, Changyuan Yu, Lin Zhang, and Alan E. Willner, "Recent Advances in Stimulated Brillouin Scattering Slow



**INVITED PAPERS: (CONTINUED)**

- Light," **Invited Paper, OSA Topical Meeting on Slow and Fast Light**, paper TuB1, July 2006, D.C. (OSA, D.C., 2006).
175. Alan E. Willner, "Photonic Integration for Smart and Robust Communication Systems," **Invited Presentation**, UC Berkeley Summer School, **Nano-Opto Workshop** (NOW, CONSRT), Aug. 14, 2006.
176. C. Langrock, S. Kumar, J.E. McGeehan, A.E. Willner, and M.M. Fejer, "All-Optical Signal Processing using  $\chi^{(2)}$  Nonlinearities in Guided Wave Devices," **Invited Paper, IEEE/OSA Journal of Lightwave Technology**, Special Issue on Optical Signal Processing, vol. **24**, pp. 2579-2592, 2006.
177. L.-S. Yan, X. Steve Yao, M.C. Hauer, and A.E. Willner, "Practical Solutions to Polarization-Mode-Dispersion Emulation and Compensation," **Invited Paper, IEEE/OSA Journal of Lightwave Technology**, Special Issue on Polarization Effects, vol. **24**, no. 11, pp. 3992-4005, 2006.
178. Alan E. Willner, "The Optical Network of the Future: Can Optical Performance Monitoring Enable Automated, Intelligent and Robust Systems?," **Invited Paper, Optics and Photonics News**, pp. 30-35, March, 2006.
179. A.E. Willner, "How to Present a Technical Talk: Think Outside Your Own Box," **Invited Tutorial**, Student Activities Workshop, **Conference on Lasers and Electro-Optics (CLEO)**, Long Beach, CA, May 2006 (Optical Society of America, Wash., D.C., 2006).
180. Alan E. Willner, "Physical-Layer Challenges in Stable, High-Capacity Optical Communication Networks," **Invited Presentation**, Annual Research Review of the NSERC Research Center on Agile All-Photonics Networks (AAPN), Ottawa, Canada, June 15, 2006.
181. Alan E. Willner, "Self-Managing Intelligent Optical Networks for Smarter, Tougher, and Cheaper Systems," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Newsroom**, Manuscript 743 (10.1117/2.1200603.0128), April 2006 (SPIE, Bellingham, Wash., 2006).
182. Alan E. Willner, "Physical-Layer Challenges in Stable High-Capacity Optical Communication Networks," **Invited Presentation**, Seminar Series, Dept. of Electrical and Computer Engineering, UC San Diego, La Jolla, CA, May 19, 2006.
183. A.E. Willner, L. Zhang, T. Luo, C. Yu, W. Zhang, and Y. Wang, "Data Bit Distortion Induced by Slow Light in Optical Communication Systems," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West, Symposium on Integrated Optoelectronic Devices**, paper 6130-29, pp. 175-192, Jan. 2006, San Jose, CA (SPIE, Bellingham, Wash., 2006).
184. A.L. Gaeta, J.E. Sharping, Y. Okawachi, S. Ghosh, M. Bigelow, A. Schweinsberg, R.W. Boyd, Z. Zhu, D.J. Gauthier, Y. Wang, and A.E. Willner, "Slow Light in Optical Fibers," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West, Symposium on Integrated Optoelectronic Devices**, paper 6130-02, Jan. 2006, San Jose, CA (SPIE, Bellingham, Wash., 2006).
185. A.E. Willner, "Future Highly-Efficient Optical Networks," **Invited Paper, Conference on Lasers and Electro-Optics (CLEO)**, paper CTuX3, pp. 1052-1054, Baltimore, MD, May 2005 (Optical Society of America, Wash., D.C., 2005).
186. Alan E. Willner, Louis C. Christen, John E. McGeehan, Yan Wang, Saurabh Kumar, and Irfan Fazal, "Physical Layer Routing in Free-Space Optical Networks," **Invited Paper, Newsletter of the IEEE Lasers and Electro-Optics Society**, Special Issue on Free Space Optical Communications, vol. **19**, no. 5, Oct. 2005 (IEEE/LEOS, Piscataway, New Jersey, 2005).

**INVITED PAPERS: (CONTINUED)**

187. A.E. Willner and J.E. McGeehan, "Physical Layer Routing Issues in Free-Space Optical Communication Networks," **Invited Paper, IEEE Lasers and Electro-Optics Society Summer Topical Meeting on Free-Space Communication Techniques for Optical Networks**, Proceedings, paper MA3.3, San Diego, CA, July 25-27 (IEEE, Piscataway, NJ, 2005).
188. Martin M. Fejer and Alan E. Willner, "Digital Signal Processing using Periodically-Poled Lithium-Niobate Waveguides," **Invited Paper, IEEE Lasers and Electro-Optics Society Summer Topical Meeting on Optical Signal Processing**, Proceedings, paper TuC1.1, San Diego, CA, July 25-27 (IEEE, Piscataway, NJ, 2005).
189. Alan E. Willner, "How to Present a Technical Talk: Think Outside Your Own Box," **Invited Tutorial**, Student Activities Workshop, **Conference on Lasers and Electro-Optics (CLEO)**, Baltimore, MD, May 2005 (Optical Society of America, Wash., D.C., 2005).
190. Alan E. Willner, "Technical Innovations Needed to Build Optical Networks," **Invited Presentation, NSF-Sponsored Workshop** on "The Future of Optical Communications: Understanding the Choices," Santa Barbara, Feb. 2005.
191. A.E. Willner, "Transmission Challenges in 40-Gbit/s Networks," **Invited Paper, Optoelectronics Industry Development Association (OIDA) PTAP 40 Gbit/s Workshop**, Chicago, May 2005.
192. A.E. Willner, "FBG-Based Optical Correlators for Networking," **Invited Paper, Bragg Gratings, Poling & Photosensitivity/ 30th Australian Conference on Optical Fibre Technology (ACOFT/BGPP)**, Sydney, Australia, July 2005.
193. A.E. Willner, S.M.R. Motaghian Nezam, L.-S. Yan, Z. Pan, and M.C. Hauer, "Monitoring and Control of Polarization-Related Impairments in Optical Fiber Systems," **Invited Paper, IEEE/OSA Journal of Lightwave Technology**, Special Issue on the Conference on Optical Fiber Communications, vol. **22**, pp. 106-125, 2004.
194. Alan E. Willner, "Emerging Issues in Optical Fiber Communication Systems," **Plenary Paper**, Joint Plenary Session of the 2004 **Australian Conference on Fibre Technology (ACOFT)** and the **Australian Optical Society Annual Meeting**, Canberra, Australia, July 7, 2004.
195. A.E. Willner, S. Kumar, B. Zhang, and E. Pakbaznia, "Physical Impairments and Network Limitations When Interconnecting Multiple DOD-N Routers," **Invited Paper, IEEE Lasers and Electro-Optics Society Annual Meeting 2004**, Special Symposium on DARPA's DOD-N Program, paper MI5, Puerto Rico, Nov. (IEEE, Piscataway, NJ, 2004).
196. A.E. Willner and M.C. Hauer, "PMD Emulation," **Invited Paper, Journal of Optical and Fiber Communications Reports, Springer-Verlag**, vol. **1**, no. 3, pp. 181-200, 2004.
197. A.E. Willner, "Communications Overview: A Converged, Robust Future in Communications," **Invited Paper, DARPA MTO Symposium on Photonics**, Session WE2, San Francisco, CA, Dec. 2004.
198. A.E. Willner, "Monitoring, Security & Routing in High-Capacity Optical Networks," **Invited Paper, Cisco Systems Optical Daze Symposium**, Dec. 2004
199. Z. Pan, A.E. Willner, C. Yu, and Y. Wang, "Applications of Highly Nonlinear Fiber in WDM Communications Systems," **Invited Paper, OSA/SPIE Optics in the Southeast**, paper D2, November 4-5, Charlotte, North Carolina, 2004.

**INVITED PAPERS: (CONTINUED)**

200. A.E. Willner, "Monitoring and Emulation of Fiber-Based Dispersive Effects," **Invited Paper, IEEE Lightwave Technologies in Instrumentation & Measurement Conference**, paper LTIMC-28, Palisades, NY, Oct. 2004 (IEEE, Piscataway, NJ, 2004).
201. A.E. Willner, "Systems Applications for Slow Light Technologies," **Invited Paper, CRI (Charlotte Research Institute) Conference on Slow Light**, Univ. of North Carolina, Charlotte, NC, July 2004.
202. A.E. Willner, "How to Present a Technical Talk," **Invited Tutorial**, Student Activities Workshop, **Conference on Lasers and Electro-Optics (CLEO)**, San Francisco, CA, May 2004 (Optical Society of America, Wash., D.C., 2004).
203. A.E. Willner, "High-Capacity Optical Systems and Networks," **Invited Presentation, Nerd Lunch Seminar Series**, Cisco Systems, San Jose, Jun 2004.
204. Y. Wang, C. Yu, T. Luo, and A. E. Willner, "Systems Applications of Highly Nonlinear Optical Fiber," **Invited Paper, Optoelectronics Industry Development Association (OIDA) PTAP Participant's Review**, Koloa, Kauai, HI, April 19, 2004.
205. A.E. Willner, Y.-W. Song, J. McGeehan, Z. Pan, and B. Hoanca, "Dispersion Management," **Invited Paper, Encyclopedia of Modern Optics**, pp. 353-365, edited by Robert D. Guenther, Duncan G. Steel and Leopold Bayvel, Elsevier, Oxford, ISBN 0-12-227600-0, 2004.
206. S. Lee and A.E. Willner, "Optical Communication Systems: Basic Concepts," **Invited Paper, Encyclopedia of Modern Optics**, pp. 376-386, edited by Robert D. Guenther, Duncan G. Steel and Leopold Bayvel, Elsevier, Oxford, ISBN 0-12-227600-0, 2004.
207. A.E. Willner, "PMD in Optical Communication Systems," **Plenary Paper, IEEE Lasers and Electro-Optics Society Summer Topical Meeting on Polarization Mode Dispersion**, Proceedings, Vancouver, Canada, July 14-16 (IEEE, Piscataway, NJ, 2003).
208. Alan Willner and L.-S. Yan, "Performance Degradations and Monitoring in Optical Networks," **Invited Paper, Asia-Pacific Optical and Wireless Communications Conference**, paper 5282-39, Wuhan, China, Nov. 2003 (SPIE, Bellingham, WA, 2003)
209. Alan E. Willner, "Physical Layer Impairments and Solutions," **Invited Paper, Globecom**, Workshop on Optical Burst Switching, San Francisco, Dec. 2003 (IEEE, Piscataway, NJ, 2003)
210. Alan E. Willner, "Is Circuit Switching So Much Easier Than Packet Switching?," **Invited Paper**, Workshop on Optical Networking: Circuit or Packet Switching? – Where, When and How?, Workshop PS.We.Workshop1, **Photonics in Switching**, Versailles, France, Oct. 2003 (Optical Society of America, Wash., D.C., 2003).
211. Alan E. Willner, "Do What Optics Does Best," **Invited Paper**, Workshop on Signal Processing Strategies in Optical Networks and the Impact of Advanced Optical/Electrical Components, Workshop PS.We.Workshop4, **Photonics in Switching**, Versailles, France, Oct. 2003 (Optical Society of America, Wash., D.C., 2003).
212. Alan E. Willner, Deniz Gurkan, Asaf B. Sahin, John E. McGeehan, and Michelle C. Hauer, "All-Optical Address Recognition for Optically-Assisted Routing in Next-Generation Optical Networks," **Invited Paper, IEEE COMSOC Communications Magazine**, vol. 41, no. 5, **Optical Communications Supplement**, vol. 1, no. 2, pp. S38-S44, May 2003.

**INVITED PAPERS: (CONTINUED)**

213. Alan E. Willner and Lianshan Yan, "PMD Emulation: Requirements and Results," **Invited Paper**, Workshop on PMD: Causes, Effects, and Cures, Workshop W3, **European Conference on Optical Communications (ECOC)**, Rimini, Italy, Sept. 2003.
214. Alan E. Willner, "Predictions for Optical Communications," **Invited Paper**, Part D: Future Prospects in Optoelectronic Systems, **Handbook of Photonics**, Alan Rogers, editor, Institute of Physics Publishing, Bristol, UK, Dec. 2003.
215. Alan E. Willner, Yong-Won Song, John McGeehan, Zhongqi Pan, and Bogdan Hoanca, "Dispersion Management," **Invited Paper**, **Encyclopedia of Modern Optics**, manuscript 675, Elsevier Publishers, 2004.
216. A.E. Willner, "Overview of System Applications of EIT Technologies," **Invited Paper**, **Slow Light**, DARPA-Sponsored Workshop, Orlando, Florida, Dec. 2003.
217. A.E. Willner, "Combating Channel-Degrading Effects in Multiple-Wavelength Optical Systems," **Invited Presentation**, **Nerd Lunch Seminar Series**, Cisco Systems, San Jose, July 2003.
218. A.E. Willner, "Troubles Ahead: Which Impairments Will Drive Higher Levels of OPM?" **Invited Presentation**, Workshop on the Need for Optical Performance Monitoring, **Conference on Optical Fiber Communications (OFC)**, Session MC, Atlanta, Georgia, March 2003.
219. A.E. Willner, "Tunable Dispersion Compensation: The Overlap Between What Research Can Provide and What Industry Needs," **Invited Presentation**, Workshop on Tunable Dispersion Compensation, **Conference on Optical Fiber Communications (OFC)**, Session SE, Atlanta, Georgia, March 2003.
220. A.E. Willner, "Trends and Limitations of Optical Network Technologies," **Plenary Paper**, **7th Opto-Electronics and Communications Conference (OECC)**, Pacifico Yokohama, Kanagawa, Japan, July 9, 2002.
221. A.E. Willner, "Tunability in Dispersion Compensation," **Invited Paper**, **IEEE Lasers and Electro-Optics Society Annual Meeting**, Proceedings, Glasgow, Scotland, Nov. 2002 (IEEE/LEOS, Piscataway, NJ, 2002).
222. A.E. Willner, "All-Optical Packet-Header-Recognition Techniques," **Invited Paper**, **IEEE Lasers and Electro-Optics Society Annual Meeting**, Proceedings, Glasgow, Scotland, Nov. 2002 (IEEE/LEOS, Piscataway, NJ, 2002).
223. John E. McGeehan, Michelle C. Hauer, and Alan E. Willner, "Optical Header Recognition using Fiber Bragg Grating Correlators," **Invited Paper**, **Newsletter of the IEEE Lasers and Electro-Optics Society**, Special Issue on Fast Optical Signal Processing in Optical Transmission, vol. 16, no. 5, pp. 29-33, Oct. 2002 (IEEE/LEOS, Piscataway, New Jersey, 2002).
224. A.E. Willner and L.-S. Yan, "Overcoming Dispersive Effects in Optical Networks," **Invited Paper**, **Asia-Pacific Optical and Wireless Communications Conference (APOC)**, Shanghai, China, Oct. 2002.
225. P. Ebrahimi, Y. Wang, A. B. Sahin, L.-S. Yan, Y. Qian, J. Li, A. E. Willner, "Effects of SBS and Rayleigh Scattering in Densely-Spaced Bidirectional Transmission using Raman Amplification," **Invited Paper**, **Conference on Lasers and Electro-Optics (CLEO)**, Long Beach, CA, May 2002 (Optical Society of America, Wash., D.C., 2002).

*\* Contributed Paper highly ranked by conference committee and upgraded to Invited Paper status. \**

**INVITED PAPERS: (CONTINUED)**

226. Q. Yu, L.-S. Yan, Z. Pan, and A. E. Willner, "Chromatic Dispersion Monitor for WDM Systems using Vestigial-Sideband Optical Filtering," **Invited Paper, Conference on Optical Fiber Communications (OFC) '02**, paper WE3, Anaheim, CA, March 2002 (Optical Society of America, Wash., D.C., 2002).
- \* Contributed Paper highly ranked by conference committee and upgraded to Invited Paper status.*
227. J. McGeehan, M.C. Hauer, and A.E. Willner, "Digital Optical Correlation for Fiber-Optic Communication Systems," **Invited Paper, Encyclopedia of Telecommunications**, John Proakis, editor, John Wiley and Sons Publishers, New York, 2003.
228. A.E. Willner, "Degrading and Monitoring Issues of Chromatic and Polarization-Mode Dispersion," **Invited Paper, IEEE Lasers and Electro-Optics Society Summer Topical Meeting on Dynamic Enablers of Next-Generation Optical Communications Systems**, Proceedings, paper TuJ1, Quebec City, Canada, July 15-17 (IEEE, Piscataway, NJ, 2002).
229. A.E. Willner, "All-optical Signal Processing for Implementing Network Switching Functions," **Invited Paper, IEEE Lasers and Electro-Optics Society Summer Topical Meeting on Fast Optical Signal Processing in Optical Transmission**, Proceedings, paper TuC1, Quebec City, Canada, July 15-17 (IEEE, Piscataway, NJ, 2002).
230. A.E. Willner, "The Horizon for Optical Communication Systems," **Plenary Paper, Corporation for Education Network Initiatives in California (CENIC) Annual Conference 2002**, San Diego, CA, May, 2002.
231. A.E. Willner, "Key Limitations in Multiple-Wavelength Optical Systems and Networks" **Plenary Paper, American Vacuum Society, Third International Conference on Microelectronics and Interfaces**, Santa Clara, CA, February 11, 2002.
232. Alan E. Willner and Zhongji Pan, "Implementing Subcarrier-Based Control in Optical Networking," **Invited Paper, IEEE MTT-S International Microwave Symposium**, Special Session on RF Photonic Technologies for Optical Networks, paper 2491, Seattle, Washington, June 2-7, 2002.
233. A.E. Willner, "PMD Emulation," **Invited Paper, Istituto Veneto di Scienze Lettere ed Arti**, Special Summer School on Polarization Mode Dispersion, Venice, Italy, June 26, 2002.
234. Alan E. Willner, "Chromatic Dispersion and Polarization-Mode Dispersion: Managing Key Limitations in Optical Communication Systems," **Invited Paper, Optics and Photonics News, OPN Trends**, pp. 16-21, March, 2002.
235. A.E. Willner, "Reconfigurable Multiple-Wavelength Optical Systems and Networks," **Invited Presentation, Seminar Series, Department of Electrical Engineering, Univ. of California, Berkeley**, Nov. 2001.
236. A.E. Willner, "Reconfigurable Multiple-Wavelength Optical Systems and Networks," **Invited Paper, Workshop on MEMs and Optical Switching, American Society of Mechanical Engineers**, Universal City, CA, June 2001.
237. A.E. Willner, "Chromatic Dispersion Compensators: The Search for Tunability," **Invited Paper, Next Generation Networks Conference**, Boston, MA, Nov. 2001.
238. A.E. Willner, "Capacity Limitations in Multiple-Wavelength Optical Systems," **Invited Paper, Symposium for the Stanford Photonics Research Center**, Stanford University, Sept. 14, 2001.

**INVITED PAPERS: (CONTINUED)**

239. A.E. Willner, "Reconfigurable Multiple-Wavelength Optical Systems: Things Change," **Invited Paper, Optical Materials for Future Devices and Systems**, DARPA-Sponsored Workshop, Clearwater Beach, Florida, Sept. 2001.
240. A.E. Willner, "Telecom 2001," **Invited Presentation, Gordon Conference on Nonlinear Optics and Lasers**, Colby-Sawyer College, NH, 2001.
241. A.E. Willner and Q. Yu, "Transmission Limitations due to Polarization Mode Dispersion," **Invited Paper, IEEE Lasers and Electro-Optics Society Summer Topical Meeting on Ultralong Haul DWDM Transmission and Networking**, Proceedings, paper MC2.2, Copper Mountain, Colorado (IEEE, Piscataway, NJ, 2001).
242. A.E. Willner, "Polarization Mode Dispersion: Playing Russian Roulette with Your Network," **Invited Paper, Lightwave Magazine**, Jan. 2002.
243. D. Gurkan, M.C. Hauer, A.B. Sahin, Z. Pan, A.E. Willner, K.R. Parameswaran, and M.M. Fejer, "Demonstration of Multi-Wavelength All-Optical Header Recognition using a PPLN and Optical Correlators," **Invited Paper, European Conference on Optical Communications**, paper We.B.2.5, Amsterdam, Oct. 2001.
- \* Contributed Paper highly ranked by conference committee and upgraded to Invited Paper status. \**
244. A.E. Willner, "Tunable Compensators Master Chromatic-Dispersion Impairments," **Invited Paper, WDM Solutions Magazine**, pp. 51-62, July 2001.
245. B. Hoanca, A.E. Willner, R. Khosravani, and S. Lee, "Challenges of Coping with PMD in WDM Optical Systems," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE), IT Com**, Technical Digest, paper 4532-37, July, 2001, Denver, CO (SPIE, Bellingham, Wash., 2001).
246. A.E. Willner, "Will the Future Look Like the Past?: The Systems Technology View of 40-Gbit/s," **KMI 40-Gbit/s Conference**, Baltimore, MD, July, 2001.
247. A.E. Willner, "Challenges in Next-Generation WDM Systems," **Invited Paper, DARPA Workshop on WDM**, Los Angeles, CA, June 2001.
248. A.E. Willner, "Reconfigurable Multiple-Wavelength Optical Systems and Networks," **Keynote Speaker**, Inauguration of the Center for Optical Communications, Jerusalem College of Technology, June 20, 2001.
249. A.E. Willner, "Will the Future Look Like the Past?," Duke University's **Photonics in the Forest Workshop**, Convocation of the Fitzpatrick Center for Photonics and Communications Systems, April, 2001.
250. A.E. Willner, M.C. Cardakli, O.H. Adamczyk, Y.-W. Song, and D. Gurkan, "Key Building Blocks for All-Optical Networks," **Invited Paper, Institute of Electronics, Information and Communication Engineering (IEICE) Transactions on Communications**, Special Issue on Advanced Internetworking Based on Photonic Network Technologies, vol. E83-B, no. 10, pp. 2166-2177, 2000.
251. A.E. Willner, "Reconfigurable Multiple-Wavelength Optical Systems and Networks," **Keynote Speaker, 4<sup>th</sup> Workshop of IEEE LEOS Benelux, Advanced Optical Networks**, Antwerp, Belgium, May 2000.
252. A.E. Willner and O.A. Adamczyk, "Systems Issues in Wavelength-Multiplexed Optical Interconnections," **Keynote Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West, Optoelectronic Interconnects VII**, paper 3952A-55, Jan., 2000, San Jose, CA (SPIE, Bellingham, Wash., 2000).

**INVITED PAPERS: (CONTINUED)**

253. A.E. Willner, "Will the Future Look Like the Past?" **Invited Paper, Conference on Market and Technology Trends of Lightwave Communication Network Systems and Components**, Electronicast, March 5, 2000.
254. A.E. Willner, "Optical Communication Systems," **Invited Tutorial**, Cisco Systems, Petaluma, Nov. 2000.
255. A.E. Willner, "Towards Uniform Channel Performance in Dynamic WDM Systems and Networks," **Invited Paper, Conference on Optical Fiber Communications '99**, paper ThO5, San Diego, CA, Feb. 1999 (Optical Society of America, Washington D.C., 1999).
256. A.E. Willner, "Reconfigurable WDM Systems and Networks," **Invited Paper, NIST WDM-SA'99 Conference**, NIST, Green Auditorium, Gaithersburg, MD, Nov. 3, 1999.
257. A.E. Willner, "Reducing Channel Degradations in WDM Systems and Networks," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics East, Critical Review on Reliability of Optical Fibers and Optical Fiber Systems**, Technical Digest, paper CR73-15, Sept. 1999, Boston, MA (SPIE, Bellingham, Wash., 1999).
258. A.E. Willner, "Key Limitations in WDM Systems and Networks," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West, Wavelength Division Multiplexing: A Critical Review**, Technical Digest, paper CR71, Jan. 1999, San Francisco, CA (SPIE, Bellingham, Wash., 1999).
259. A.E. Willner and B. Hoanca, "Wavelength-Division Multiplexing for High-Capacity Optical Interconnections," **Invited Paper, IEEE Computer Society Workshop on High-Performance Interconnects**, Stanford Univ., CA, Aug. 1999 (IEEE, NJ, 1999).
260. M.I. Hayee, M.C. Cardakli, and A.E. Willner, "Power Unbalanced Polarization-Division-Multiplexing for Efficient Bandwidth Utilization," **Invited Paper, Conference on Lasers and Electro-Optics (CLEO)**, paper CTuQ1, Baltimore, Md., May 1999 (Optical Society of America, Wash., D.C., 1999).
- \* Contributed Paper highly ranked by conference committee and upgraded to Invited Paper status. \**
261. A.E. Willner, K.-M. Feng, J.-X. Cai, and S. Lee, "Tunable Compensation of Channel Degrading Effects using Nonlinearly-Chirped Passive Fiber Gratings," **Invited Paper, IEEE Journal of Selected Topics in Quantum Electronics**, Special Issue on Passive Fiber Optic Components, vol. 5, no. 5, 1999.
262. A.E. Willner, "Combating Degrading Effects in Reconfigurable WDM Optical Networks," **Invited Paper, 37th Annual Allerton Conference on Communication, Control, and Computing**, Illinois, Sept. 1999.
263. A.E. Willner, "Reconfigurable WDM Systems and Networks," **Distinguished Lecture Series**, Dept. of Electrical Engineering, Univ. of Toronto, Jan. 12, 1999.
264. A.E. Willner, "Critical Issues in Non-Static and Reconfigurable WDM Systems and Networks," **Invited Paper, Symposium for the Center for Nonlinear Optical Materials**, Stanford University, Sept. 1999.
265. A.E. Willner, "In Academia, Who's Your Customer?" **Invited Paper, Workshop on Optical Communications in Academia, Conference on Optical Fiber Communications (OFC)**, San Diego, CA, Feb. 1999.
266. Alan Willner, Kai-Ming Feng, and Jin-Xing Cai are with the Dept. of Electrical Engineering, and Victor Grubsky, Dmitri Starodubov, and Jack Feinberg, "Fiber Grating Varies Dispersion Compensation in Real Time," **Invited Paper, Photonics Online**, March 1998.
267. A.E. Willner, "Mining the Optical Bandwidth for a Terabit-per-second," **Invited Paper, IEEE Spectrum Magazine**, vol. 34, no. 4, pp. 32-41, April 1997.

**INVITED PAPERS: (CONTINUED)**

268. A.E. Willner, "Wideband Optical Amplification," **Invited Paper**, McGraw-Hill 1999 Yearbook of Science and Technology, McGraw-Hill, New York, pp. 410-413, 1998, ISBN: 0-07-052625-7.
269. A.E. Willner, "Optical Amplifiers," **Invited Paper**, Wiley Encyclopedia of Electrical and Electronics Engineering, John G. Webster, ed., John Wiley and Sons, New York, 1999.
270. A.E. Willner, "Applications of All-Optical Wavelength Shifting to Reconfigurable WDM Networks," **Invited Paper**, **Society of Photo-Instrumentation Engineers (SPIE) Photonics West Critical Review on Wavelength Division Multiplexing**, Technical Digest, paper CR71-13, pp. 220-245, Jan., 1999, San Jose, CA (SPIE, Bellingham, Wash., 1999).
271. A.E. Willner, "Dynamic WDM Optical Systems and Networks," **Invited Paper**, **NATO Advanced Research Workgroup in Novel Optical Technologies for Communications, Storage, and Computing**, Technical Digest, Oct., 1998, Jerusalem, Israel.
272. A.E. Willner and B. Hoanca, "System Applications of Fiber Optic Passive Components," **Invited Paper**, **Workshop on Fibre Optic Passive Components (WFOPC)**, paper F1, Pavia, Italy, Sept., 1998 (IEEE/LEOS, Piscataway, NJ, 1998).
273. A.E. Willner and K.-M. Feng, "Dynamic WDM Optical Systems and Networks," **Invited Paper**, **International Conference on Applications of Photonic Technologies (ICAPT)**, Technical Digest, Ottawa, Ontario, July, 1998.
274. A.E. Willner, "Dynamic Multiple-Wavelength Systems and Networks," **Invited Paper**, **Society of Photo-Instrumentation Engineers (SPIE) Conference on Optics**, Communications Symposium, Taipei, Taiwan, July, 1998.
275. Alan E. Willner, Bogdan Hoanca, and Timothy Day, "Dynamically Reconfigurable WDM Networks Remain a Challenging Goal," **Invited Paper**, **Lightwave Magazine**, June Issue, pp. 54-57, Pennwell Publishers, 1997.
276. A.E. Willner, "Dynamically-Reconfigurable WDM Networks," **Invited Paper**, **Optoelectronics and Communications Conference (OECC) '97**, Seoul, Korea, July 1997.
277. A.E. Willner, "Systems Requirements of WDM Components," **Invited Paper**, **IEEE LEOS Summer Topical Meeting on WDM Components**, Proceedings, WB1, August 1997, Montreal, Canada (IEEE/LEOS, Piscataway, NJ, 1997).
278. A.E. Willner, "High-Capacity Wavelength-Multiplexed Optical Networks," **Invited Paper**, **Tenth Meeting on Optical Engineering**, Jerusalem, Israel, March, 1997.
279. A.E. Willner, "Advanced Multimedia Communication Systems," **Invited Paper**, **World Conference on The Role of Advanced Materials in Sustainable Development, Chemrawn IX**, International Union of Pure and Applied Chemistry, Seoul, Korea, Sept., 1996.
280. A.E. Willner, "Reconfigurable WDM Networks," **Invited Paper**, **Conf. on Lasers and Electro-Optics (CLEO)**, paper CFG7, Anaheim, CA, June 1996 (Optical Society of America, Wash., D.C., 1996).
281. A.E. Willner, E. Park, D. Norte, and W. Shieh, "Systems Applications of All-Optical Wavelength Shifting," **Invited Paper**, **Meeting of the Optical Society of America**, Rochester, NY, Oct. 1996 (Optical Society of America, Wash., D.C., 1995).
282. A.E. Willner, "Applications of All-Optical Wavelength Shifting to Reconfigurable WDM Networks," **Society of Photo-Instrumentation Engineers (SPIE) Photonics East Conference on Emerging**



**INVITED PAPERS: (CONTINUED)**

**Components and Technologies for All-Optical Photonic Systems**, Technical Digest, Nov., 1996, Boston, MA (SPIE, Bellingham, Wash., 1996).

283. A.E. Willner, "All-Optical Wavelength Shifters: Where Could/Should They be Used?," **Invited Paper, IEEE LEOS Semiconductor Laser Workshop**, Session on Nonlinear Functional Applications of Lasers and Amplifiers, Anaheim, CA, June 1996.
284. A.E. Willner, "Overview of Systems Issues for WDM Components," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West Conference on Wavelength Division Multiplexing Components**, Technical Digest, paper 2690-03, Jan., 1996, San Jose, CA (SPIE, Bellingham, Wash., 1996).
285. A.E. Willner, S.H. Huang, X.Y. Zou, S.-M. Hwang, D.A. Smith, and Z. Bao, "Dynamic Channel Power Equalization in Reconfigurable WDM Networks," **Invited Paper, IEEE Lasers and Electro-Optics Society Annual Meeting**, Proceedings, Nov. 1996, Boston, MA (IEEE/LEOS, Piscataway, NJ, 1996).
286. A.E. Willner and D.A. Smith, "Dynamic Channel-Power Equalization Improves Transmission Distances for Wavelength-Division Multiplexed Networks," **Invited Paper, Laser Focus World Magazine**, June Issue, 1996.
287. A.E. Willner, "Future Strategic Directions in Optical Science and Engineering," **Plenary Paper, NSF-Sponsored Forum on Optical Science and Engineering**, co-located with Society of Photo-Instrumentation Engineers (SPIE) Conference, San Diego, CA, July, 1995 (SPIE, Bellingham, Wash., 1995).
288. A.E. Willner, "High-Capacity Multiwavelength Optical Fiber Communication Systems," **Invited Paper, NSF-Sponsored Forum on Optical Science and Engineering**, co-located with Society of Photo-Instrumentation Engineers (SPIE) Conference, Proceedings, paper 2524-05, pp. 48-72, San Diego, CA, July, 1995 (SPIE, Bellingham, Wash., 1995).
289. A.E. Willner, D. Norte, and E. Park, "All-Optical Wavelength Shifting and Data-Packet Manipulation in a Reconfigurable WDM Network", **Invited Paper, IEEE Lasers and Electro-Optics Society Annual Meeting**, Proceedings, paper ONS4.1, Nov. 1995, San Francisco, CA (IEEE/LEOS, Piscataway, NJ, 1995).
290. J.E. Leight, S. Homan, A.E. Willner, G. Giaretta, M. Li, and C.J. Chang-Hasnain, "Demonstration of a Reconfigurable Wavelength-Multiplexed Multiple-Plane Optical Interconnection," **Invited Paper, Newsletter of the International Technical Working Group on Optical Processing and Computing, Society of Photo-Instrumentation Engineers (SPIE)**, D. Psaltis, B. Javidi, J. Neff, and S. Bains, eds., vol. 6, no. 2, pp. 4-5, Oct. 1995 (SPIE, Bellingham, Wash., 1995).
291. A.E. Willner and J.E. Leight, "Multiple-Plane Two-Dimensional WDM Interconnections using VCSELs for Reconfigurable Communication with Low Switching Delay," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Photonics West Conference on Components for Wavelength Division Multiplexing**, Technical Digest, paper 2402-06, Feb., 1995, San Jose, CA (SPIE, Bellingham, Wash., 1995).
292. A.E. Willner, "Transmission of Many WDM Channels in EDFA Cascades and Ring Networks," **Invited Paper, International Conference on Emerging Optoelectronic Technologies (CEOT)**, sponsored by the **Society of Photo-Instrumentation Engineers (SPIE)**, pp. 137-141, Bangalore, India, July 19-22, 1994 (SPIE, Bellingham, Wash., 1994).
293. A.E. Willner, "Transmission of Many WDM Channels Through a Cascade of EDFA's in Long-Distance Link and Ring Networks," **Invited Paper, Newsletter of the IEEE Lasers and Electro-Optics Society**, vol. 8, no. 4, August, 1994 (IEEE/LEOS, Piscataway, New Jersey, 1994).

**INVITED PAPERS: (CONTINUED)**

294. V.O.K. Li, A.E. Willner, P.D. Dapkus, K.-C. Lee, A.D. Norte, E. Park, W. Shieh, and A. Mathur, "Wavelength Converting and Wavelength Routing for High-Efficiency Almost-All-Optical Networks," **Invited Paper, Journal of High Speed Networks**, Special Issue on Optical Networks, vol. 4, pp. 5-25, 1995 (IOS Press).
295. A.E. Willner, "Multi-Channel Optical Communication Systems," **Invited Paper, Conference on Defining the Global Information Infrastructure: Systems and Services (Critical Review)**, Society of Photo-Instrumentation Engineers (SPIE), Proceedings, paper CR56-03, Boston, MA, Nov., 1994.
296. A.E. Willner, "2-D Multiple-Plane Wavelength-Multiplexed Optical Interconnections," **Invited Paper, Conference on Manufacturing Process Development in Photonics**, Session 6, paper 2, Redstone Arsenal, Alabama, Nov. 1994.
297. A.E. Willner, "Routing and Amplification In WDM Systems: Performance vs. Complexity," **Invited Paper**, Workshop on WDM Technologies, **Conference on Optical Fiber Communications (OFC)**, San Jose, CA, Feb. 1994.
298. A.E. Willner, "2-D Multiple-Plane Optical Communication using WDM and Guided-Wave Technologies," **Invited Paper, IEEE Lasers and Electro-Optics Society Annual Meeting**, Proceedings, paper OC8.2, Nov. 1993, San Jose, CA (IEEE/LEOS, Piscataway, NJ, 1993).
299. A.E. Willner, "Routing and Amplification in WDM Systems: Performance vs. Complexity," **Invited Paper, Conference on Optical Fiber Communication**, Special Workshop on WDM Systems, San Jose, CA, Feb. 1994 (Optical Society of America, Wash., D.C., 1994).
300. A.E. Willner, "Systems Applications of WDM," **Invited Paper, Meeting of the Optical Society of America**, Proceedings, paper MFF3, Oct. 1993, Toronto, Canada (Optical Society of America, Wash., D.C., 1993).
301. A.E. Willner, "SNR Analysis of Crosstalk and Filtering Effects in an Amplified Multi-Channel Direct-Detection Dense-WDM System," **Invited Paper, Selected Papers on Fiber Optic Communications**, L.D. Hutcheson and S.C. Mettler, eds., Milestone Series, vol. MS 88, pp. 287-290, Society of Photo-Instrumentation Engineers (SPIE) Press (SPIE, Bellingham, Wash., 1993).
302. A.E. Willner, "2-D WDM Optical Interconnections for Simultaneous and Reconfigurable Communication Among Many Planes," **Invited Paper, Newsletter of the IEEE Lasers and Electro-Optics Society**, vol. 7, no. 2, pp. 4-6, April, 1993 (IEEE/LEOS, Piscataway, New Jersey, 1993).
303. A.E. Willner, "Approaches to Switching and Amplification in WDM Systems," **Invited Paper, IEEE Lasers and Electro-Optics Society Annual Meeting**, Technical Digest, pp. 82-84, Boston, MA, Nov. 1992 (IEEE/LEOS, Piscataway, New Jersey, 1992).
304. A.E. Willner, "Implementing EDFA's in Multi-User Distribution Systems," **Invited Paper, Meeting of the Optical Society of America**, paper ThW2, Albuquerque, NM, Sept. 1992 (Optical Society of America, Wash., D.C., 1992).
305. A.E. Willner, "WDM Amplification and Switching," **Invited Paper, Society of Photo-Instrumentation Engineers (SPIE) Conference on Multigigabit Fiber Communications**, Technical Digest, paper 1787-01, pp. 2-19, Sept., 1992, Boston, MA (SPIE, Bellingham, Wash., 1992).
306. A.E. Willner, "FSK Distribution Systems with Optical Preamplifiers," **Invited Paper, Meeting of the Optical Society of America**, Technical Digest, pp. 8-9, San Jose, CA, Nov. 1991 (Optical Society of America, Wash., D.C., 1991).

**INVITED PAPERS: (CONTINUED)**

307. A.E. Willner and D.V. Podlesnik, "Laser Direct Writing of Integrated Optical Components," **Invited Paper, Topical Meeting on Integrated and Guided Wave Optics**, Technical Digest, paper MDD1, pp. 64-67, Feb. 1989 (Optical Society of America, Wash., D.C., 1989).
308. A.E. Willner, "Laser-Controlled Processing of Semiconductors for Device Fabrication," Invited Lecture, Semiconductor Research Corp. **Fellows Recognition Seminar**, Technical Digest, Research Triangle Park, N. Carolina, Oct. 1987.
309. D.V. Podlesnik, A.E. Willner, H.H. Gilgen, and R.M. Osgood, Jr., "Light Guided Microfabrication of Semiconductors in Aqueous Solutions," **Invited Paper, Electrochemical Society Meeting**, Technical Digest, Las Vegas, NV, Oct. 1985.
310. A.E. Willner, D.V. Podlesnik, R.R. Krchnavek, H.H. Gilgen, P.D. Brewer, and R.M. Osgood, Jr., "Laser-Induced Microfabrication," **Invited Paper**, NATO Advanced Study Institute, **Conf. on Solid State Devices in Communications**, Proceedings, Sicily, Italy, July 1985 (NATO, Wash., D.C., 1985).

**REFEREED PROCEEDINGS:**

1. Zhe Zhao, Guodong Xie, Long Li, Haoqian Song, Cong Liu, Kai Pang, Runzhou Zhang, Changjing Bao, Zhe Wang, Soji Sajuyigbe, Shilpa Talwar, Hosein Nikopour, and Alan E. Willner, "OFDM over mm-Wave OAM Channels in a Multipath Environment with Intersymbol Interference," **IEEE Globecom 2017**, paper 1570359385, Singapore, Dec. 2017 (IEEE, Piscataway, NJ, 2017).
2. Long Li, Runzhou Zhang, Guodong Xie, Yongxiong Ren, Zhe Zhao, Zhe Wang, Cong Liu, Haoqian Song, Kai Pang, Robert Bock, Moshe Tur, and Alan E Willner, "Experimental Beam Displacement Tracking and Correction of Data-Carrying Orbital-Angular-Momentum Beams in a Free-Space Optical Link," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper Tu2F.6, Los Angeles, CA, Mar. 2017 (Optical Society of America, Washington, D.C., 2017).
3. Ahmad Fallahpour, Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Yinwen Cao, Ahmed Almaiman, Fatemeh Alishahi, Changjing Bao, Peicheng Liao, Bishara Shamee, Loukas Paraschis, Moshe Tur, Carsten Langrock, Martin Fejer, Joseph Touch, and Alan E Willner, "Experimental Demonstration of Tunable Optical De-aggregation of Each of Multiple Wavelength 16-QAM Channels into Two 4-PAM Channels," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper Th4I.6, Los Angeles, CA, Mar. 2017 (Optical Society of America, Washington, D.C., 2017).
4. Yinwen Cao, Ahmed Almaiman, Youichi Akasaka, Fatemeh Alishahi, Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Changjing Bao, Peicheng Liao, Ahmad Fallahpour, Bishara Shamee, Tadashi Ikeuchi, Shigehiro Takasaka, Ryuichi Sugizaki, Joseph Touch, Moshe Tur, and Alan E Willner, "Experimental Demonstration of Raman-Assisted Phase Sensitive Amplifier with Reduced ASE Noise Level and More than 25dB Net Gain," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper Th4A.2, Los Angeles, CA, Mar. 2017 (Optical Society of America, Washington, D.C., 2017).
5. Yinwen Cao, Ahmed Almaiman, Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Changjing Bao, Peicheng Liao, Fatemeh Alishahi, Ahmad Fallahpour, Youichi Akasaka, Carsten Langrock, Martin Fejer, Joseph Touch, Moshe Tur, and Alan E Willner, "Experimental Demonstration of Tunable Optical Channel Slicing and Stitching to Enable Dynamic Bandwidth Allocation," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper Th1F.1, Los Angeles, CA, Mar. 2017 (Optical Society of America, Washington, D.C., 2017).

*\* Selected by the subcommittee as a "top-scored" paper. \**

**REFEREED PROCEEDINGS: (CONTINUED)**

6. Peicheng Liao, Changjing Bao, Arne Kordts, Karpov Maxim, Pfeiffer Martin Hubert Peter, Lin Zhang, Yinwen Cao, Ahmed Almainman, Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Fatemeh Alishahi, Ahmad Fallahpour, Moshe Tur, Tobias J Kippenberg, and Alan E Willner, "Experimental Investigation of the Effect of EDFA-Generated ASE Noise added to the Pump of a Kerr Frequency Comb," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper M3F.1, Los Angeles, CA, Mar. 2017 (Optical Society of America, Washington, D.C., 2017).
7. Amirhossein Mohajerin Ariaei, Morteza Ziyadi, Yinwen Cao, Ahmed Almainman, Fatemeh Alishahi, Ahmad Fallahpour, Changjing Bao, Peicheng Liao, Bishara Shamee, Joseph Touch, Moshe Tur, Carsten Langrock, Martin Fejer, and Alan E Willner, "Demonstration of Tunable Mitigation of Interchannel Interference of Spectrally Overlapped 16-QAM/QPSK Data Channels using Wave Mixing of Delayed Copies," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper Th3J.5, Los Angeles, CA, Mar. 2017 (Optical Society of America, Washington, D.C., 2017).
8. Haohan Yao, Harini Kumar, Thethnin Ei, Shilpi Sharma, Rashaunda Henderson, Solyman Ashrafi, Duncan MacFarlane, Zhe Zhao, Yan Yan, and Alan E. Willner, "Experimental Demonstration of a Dual-channel E-band Communication Link using Commercial Impulse Radios with Orbital Angular Momentum Multiplexing", **Radio & Wireless Week**, paper 213-KK82, Phoenix, AZ, Jan. 2017.
9. Yan Yan, Long Li, Guodong Xie, Morteza Ziyadi, Amirhossein M Ariaei, Yongxiong Ren, Olivier Renaudin, Zhe Zhao, Zhe Wang, Cong Liu, Soji Sajuyigbe, Shilpa Talwar, Solyman Ashrafi, Andreas F Molisch, Alan E Willner, " OFDM over mm-Wave OAM Channels in a Multipath Environment with Intersymbol Interference," **IEEE Globecom 2016**, paper 16654694, Washington, DC, Dec. 2016 (IEEE, Piscataway, NJ, 2016).
10. Joe Touch, Yinwen Cao, Morteza Ziyadi, Ahmed Almainman, Amirhossein Mohajerinariaei, and Alan Willner, "The Optical Turing Machine", **IEEE International Conference on Rebooting Computing**, San Diego, CA, Oct. 2016.
11. Yinwen Cao, Fatemeh Alishahi, Youichi Akasaka, Morteza Ziyadi, Ahmed Almainman, Amirhossein Mohajerin-Ariaei, Changjing Bao, Peicheng Liao, Ahmad Fallahpour, Bishara Shamee, Tadashi Ikeuchi, Shigehiro Takasaka, Ryuichi Sugizaki, Joe Touch, Moshe Tur, Alan E Willner, "Experimental Investigation of Quasi-Periodic Power Spectrum in Raman-Assisted Phase Sensitive Amplifier for 10/20/50-Gbaud QPSK and 10-Gbaud 16QAM," **European Conference on Optical Communications (ECOC)**, paper Th.2.P2.SC5.51, Düsseldorf, German, Sept. 2016.
12. Peicheng Liao, Changjing Bao, Arne Kordts, Karpov Maxim, PMH Peter, Lin Zhang, Amirhossein Mohajerin-Ariaei, Yinwen Cao, Ahmed Almainman, Morteza Ziyadi, Youichi Akasaka, Tomer Yeminy, Steven R Wilkinson, Moshe Tur, Tobias J Kippenberg, Alan E Willner, "Dependence of Kerr Comb Linewidth and Coherent System Performance on the Pump Linewidth," **European Conference on Optical Communications (ECOC)**, paper Th2.P2.SC1.5, Düsseldorf, German, Sept. 2016.
13. Ahmed Almainman, Yinwen Cao, Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Peicheng Liao, Changjing Bao, Fatemeh Alishahi, Ahmad Fallahpour, Bishara Shamee, Joe Touch, Youichi Akasaka, Tadashi Ikeuchi, Steven Wilkinson, Moshe Tur, Alan Willner, "Experimental Demonstration of Phase-Sensitive Regeneration of a 20-40 Gb/s QPSK Channel without Phase-Locked Loop using Brillouin Amplification," **European Conference on Optical Communications (ECOC)**, paper W.3.C.4, Düsseldorf, German, Sept. 2016.
14. Y. Cao, F Alishahi, Y Akasaka, M Ziyadi, A Mohajerin-Ariaei, A Almainman, T Ikeuchi, S Takasaka, R Sugizaki, AE Willner, "Phase adjustment by wavelength tuning of parametric pump on Raman assisted phase sensitive amplifier," **OptoElectronics and Communications Conference (OECC)**, Paper TuC3-3, Niigata City, Japan, July 2016.

**REFEREED PROCEEDINGS: (CONTINUED)**

15. Y. Ren, L. Li, G. Xie, and A. Willner, "Channel effects and mitigation approaches in free-space and underwater optical communications using orbital angular momentum multiplexing," **Asia Communications and Photonics Conference 2016**, paper AF4H.1, Wuhan, China, Nov. 2016 (Optical Society of America, 2016).
16. Peicheng Liao, Changjing Bao, Arne Kordts, Maxim Karpov, Martin Hubert Peter Pfeiffer, Lin Zhang, Yinwen Cao, Ahmed Almainan, Amirhossein Mohajerin-Ariaei, Morteza Ziyadi, Tobias Kippenberg and Alan Willner, "Experimental Analysis of Multiplexing/demultiplexing Laguerre Gaussian Beams with Different Radial Index," **Frontiers in Optics (FiO) 2016**, paper FTh4E.3, Rochester, NY, Oct. 2016 (Optical Society of America, 2016).
17. Changjing Bao, Peicheng Liao, Yinwen Cao, Guodong Xie, Arne Kordts, Lin Zhang, Maxim Karpov, Martin Hubert Peter Pfeiffer, Cong Liu, Morteza Ziyadi, Yan Yan, Ahmed Almainan, Amirhossein Mohajerin-Ariaei, Fatemeh Alishahi, Tobias Kippenberg, and Alan Willner, "Experimental Demonstration of Inserting Phase-Locked Lines into Kerr Combs using Electro-Optical Modulation," **Frontiers in Optics (FiO) 2016**, paper FTh5G.2, Rochester, NY, Oct. 2016 (Optical Society of America, 2016).
18. Yan Yan, Long Li, Zhe Zhao, Guodong Xie, Yongxiong Ren, Nisar Ahmed, Zhe Wang, Soji Sajuyigbe, Shilpa Talwar, Moshe Tur, Solyman Ashrafi, Andreas F. Molisch, and Alan E. Willner, "32 Gbit/s 60 GHz Millimeter-Wave Wireless Communications using Orbital-Angular-Momentum and Polarization Multiplexing," **IEEE International Communication Conference (ICC) 2016**, paper 1570226040, Kuala Lumpur, Malaysia, May 2016 (IEEE, Piscataway, NJ, 2016).
19. Guodong Xie, Yan Yan, Zhe Zhao, Long Li, Yongxiong Ren, Nisar Ahmed, Asher J. Willner, Changjing Bao, Zhe Wang, Cong Liu, Nima Ashrafi, Solyman Ashrafi, Shilpa Talwar, Soji Sajuyigbe, Moshe Tur, Andreas F. Molisch, and Alan E. Willner, "Tunable Generation and Angular Steering of a Millimeter-Wave Orbital-Angular-Momentum Beam using Differential Time Delays in a Circular Antenna Array," **IEEE International Communication Conference (ICC) 2016**, paper 1570225424, Kuala Lumpur, Malaysia, May 2016 (IEEE, Piscataway, NJ, 2016).
20. Zhe Zhao, Yan Yan, Long Li, Guodong Xie, Yongxiong Ren, Nisar Ahmed, Zhe Wang, Cong Liu, Asher J. Willner, Pingyue Song, Hossein Hashemi, Haohan Yao, Duncan Macfarlane, Rashaunda Henderson, Nima Ashrafi, Solyman Ashrafi, Shilpa Talwar, Soji Sajuyigbe, Moshe Tur, Andreas F. Molisch, and Alan E. Willner, "A Dual-Channel 60 GHz Communications Link Using Patch Antenna Arrays to Generate Data-Carrying Orbital-Angular-Momentum Beams," **IEEE International Communication Conference (ICC) 2016**, paper 1570224643, Kuala Lumpur, Malaysia, May 2016 (IEEE, Piscataway, NJ, 2016).
21. Changjing Bao, Peicheng Liao, Martin Hubert Peter Pfeiffer, Lin Zhang, Maxim Karpov, Arne Kordts, Yinwen Cao, Yan Yan, Ahmed Almainan, Guodong Xie, Amirhossein Mohajerin Ariaei, Long Li, Morteza Ziyadi, Steven Wilkinson, Moshe Tur, Tobias Kippenberg, and Alan Willner, "Experimental Generation of High-Coherence Sub-Prime Comb Lines with Multiple Sub-Lines in a Kerr Frequency Comb using Dual Pumps," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SW4E.8, San Jose, CA, June 2016 (OSA, Wash., D.C., 2016).
22. Changjing Bao, Peicheng Liao, Martin Hubert Peter Pfeiffer, Lin Zhang, Maxim Karpov, Arne Kordts, Yinwen Cao, Yan Yan, Ahmed Almainan, Guodong Xie, Amirhossein Mohajerin Ariaei, Long Li, Morteza Ziyadi, Steven Wilkinson, Moshe Tur, Tobias Kippenberg, and Alan Willner, "Experimental Demonstration of 7-fold Multicasting of a 20-Gbaud QPSK Signal using Kerr Frequency Combs," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SM3F.6, San Jose, CA, June 2016 (OSA, Wash., D.C., 2016).
23. Ahmed Almainan, Amirhossein Mohajerin Ariaei, Morteza Ziyadi, Yinwen Cao, Peicheng Liao, Changjing Bao, FATEMEH ALISHAHI, Ahmad Fallahpour, Bishara Shamee, Nisar Ahmed, Carsten Langrock,

**REFEREED PROCEEDINGS: (CONTINUED)**

- Martin Fejer, Shlomo Zach, Nadav Cohen, Moshe Tur, and Alan Willner, "Spurious-Free Dynamic Range Characterization of a  $\chi^2$ -Based PPLN Waveguide," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SF1G.5, San Jose, CA, June 2016 (OSA, Wash., D.C., 2016).
24. Amirhossein Mohajerin Ariaei, Ahmed Almainan, Morteza Ziyadi, Yinwen Cao, Ahmad Fallahpour, Changjing Bao, FATEMEH ALISHAHI, Peicheng Liao, Bishara Shamee, Youichi Akasaka, Tadashi Ikeuchi, Shlomo Zach, Nadav Cohen, Moshe Tur, and Alan Willner, "Analog Performance of Multiple, Discretely Tunable Time Delays based on a Frequency Comb and a Chromatic Dispersion Element," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SF1G.3, San Jose, CA, June 2016 (OSA, Wash., D.C., 2016).
  25. Amirhossein Mohajerin Ariaei, Morteza Ziyadi, Ahmed Almainan, Yinwen Cao, Changjing Bao, Peicheng Liao, Bishara Shamee, FATEMEH ALISHAHI, Ahmad Fallahpour, Mohammad Reza chitgarha, Asher Willner, Youichi Akasaka, Tadashi Ikeuchi, Steven Wilkinson, Joseph Touch, Moshe Tur, Carsten Langrock, Martin Fejer, and Alan Willner, "Demonstration of Multiplexing and Transmission of QPSK-to-16QAM Channels over 100 km using Wave Mixing for Aggregation and Noise Mitigation," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper JTh2A.127, San Jose, CA, June 2016 (OSA, Wash., D.C., 2016).
  26. Fatemeh Alishahi, Yinwen Cao, Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Ahmad Fallahpour, Ahmed Almainan, Changjing Bao, Peicheng Liao, Asher Willner, Bishara Shamee, Youichi Akasaka, Alan Willner, Tadashi Ikeuchi, Joseph Touch, Moshe Tur, Shigehiro Takasaka, and Ryuichi Sugizaki, "Tunable All-Optical WDM Channel Selection using Raman-Assisted-Cascaded Parametric Amplification," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper JTh2A.125, San Jose, CA, June 2016 (OSA, Wash., D.C., 2016).
  27. Guodong Xie, Cong Liu, Long Li, Yongxiong Ren, Zhe Zhao, Yan Yan, Nisar Ahmed, Zhe Wang, Asher Willner, Changjing Bao, Yinwen Cao, Moshe Tur, and Alan Willner, "Experimental Demonstration of Localized Energy Density Gain using Coherent Superposition of Multiple Structured Orbital-Angular-Momentum Modes," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper STu1M.4, San Jose, CA, June 2016 (OSA, Wash., D.C., 2016).
  28. Zhe Wang, Yan Yan, Amir Arbabi, Cong Liu, Guodong Xie, Zhe Zhao, Yongxiong Ren, Long Li, Nisar Ahmed, Asher Willner, Ehsan Arbabi, Andrei Faraon, Nima Ashrafi, Solyman Ashrafi, Moshe Tur, and Alan Willner, "Demonstration of using Passive Integrated Phase Masks to Generate Orbital-Angular-Momentum Beams in a Communications Link," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SW4F.5, San Jose, CA, June 2016 (OSA, Wash., D.C., 2016).
  29. Long Li, Yongxiong Ren, Yinwen Cao, Guodong Xie, Zhe Zhao, Zhe Wang, Cong Liu, Yan Yan, Nisar Ahmed, Asher Willner, Nima Ashrafi, Solyman Ashrafi, Moshe Tur, and Alan Willner, "CMA Equalization for a 2 Gb/s Orbital Angular Momentum Multiplexed Optical Underwater Link through Thermally Induced Refractive Index Inhomogeneity," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SW1F.2, San Jose, CA, June 2016 (OSA, Wash., D.C., 2016).
  30. Yinwen Cao, Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Ahmed Almainan, FATEMEH ALISHAHI, Changjing Bao, Peicheng Liao, Ahmad Fallahpour, Bishara Shamee, Carsten Langrock, Martin Fejer, Moshe Tur, and Alan Willner, "Inter-channel Interference Mitigation of Heterogeneous Wavelength-Overlapped Channels of Different Baud Rates and Pulse Shapes using Nonlinear Optical Signal Processing," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper STu1G.6, San Jose, CA, June 2016 (OSA, Wash., D.C., 2016).
  31. Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Yinwen Cao, Ahmed Almainan, Ahmad Fallahpour, Changjing Bao, Fatemeh Alishahi, Peicheng Liao, Bishara Shamee, Loukas Paraschis, Moshe Tur, Carsten

**REFEREED PROCEEDINGS: (CONTINUED)**

- Langrock, Martin Fejer, Joseph Touch, Youichi Akasaka, Tadashi Ikeuchi, and Alan Willner, "Tunable Optical De-aggregation of a 40-Gbit/s 16-QAM Signal into Two 20-Gbit/s 4-PAM Signals using a Coherent Frequency Comb and Nonlinear Processing," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SM3F.5, San Jose, CA, June 2016 (OSA, Wash., D.C., 2016).
32. Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Yinwen Cao, Ahmed Almainan, Changjing Bao, Fatemeh Alishahi, Ahmad Fallahpour, Peicheng Liao, Asher Willner, Bishara Shamee, Steven Wilkinson, Loukas Paraschis, Moshe Tur, Carsten Langrock, Martin Fejer, Joseph Touch, and Alan Willner, "Tunable ROADM with Crosstalk Reduction for Overlapped 20-25 Gbaud QPSK WDM Channels using Wave Mixing," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SM3F.2, San Jose, CA, June 2016 (OSA, Wash., D.C., 2016).
  33. Yinwen Cao, Ahmed Almainan, Morteza Ziyadi, Peicheng Liao, Amirhossein Mohajerin-Ariaei, Fatemeh Alishah, Changjing Bao, Ahmad Fallahpour, Bishara Shamee, Asher Willner, Youichi Akasaka, Tadashi Ikeuchi, Steven Wilkinson, Joseph Touch, Moshe Tur, and Alan Willner, "Demonstration of Automatically Phase-Locked Self-Homodyne Detection with a Low-Power Pilot Tone based on Brillouin Amplification and Optical Frequency Combs," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper M2A.6, Anaheim, CA, Mar. 2016 (Optical Society of America, Washington, D.C., 2016).
  34. Ahmed Almainan, Yinwen Cao, Morteza Ziyadi, Peicheng Liao, Amirhossein Mohajerin Ariaei, Changjing Bao, Fatemeh Alishah, Ahmad Fallahpour, Bishara Shamee, Asher Willner, Nisar Ahmed, Akasaka Youichi, Tadashi Ikeuchi, Steven Wilkinson, Moshe Tur, and Alan Willner, "Experimental Demonstration of Phase-Sensitive Regeneration of a 10-20 Gb/s BPSK Channel without a Phase-Locked Loop using Brillouin Amplification," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper W4D.5, Anaheim, CA, Mar. 2016 (Optical Society of America, Washington, D.C., 2016).
  35. Peicheng Liao, Changjing Bao, Pfeiffer Martin, Hubert Peter, Maxim Karpov, Yan Yan, Lin Zhang, Yinwen Cao, Ahmed Almainan, Morteza Ziyadi, Asher Willner, Steven, Wilkinson, Moshe Tur, Tobias Kippenberg, and Alan Willner, "Wavelength and Pump Power Characterization of Low-phase-noise Kerr Frequency Comb Lines," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper W4E.2, Anaheim, CA, Mar. 2016 (Optical Society of America, Washington, D.C., 2016).
  36. Yongxiong Ren, Zhe Wang, Guodong Xie, Long Li, Asher Willner, Yinwen Cao, Zhe Zhao, Yan Yan, Nisar Ahmed, Nima Ashrafi, Solyman Ashrafi, Robert Bock, Moshe Tur, and Alan Willner, "Demonstration of OAM-based MIMO FSO link using spatial diversity and MIMO equalization for turbulence mitigation," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper Th1H.2, Anaheim, CA, Mar. 2016 (Optical Society of America, Washington, D.C., 2016).
  37. Youichi Akasaka, Jeng-Yuan Yang, Tadashi Ikeuchi, Motoyoshi Sekiya, Shigehiro Takasaka, Ryuichi Sugizaki, Amirhossein Mohajerin Ariaei, Morteza Ziyadi, Ahmed Almainan, Yinwen Cao, and Alan E. Willner, "Study of Chromatic Dispersion Effect on 16QAM Phase Sensitive Amplification," **IEEE Photonics Conference (IPC)**, paper WG1.1, Reston, VA, Oct. 2015 (IEEE, Piscataway, NJ, 2015).
  38. Changjing Bao, Peicheng Liao, Lin Zhang, Yan Yan, Yinwen Cao, Guodong Xie, Amirhossein Mohajerin Ariaei, Long Li, Morteza Ziyadi, Lionel C. Kimerling, Jurgen Michee, and Alan E. Willner, "Impact of Breather Soliton in Kerr Combs on the Performance of Communication Systems," **IEEE Photonics Conference (IPC)**, paper TuD1.2, Reston, VA, Oct. 2015 (IEEE, Piscataway, NJ, 2015).
  39. Yue Yang, Lin Zhang, Changjing Bao, Alan E. Willner, and Jon Anderson, "Octave-spanning Flat Negative Dispersion in Silicon Nitride Horizontal Slot Waveguides," **IEEE Photonics Conference (IPC)**, paper MD1.2, Reston, VA, Oct. 2015 (IEEE, Piscataway, NJ, 2015).

**REFEREED PROCEEDINGS: (CONTINUED)**

40. Zhe Zhao, Yongxiong Ren, Guodong Xie, Long Li, Yan Yan, Nisar Ahmed, Zhe Wang, Nima Ashrafi, Solyman Ashrafi, Roger Linquist, and Alan Willner, "Dividing and Multiplying the Mode Order for Orbital-Angular-Momentum Beams," **European Conference on Optical Communications (ECOC)**, paper Th.4.5.1, Valencia, Spain, Sept. 2015.
41. Yinwen Cao, Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Ahmed Almainan, Peicheng Liao, Changjing Bao, Bishara Shamee, Jeng-Yuan Yang, Youichi Akasaka, Motoyoshi Sekiya, Moshe Tur, Carsten Langrock, Martin Fejer, Joe Touch, and Alan Willner, "Reconfigurable Optical Inter-Channel Interference Compensation of 20/25-Gbaud QPSK Signals using Nonlinear Wave Mixing," **European Conference on Optical Communications (ECOC)**, paper P.3.17, Valencia, Spain, Sept. 2015.
42. Guodong Xie, Long Li, Yongxiong Ren, Yan Yan, Nisar Ahmed, Zhe Zhao, Zhe Wang, Nima Ashrafi, Solyman Ashrafi, Roger Linquist, and Alan Willner, "Exploiting the Unique Intensity Gradient of an Orbital-Angular-Momentum Beam for Accurate Receiver Alignment Monitoring in a Free-Space Communication Link," **European Conference on Optical Communications (ECOC)**, paper We.3.6.2, Valencia, Spain, Sept. 2015.
43. Ahmed Almainan, Amirhossein Mohajerin Ariaei, Morteza Ziyadi, Yinwen Cao, Changjing Bao, Peicheng Liao, Bishara Shamee, Youichi Akasaka, Jeng-Yuan Yang, Motoyoshi Sekiya, Carsten Langrock, Martin Fejer, Joe Touch, Moshe Tur, and Alan Willner, "Demonstration of a Fine and Coarse Tunable Buffer for Multiple Discrete and Simultaneous Signal Access using a Frequency Comb, Wavelength Conversion and Chromatic Dispersion," **European Conference on Optical Communications (ECOC)**, paper P.4.14, Valencia, Spain, Sept. 2015.
44. Youichi Akasaka, Jeng-Yuan Yang, Motoyoshi Sekiya, Yinwen Cao, Ahmed Almainan, Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Peicheng Liao, Tadashi Ikeuchi, Alan Willner, Sigehiro Takasaka, and Ryuichi Sugizaki, "Experimental Demonstration of Raman-assisted Phase Sensitive Amplifier with Negligible Gain/Power Fluctuation," **European Conference on Optical Communications (ECOC)**, paper Tu.1.1.4, Valencia, Spain, Sept. 2015.
45. Jeng-Yuan Yang, Youichi Akasaka, Motoyoshi Sekiya, Amirhossein Mohajerin Ariaei, Yinwen Cao, Morteza Ziyadi, Ahmed Almainan, and Alan Willner, "Investigation of Channel-based Independent Phase Shifts for Maximizing Phase-Sensitive Amplification on WDM Channels," **20th Opto-Electronics and Communications Conference (OECC)**, paper WE9F-4, Shanghai, China, June 2015.
46. Long Li, Guodong Xie, Yan Yan, Yongxiong Ren, Peicheng Liao, Nisar Ahmed, Zhe Zhao, Changjing Bao, Zhe Wang, Nima Ashrafi, Solyman Ashrafi, Roger D. Linquist, Moshe Tur, and Alan E. Willner, "Experimental Demonstration of a 400-Gbit/s Free Space Optical Link using Multiple Orbital-Angular-Momentum Beams with Higher Order Radial Indices," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SW4M.5, San Jose, CA, May 2015 (OSA, Wash., D.C., 2015).
47. Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Mohammad-Reza Chitgarha, Yinwen Cao, Ahmed Almainan, Youichi Akasaka, Jeng-Yuan Yang, Guodong Xie, Peicheng Liao, Motoyoshi Sekiya, Joseph Touch, Moshe Tur, Carsten Langrock, Martin Fejer, and Alan E. Willner, "Demonstration of Tunable and Automatic Frequency/Phase Locking for Multiple-Wavelength QPSK and 16-QAM Homodyne Receivers using a Single Nonlinear Element," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper STh1O.6, San Jose, CA, May 2015 (OSA, Wash., D.C., 2015).
48. Guodong Xie, Long Li, Yan Yan, Yongxiong Ren, Zhe Zhao, Peicheng Liao, Nisar Ahmed, Zhe Wang, Nima Ashrafi, Solyman Ashrafi, Roger D. Linquist, Moshe Tur, Alan E. Willner, "Performance Metrics for a Free-space Communication Link Based on Multiplexing of Multiple Orbital Angular Momentum Beams with Higher Order Radial Indices," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper JTh2A.62, San Jose, CA, May 2015 (OSA, Wash., D.C., 2015).



**REFEREED PROCEEDINGS: (CONTINUED)**

49. Amirhossein Mohajerin Ariaei, Morteza Ziyadi, Ahmed Almainan, Yinwen Cao, Mohammad-Reza Chitgarha, Youichi Akasaka, Jeng-Yuan Yang, Motoyoshi Sekiya, Joseph Touch, Moshe Tur, Carsten Langrock, Martin Fejer, Alan E. Willner, "Experimental Demonstration of Simultaneous Phase Noise Suppression and Automatically Locked Tunable Homodyne Reception for a 20-Gbaud QPSK Signal," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SW1M.5, San Jose, CA, May 2015 (OSA, Wash., D.C., 2015).
50. Changjing Bao, Lin Zhang, Yan Yan, Andrey Matsko, Guodong Xie, Long Li, Lionel Kimerling, Jurgen Michel, Lute Maleki, and Alan E. Willner, "Impact of Higher-Order Dispersion on the Performance of a Kerr Frequency Comb as Affected by the Generated Dispersive Wave," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper JTu5A.32, San Jose, CA, May 2015 (OSA, Wash., D.C., 2015).
51. Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Ahmed Almainan, Yinwen Cao, Mohammad-Reza Chitgarha, Peicheng Liao, Youichi Akasaka, Jeng-Yuan Yang, Motoyoshi Sekiya, Joseph Touch, Moshe Tur, Carsten Langrock, Martin Fejer, and Alan E. Willner, "Experimental Demonstration of Tunable and Automatically-Locked Homodyne Detection for Dual-Polarization 20-32-Gbaud QPSK Channels using Nonlinear Mixing and Polarization Diversity," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper STh1O.5, San Jose, CA, May 2015 (OSA, Wash., D.C., 2015).
52. Nisar Ahmed, Martin Lavery, Peicheng Liao, Guodong Xie, Hao Huang, Long Li, Yongxiong Ren, Yan Yan, Zhe Zhao, Zhe Wang, Nima Ashrafi, Solyman Ashrafi, Roger D. Linquist, Moshe Tur, and Alan E. Willner, "Demonstration of Distance Emulation for an Orbital-Angular-Momentum Beam," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper STh1F.6, San Jose, CA, May 2015 (OSA, Wash., D.C., 2015).
53. Ahmed Almainan, Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Yinwen Cao, Mohammad-Reza Chitgarha, Peicheng Liao, Youichi Akasaka, Jeng-Yuan Yang, Motoyoshi Sekiya, Joseph Touch, Carsten Langrock, Martin Fejer, Moshe Tur, and Alan E. Willner, "Experimental Demonstration of Tunable Homodyne Detection for Two Channels Simultaneously using Nonlinear Optical Signal Processing to Automatically Lock a Single 'Local' Pump Laser to Two 20-Gbaud BPSK Data Signals," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper STh1O.4, San Jose, CA, May 2015 (OSA, Wash., D.C., 2015).
54. Guodong Xie, Long Li, Yongxiong Ren, Hao Huang, Zhe Zhao, Peicheng Liao, Ahmed Almainan, Yinwen Cao, Yan Yan, Changjing Bao, Nisar Ahmed, Zhe Wang, Nima Ashrafi, Solyman Ashrafi, Roger D. Linquist, Moshe Tur, and Alan E. Willner, "Enhanced Spectral Efficiency of 2.36 bits/s/Hz using Multiple Layer Overlay Modulation for QPSK over a 14-km Single Mode Fiber Link," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SW1M.6, San Jose, CA, May 2015 (OSA, Wash., D.C., 2015).
55. Guodong Xie, Changjing Bao, Yongxiong Ren, Yan Yan, Ahmed Almainan, Long Li, Peicheng Liao, Zhe Zhao, Nisar Ahmed, Zhe Wang, Yinwen Cao, Hao Huang, Nima Ashrafi, Solyman Ashrafi, Roger D. Linquist, Moshe Tur, and Alan E. Willner, "Experimental Demonstration of using Multi-Layer-Overlay Technique for Increasing Spectral Efficiency to 1.18 bits/s/Hz in a 3 Gbit/s Signal over 4-km Multimode Fiber," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper JTh2A.63, San Jose, CA, May 2015 (OSA, Wash., D.C., 2015).
56. Martin Lavery, Bettina Heim, Christian Peuntinger, Ebrahim Karimi, Omar Magaña-Loaiza, Thomas Bauer, Christoph Marquardt, Alan Willner, Robert Boyd, Miles Padgett, and Gerd Leuchs, "Study of Turbulence Induced Orbital Angular Momentum Channel Crosstalk in a 1.6 km Free-Space Optical Link,"

**REFEREED PROCEEDINGS: (CONTINUED)**

**APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper STu1L.4, San Jose, CA, May 2015 (OSA, Wash., D.C., 2015).

57. Yan Yan, Long Li, Guodong Xie, Changjing Bao, Peicheng Liao, Hao Huang, Yongxiong Ren, Nisar Ahemd, Zhe Zhao, Martin J. Lavery, Nima Ashrafi, Solyman Ashrafi, Shilpa Talwar, Soji Sajuyigbe, Moshe Tur, Andreas F. Molisch and Alan E. Willner, "Experimental Measurements of Multipath-Induced Intra- and Inter-Channel Crosstalk Effects in a Millimeter-wave Communications Link using Orbital-Angular-Momentum Multiplexing," **IEEE International Communication Conference(ICC) 2015**, paper1570038347, London, UK, Jun. 2015(IEEE, Piscataway, NJ, 2015).
58. Zhe Zhao, Yongxiong Ren, Guodong Xie, Yan Yan, Long Li, Hao Huang, Changjing Bao, Nisar Ahemd, Martin J. Lavery, Chongfu Zhang, Nima Ashrafi, Solyman Ashrafi, Shilpa Talwar, Soji Sajuyigbe, Moshe Tur, Andreas F. Molisch and Alan E. Willner, "Experimental Demonstration of 16-Gbit/s Millimeter-wave Communications Link using Thin Metamaterial Plates to Generate Data-Carrying Orbital-Angular-Momentum Beams," **IEEE International Communication Conference (ICC) 2015**, paper 1570051555, London, UK, Jun. 2015 (IEEE, Piscataway, NJ, 2015).
59. Amirhossein Mohajerin Ariaei, Morteza Ziyadi, Mohammad-Reza Chitgarha, Ahmed Almainan, Yinwen Cao, Youichi Akasaka, Jeng-Yuan Yang, Motoyoshi Sekiya, Joseph Touch, Moshe Tur, Shigehiro Takasaka, Ryuichi Sugizaki, Carsten langrock, Martin M. Fejer, and Alan Willner, "Experimental Demonstration of Tunable Phase-Noise Mitigation and Automatic Frequency/Phase Locking for a 20-32 Gbaud QPSK Homodyne Receiver using Optical Mixing of Nonlinearly Generated Higher Harmonics,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper M2E.4, Los Angeles, CA, Mar. 2015 (Optical Society of America, Washington, D.C., 2015).
60. Yinwen Cao, Morteza Ziyadi, Youichi akasaka, Amirhossein Mohajerin-Ariaei, Jeng-Yuan Yang, Ahmed Almainan, Peicheng Liao, Shigehiro Takasaka, Ryuichi Sugizaki, Joseph Touch, Motoyoshi Sekiya, Moshe Tur, Alan Willner, "Experimental Demonstration of Optical Signal Level Swapping and Multi-level Amplitude Noise Mitigation using Three Parametric Gain Regions, "**IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**,paper W2A.49, Los Angeles, CA, Mar. 2015 (Optical Society of America, Washington, D.C., 2015).
61. Deng Pan, Changjian Ke, Songnian Fu, Deming Liu and Alan Willner, "A Noise Suppression Method for Optical Spectrum Measurement Utilizing SBS-based Filter," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper W3I.1, Los Angeles, CA, Mar. 2015 (Optical Society of America, Washington, D.C., 2015).
62. Yongxiong Ren, Zhe Wang, Peicheng Liao, Long Li, Guogong Xie, Hao Huang, Zhe Zhao, Yan Yan, Nisar Ahmed, Martin P. J. Lavery, Nima Ashrafi, Solyman Ashrafi, Roger D. Linquist, Moshe Tur, Ivan B. Djordjevic, Mark A. Neifeld, and Alan E. Willner, "400-Gbit/s Free Space Optical Communications Link Over 120-meter using Multiplexing of 4 Collocated Orbital-Angular-Momentum Beams," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**,paper M2F.1, Los Angeles, CA, Mar. 2015 (Optical Society of America, Washington, D.C., 2015).

*\* Selected by the subcommittee as a "top-scored" paper. \**

63. Long Li, Guogong Xie, Yongxiong Ren, Nisar Ahmed, Hao Huang, Zhe Zhao, Peicheng Liao, Martin P. J. Lavery, Yan Yan, Changjing Bao, Zhe Wang, Nima Ashrafi, Solyman Ashrafi, Moshe Tur, and Alan E. Willner, "Performance Enhancement of an Orbital-Angular-Momentum based Free-space Optical Communications Link Through Beam Divergence Controlling," **IEEE/OSA Conference on Optical Fiber**

**REFEREED PROCEEDINGS: (CONTINUED)**

**Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper M2F.6, Los Angeles, CA, Mar. 2015 (Optical Society of America, Washington, D.C., 2015).

64. Yongxiong Ren, Long Li, Guodong Xie, Yan Yan, Yinwen Cao, Hao Huang, Nisar Ahemd, Martin J. Lavery, Zhe Zhao, Chongfu Zhang, Miles Padgett, Moshe Tur, Giuseppe Caire, Andreas F. Molisch and Alan E. Willner, "Experimental Demonstration of 16 Gbit/s millimeter-wave Communications using MIMO Processing of 2 OAM Modes on Each of Two Transmitter/Receiver Antenna Apertures," **IEEE Globecom 2014**, paper 1569944271, Austin, TX, Dec. 2014 (IEEE, Piscataway, NJ, 2014).

*\* 2014 Globecom Best Paper Award (14 papers out of ~2100 submissions). \**

65. Guodong Xie, Long Li, Yongxiong Ren, Hao Huang, Yan Yan, Nisar Ahmed, Zhe Zhao, Martin P. J. Lavery, Nima Ashrafi, Solyman Ashrafi, Moshe Tur, Andreas F. Molisch, and Alan E. Willner, "Performance Metrics and Design Parameters for an FSO Communications Link Based on Multiplexing of Multiple Orbital-Angular-Momentum Beams," **IEEE Globecom 2014**, paper 1570005079, Austin, TX, Dec. 2014 (IEEE, Piscataway, NJ, 2014).
66. Yongxiong Ren, Guodong Xie, Hao Huang, Long Li, Nisar Ahmed, Yan Yan, Martin Lavery, Moshe Tur, Mark A. Neifeld, Samuel Dolinar, Miles Padgett, Robert Boyd, Jeffrey Shapiro, and Alan Willner, "1-Tbit/s Orbital-Angular-Momentum Multiplexed FSO Link Through Emulated Turbulence With a Data-Carrying Beacon on a Separate Wavelength for Compensation," **Frontiers in Optics (FiO) 2014**, paper FTh3B.7, Tucson, AZ, Oct. 2014 (Optical Society of America, 2014).
67. Guodong Xie, Yongxiong Ren, Hao Huang, Nisar Ahmed, Long Li, Yan Yan, Martin Lavery, Miles Padgett, Alan Willner, "Experimental Analysis of Multiplexing/demultiplexing Laguerre Gaussian Beams with Different Radial Index," **Frontiers in Optics (FiO) 2014**, paper FTh4B.6, Tucson, AZ, Oct. 2014 (Optical Society of America, 2014).
68. Martin Lavery, Hao Huang, Yongxiong Ren, Guodong Xie, and Alan Willner, " Demonstration of a 280 G-bit/s Communications Link Utilizing Plane Wave Multiplexing," **Frontiers in Optics (FiO) 2014**, paper FTh3B.4, Tucson, AZ, Oct. 2014 (Optical Society of America, 2014).
69. Jian Wang, Shuhui Li, Ming Luo, Jun Liu, Long Zhu, Chao Li, Dequan Xie, Qi Yang, Shaohua Yu, Junqiang Sun, Xinliang Zhang, William Shieh, and Alan E. Willner, "N-Dimensional Multiplexing Link with 1.036-Pbit/s Transmission Capacity and 112.6-bit/s/Hz Spectral Efficiency using OFDM-8QAM Signals over 368 WDM Pol-Muxed 26 OAM Modes," **European Conference on Optical Communications (ECOC)**, paper Mo.4.5.1, Cannes, France, Sept. 2014.
70. Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Mohammad Reza Chitgarha, Yinwen Cao, Salman Khaleghi, Ahmed Almainan, Joseph Touch, Loukas Paraschis, Moshe Tur, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Optical Channel De-aggregator of 30-Gbaud QPSK and 20- Gbaud 8-PSK Data using Mapping onto Constellation Axes," **European Conference on Optical Communications (ECOC)**, paper P.3.18, Cannes, France, Sept. 2014.
71. Mohammad Reza Chitgarha, Yinwen Cao, Amirhossein Mohajerin-Ariaei, Morteza Ziyadi, Salman Khaleghi, Ahmed Almainan, Joseph Touch, Carsten Langrock, Martin M. Fejer, and Alan E. Willner, "Tunable Homodyne Detection using Nonlinear Optical Signal Processing to Automatically Lock a "Local" Pump Laser to an Incoming 20-to-40-Gbaud QPSK Data Signal," **European Conference on Optical Communications (ECOC)**, paper Tu.3.6.5, Cannes, France, Sept. 2014.
72. Nisar Ahemd, Martin J. Lavery, Hao Huang, Guodong Xie, Yongxiong Ren, Yan Yan, and Alan E. Willner, Experimental Demonstration of Obstruction-Tolerant Free-Space Transmission of Two 50-Gbaud QPSK

**REFEREED PROCEEDINGS: (CONTINUED)**

- Data Channels using Bessel Beams Carrying Orbital Angular Momentum", **European Conference on Optical Communications (ECOC)**, paper We.3.6.2, Cannes, France, Sept. 2014.
73. AmirhosseinMohajerin-Ariaei, Youichi Akasaka, Jeng-Yuan Yang, Mohammad Reza Chitgarha, Morteza Ziyadi, Yinwen Cao, Ahmed Almainan, Joseph Touch, Moshe Tur, Motoyoshi Sekiya, S. Takasaka, R. Sugizaki, CarstenLangrock, Martin M. Fejer, and Alan E. Willner, "Bit-Rate-Tunable Noise Mitigation of 30-Gbaud QPSK Data using Phase Quantization and Amplitude Saturation,"**European Conference on Optical Communications (ECOC)**, paper P.3.20, Cannes, France, Sept. 2014.
  74. Joe Touch and Alan E. Willner, "Native Digital Processing for Optical Networking,"**Third International Conference on Future Generation Communication Technologies (FGCT 2014)**, paper 137, Dublin, Ireland, Aug. 2014 (IEEE, Piscataway, NJ, 2014).
  75. AtiyahAhsan, Michael Wang, Mohammad Chitgarha, Dan Kilper, Alan Willner, and Keren Bergman,"Autonomous OSNR Monitoring and Cross-Layer Control in a Mixed Bit-Rate and Modulation Format System using Pilot Tones," **Advanced Photonics for Communications 2014**, paper NT5D.3, San Diego, CA, Jul. 2014 (Optical Society of America, 2014).
  76. Deng Pan, Changjian Ke, Xin Zhou, Deming Liu, and Alan E. Willner, "Dynamic Range Improvement Through Balanced Detection for SBS-based High Resolution OSAs," **19th Opto-Electronics and Communications Conference (OECC)**, paper WE9F-4, Melbourne, Australia, July 2014.
  77. Yan Yan, Guodong Xie, Hao Huang, Martin J. Lavery, Nisar Ahemd, Changjing Bao, Yongxiong Ren, Andreas F. Molisch, Moshe Tur, Miles Padgett, and Alan E. Willner, "Demonstration of 8-Mode 32-Gbit/s Millimeter-Wave Free-Space Communication Link using 4 Orbital-Angular-Momentum Modes on 2 Polarizations," **IEEE International Communication Conference (ICC) 2014**, paper1569835875, Sydney, Australia, Jun. 2014(IEEE, Piscataway, NJ, 2014).
  78. Asher Voskoboinik, Alan E. Willner, Moshe Tur, "Performance Analysis of the Sweep-free Brillouin Optical Time-domain Analyzer (SF-BOTDA)," **23rd International Conference on Optical Fiber Sensors**, paper 9157, Santander, Spain, Jun. 2014
  79. AmirhosseinMohajerinAriaei, Mohammed Chitgarha, MortezaZiyadi, Salman Khaleghi, Ahmed Almainan, Joseph Touch, Moshe Tur, LoukasParaschis, CarstenLangrock, Martin Fejer, and Alan Willner, "Experimental Demonstration of a 2-Stage Continuously Tunable Optical Tapped-Delay-Line in which N+M Pump Lasers Produce N×M Taps," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SM1G.5, San Jose, CA, June 2014 (Optical Society of America, Wash., D.C., 2014).
  80. Zhe Zhao, Yongxiong Ren, Hao Huang, Guodong Xie, Yan Yan, Nisar Ahmed, Changjing Bao, Long Li, Yinwen Cao, and Alan Willner, "Method for Bi-directional Conversion between Fundamental Gaussian Beams and Spatially Polarized Beams using a Spatial Light Modulator," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SM3J.4, San Jose, CA, June 2014 (Optical Society of America, Wash., D.C., 2014).
  81. Guodong Xie, Yongxiong Ren, Hao Huang, Nisar Ahmed, Long Li, Yan Yan, Martin Lavery, Miles Padgett, Moshe Tur, Samuel Dolinar, and Alan Willner, "Experimental Comparison of Single and Double Partial Receiver Apertures for Recovering Signals Transmitted using Orbital-Angular-Momentum," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SM3J.2, San Jose, CA, June 2014 (Optical Society of America, Wash., D.C., 2014).
  82. Hao Huang, Guodong Xie, Nisar Ahmed, Yongxiong Ren, Yan Yan, Martin Lavery, Miles Padgett, Samuel Dolinar, and Alan Willner,"Experimental Demonstration of Orbital-Angular-Momentum Demultiplexing

**REFEREED PROCEEDINGS: (CONTINUED)**

- using an Optical FFT in the Spatial Domain," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SM3J.6, San Jose, CA, June 2014 (Optical Society of America, Wash., D.C., 2014).
83. Changjing Bao, Lin Zhang, Yan Yan, Hao Huang, Guodong Xie, Anu Agarwal, Lionel Kimerling, Jurgen Michel, and Alan Willner, "Tailoring of a Broader and Flatter Frequency Comb using a Microring Resonator with a Low-Index Slot," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SM1M.5, San Jose, CA, June 2014 (Optical Society of America, Wash., D.C., 2014).
  84. Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Mohammed Chitgarha, Salman Khaleghi, Ahmed Almaiman, Amin Abouzaid, Joseph Touch, Moshe Tur, Loukas Paraschis, Carsten Langrock, Martin Fejer, and Alan Willner, "Experimental Demonstration of a Variable Bandwidth, Shape and Center-Frequency RF Photonics Filter using a Continuously Tunable Optical Tapped-Delay-Line and Having an Optical Output," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper STu3I.4, San Jose, CA, June 2014 (Optical Society of America, Wash., D.C., 2014).
  85. Nisar Ahmed, Guodong Xie, Yongxiong Ren, Long Li, Hao Huang, Yan Yan, and Alan Willner, "Experimental Demonstration of an Apodized Aperture for Receiving a Data-Carrying Orbital-Angular-Momentum Beam," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper SM3J.1, San Jose, CA, June 2014 (Optical Society of America, Wash., D.C., 2014).
  86. Martin Lavery, Yan Yan, Guodong Xie, Hao Huang, Moshe Tur, Andreas Molisch, Miles Padgett, and Alan Willner, "A Quasi-Optical Tool for the Demultiplexing of Orbital Angular Momentum Carried at Millimeter-Wave Frequencies," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper FTh3D.8, San Jose, CA, June 2014 (Optical Society of America, Wash., D.C., 2014).
  87. Stanley Johnson, Weiyang Mo, Milorad Cvijetic, Jun He, John Wissinger, and Alan E. Willner, "Real-Time Software-Defined Dynamic Resource Allocation using OpenFlow for Next-Generation OFDM-based Optical Access Networks," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper Tu2F.5, San Francisco, CA, Mar. 2014 (Optical Society of America, Washington, D.C., 2014).
  88. Giovanni Milione, Hao Huang, Martin Lavery, Alan E. Willner, Robert Alfano, Thien An Nguyen, and Miles Padgett, "Orbital-Angular-Momentum Mode (De)Multiplexer: A Single Optical Element for MIMO-based and non-MIMO-based Multimode Fiber Systems," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper M3K.6, San Francisco, CA, Mar. 2014 (Optical Society of America, Washington, D.C., 2014).
  89. Amirhossein Mohajerin Ariaei, Mohammad Reza Chitgarha, Morteza Ziyadi, Salman Khaleghi, Ahmed Almaiman, Moshe Willner, Joe Touch, Moshe Tur, Loukas Paraschis, Carsten Langrock, Martin Fejer, and Alan E. Willner, "Experimental Demonstration of All Optical Phase Noise Mitigation of 40-Gbits/s QPSK Signals by Mixing Differentially Delayed Nonlinear Products," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper W3F.3, San Francisco, CA, Mar. 2014 (Optical Society of America, Washington, D.C., 2014).
  90. Morteza Ziyadi, Mohammad Reza Chitgarha, Amirhossein Mohajerin Ariaei, Salman Khaleghi, Ahmed Almaiman, Moshe Willner, Joe Touch, Moshe Tur, Loukas Paraschis, Carsten Langrock, Martin Fejer, and Alan E. Willner, "Experimental Demonstration of Optical Nyquist Generation of 32-Gbaud QPSK using a Comb-based Tunable Optical Tapped-Delay-Line FIR Filter," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper W1G.2, San Francisco, CA, Mar. 2014 (Optical Society of America, Washington, D.C., 2014).
  91. Guodong Xie, Yongxiong Ren, Hao Huang, Martin Lavery, Nisar Ahmed, Yan Yan, Changjing Bao, Long Li, Zhe Zhao, Yinwen Cao, Moshe Willner, Miles Padgett, Moshe Tur, Samuel Dolinar, Robert Boyd,

**REFEREED PROCEEDINGS: (CONTINUED)**

- Jeffrey Shapiro, and Alan E. Willner, "Experiment Turbulence Compensation of 50-Gbaud/s Orbital-Angular-Momentum QPSK Signals using Intensity-only based SPGD Algorithm," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper W1H.1, San Francisco, CA, Mar. 2014 (Optical Society of America, Washington, D.C., 2014).
92. Ahmed Almainan, Mohammad Reza Chitgarha, Wajih Daab, Morteza Ziyadi, Amirhossein Mohajerin Ariaei, Salman Khaleghi, Moshe Willner, Vijay Vusirikala, Wendy Zhao, Dan Kilper, Loukas Paraschis, Atiyah Ahsan, Michael Wang, Keren Bergman, Moshe Tur, Joe Touch, and Alan E. Willner, "Experimental Demonstration of Robustness and Accuracy of an MZI-based OSNR Monitor under Transmitter Drift and Reconfigurable Networking Conditions for Pol-Muxed 25-Gbaud QPSK and 16-QAM Channels," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper W2A.30, San Francisco, CA, Mar. 2014 (Optical Society of America, Washington, D.C., 2014).
  93. Moshe J. Willner, Hao Huang, Nisar Ahmed, Guodong Xie, Yongxiong Ren, Yan Yan, Martin P. J. Lavery, Miles J. Padgett, Moshe Tur, and Alan E. Willner, "Reconfigurable Orbital-Angular-Momentum Manipulation and Switching of Polarization-multiplexed 100-Gbit/s QPSK Data Channels," **IEEE Photonics Conference (IPC), Postdeadline Paper**, paper PDP1, Bellevue, WA, Sept.2013 (IEEE, Piscataway, NJ, 2013).
  94. Guodong Xie, Yongxiong Ren, Hao Huang, Yan Yan, Changjing Bao, Nisar Ahmed, Moshe Willner, Martin Lavery, Miles Padgett, and Alan Willner "Analysis of Aperture Size for Partially Receiving and Demultiplexing 100-Gbit/s Optical Orbital Angular Momentum Channels over Free-Space Link," **IEEE Globecom 2013**, paper 1569795545, Atlanta, GA, Dec. 2013 (IEEE, Piscataway, NJ, 2013).
  95. Joe Touch, S. Suryaputra, J. Bannister, and Alan E. Willner, "An Optical Packet Switch using Forward-Shift Switched Delay Lines," **2013 18th OptoElectronics and Communications Conference**, paper TuPT\_4, Kyoto, Japan, Jun. 2013 (Optical Society of America, 2013).
  96. Yongxiong Ren, Hao Huang, Guodong Xie, Changjing Bao, Long Li, Nisar Ahmed, Yan Yan, Moshe Willner, Martin P. J. Lavery, Moshe Tur, Mark A. Neifeld, Sam J. Dolinar, Miles J. Padgett, Robert W. Boyd, Jeffrey H. Shapiro, and Alan E. Willner, "Simultaneous Pre-and Post-Turbulence Compensation of Multiple Orbital-Angular-Momentum 100-Gbit/s Data Channels in a Bidirectional Link using a Single Adaptive-Optics System," **Frontiers in Optics (FiO) 2013, Postdeadline Paper**, paper FW6B.6, Orlando, FL, Oct. 2013 (Optical Society of America, 2013).
  97. Yongxiong Ren, Guodong Xie, Hao Huang, Changjing Bao, Yan Yan, Nisar Ahmed, Martin Lavery, Baris Erkmen, Samuel Dolinar, Moshe Tur, Mark Neifeld, Miles Padgett, Robert Boyd, Jeffrey Shapiro, and Alan Willner, "Simultaneous Turbulence Compensation of Multiple Orbital-Angular-Momentum 100-Gbit/s Data Channels using a Gaussian Probe Beam for Wavefront Sensing," **European Conference on Optical Communications (ECOC)**, paper We.3.D.1, London, Great Britain, Sept. 2013.
  98. Hao Huang, Guodong Xie, Yongxiong Ren, Changjing Bao, Yan Yan, Nisar Ahmed, Samuel Dolinar, Mark Neifeld, Alan Willner, Mohammad Reza Chitgarha, and Morteza Ziyadi, "4x4 MIMO Equalization to Mitigate Crosstalk Degradation in a Four-Channel Free-Space Orbital-Angular-Momentum-Multiplexed System," **European Conference on Optical Communications (ECOC)**, paper Th.1.C.4, London, Great Britain, Sept. 2013.
  99. Mohammad Reza Chitgarha, Morteza Ziyadi, Salman Khaleghi, Amirhossein Mohajerin-Ariaei, Ahmed Almainan, Joe Touch, Moshe Tur, Carsten Langrock, Martin Fejer, and Alan Willner, "Reconfigurable 2-D WDM Optical Tapped-Delay-Line to Correlate 20-Gbaud QPSK Data," **European Conference on Optical Communications (ECOC)**, paper Tu.1.C.6, London, Great Britain, Sept. 2013.

**REFEREED PROCEEDINGS: (CONTINUED)**

100. Nisar Ahmed, Hao Huang, Yongxiong Ren, Yan Yan, Guodong Xie, and Alan Willner, "Reconfigurable 2×2 Orbital-Angular-Momentum-Based Optical Switching of 50-Gbaud QPSK Channels," **European Conference on Optical Communications (ECOC)**, paper Th.1.C.3, London, Great Britain, Sept. 2013.
- \* Selected by the subcommittee as the top-ranked paper. \**
101. Morteza Ziyadi, Mohammad Reza Chitgarha, Salman Khaleghi, Amirhossein Mohajerin-Ariaei, Ahmed Almainan, Joe Touch, Moshe Tur, Carsten Langrock, Martin Fejer, and Alan Willner, "Tunable Optical Correlator using an Optical Frequency Comb for Generating Multiple Taps in a Tapped-Delay-Line Composed of a Single Nonlinear Element," **European Conference on Optical Communications (ECOC)**, paper Tu.1.C.5, London, Great Britain, Sept. 2013.
- \* Selected by the subcommittee as a "top-scored" paper. \**
102. Deng Pan, Changjian Ke, Songnian Fu, Yaping Liu, Deming Liu, and Alan Willner, "Laser Spectral Linewidth Suppression Scheme for Coherent Detection," **European Conference on Optical Communications (ECOC)**, paper P.1.12, London, Great Britain, Sept. 2013.
103. Yan Yan, Lin Zhang, Changjing Bao, and Alan E. Willner, "Broadband Low Chromatic Dispersion and Supercontinuum Generation in a Conventional Step-Index Fiber and an OAM-Supporting Vortex Fiber using a Submicron Slot", **IEEE Photonics Conference 2013**, paper TuF1.4, September, Bellevue, WA (IEEE, Piscataway, NJ, 2013).
104. J. Touch, S. Suryaputra, J. Bannister, and A.E. Willner, "An Optical Packet Switch using Forward-Shift Switched Delay Lines," **10th Conference on Lasers and Electro-Optics Pacific Rim, and the 18th OptoElectronics and Communications Conference/ Photonics in Switching 2013 (CLEO-PR&OECC/PS 2013)**, paper TuPT-4, July 2013 (Optical Society of America, Wash., D.C., 2013).
105. Yongxiong Ren, Yequn Zhang, Yang Yue, Nenad Bozinovic, Guodong Xie, Hao Huang, Moshe Tur, Poul Kristensen, Ivan Djordjevic, Siddharth Ramachandran, and Alan Willner, "Efficient Crosstalk Mitigation of OAM Based 400-Gbit/s QPSK Data Transmission in 1.1-km Vortex Fiber by using Soft-Decision LDPC Codes," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CM2G.5, San Jose, CA, June 2013 (Optical Society of America, Wash., D.C., 2013).
106. Mohammad Reza Chitgarha, Morteza Ziyadi, Salman Khaleghi, Ahmed Almainan, Amirhossein Mohajerin Ariaei, Loukas Paraschis, Ori Gerstel, Carsten Langrock, Martin Fejer, Joe Touch, and Alan E. Willner, "Demonstration of Tunable Optical Generation of Higher-Order Modulation Formats using Nonlinearities and Coherent Frequency Comb," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CTu1G.2, San Jose, CA, June 2013 (Optical Society of America, Wash., D.C., 2013).
107. Asher Voskoboinik, Zhiyong Zhang, Ahmed Almainan, Alan E. Willner, and Moshe Tur, "Differential Pulse-Width Pair BOTDA using Simultaneous Frequency Domain Interrogation," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CTh4H.5, San Jose, CA, June 2013 (Optical Society of America, Wash., D.C., 2013).
108. Changjing Bao, Yan Yan, Lin Zhang, Yang Yue, and Alan E. Willner, "Tailoring of Low Chromatic Dispersion over a Broadband in Silicon Waveguides using a Double-Slot Design," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper JTU4A.53, San Jose, CA, June 2013 (Optical Society of America, Wash., D.C., 2013).
109. Hao Huang, Yongxiong Ren, Guodong Xie, Yan Yan, Yang Yue, Nisar Ahmed, Martin Lavery, Miles Padgett, Sam Dolinar, and Alan E. Willner, "Tunable Filter for Orbital-Angular-Momentum Multiplexed

**REFEREED PROCEEDINGS: (CONTINUED)**

- Optical Channels,"**APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper JTU4A.89, San Jose, CA, June 2013 (Optical Society of America, Wash., D.C., 2013).
110. Zhe Zhao, Jian Wang, Shuhui Li, and Alan E. Willner, "Selective Broadband Generation of Orbital Angular Momentum Carrying Vector Beams using Metamaterials,"**APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper QM4A.7, San Jose, CA, June 2013 (Optical Society of America, Wash., D.C., 2013).
  111. Asher Voskoboinik, Alan E. Willner, and Moshe Tur, "Analytical Investigation of the Brillouin Interaction Between Multiple Pulsed Pump Tones and Probe Waves," **SPIE's 5th European Workshop on Optical Fibre Sensors (EWOFS) 2013**, paper 8794-158, Krakow, Poland, May 2013 (Bellingham, WA, SPIE, 2013).
  112. Hao Huang, Guodong Xie, Yan Yan, Nisar Ahmed, Yongxiong Ren, Yang Yue, Dvora Rogawski, Moshe Tur, Baris Erkmen, Kevin Birnbaum, Samuel Dolinar, Martin Lavery, Miles Padgett, and Alan Willner, "100 Tbit/s Free-Space Data Link using Orbital Angular Momentum Mode Division Multiplexing Combined with Wavelength Division Multiplexing,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OTh4G.5, Anaheim, CA, Mar. 2013 (Optical Society of America, Washington, D.C., 2013).
  113. Salman Khaleghi, Mohammad Reza Chitgarha, Morteza Ziyadi, Wajih Daab, Amirhossein Mohajerin-Ariaei, Dvora Rogawski, Joseph Touch, Moshe Tur, Carsten Langrock, Martin Fejer, and Alan Willner, "A Tunable Optical Tapped-Delay-Line that Simultaneously and Independently Processes Multiple Input WDM Data Signals,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OTh4D.2, Anaheim, CA, Mar. 2013 (Optical Society of America, Washington, D.C., 2013).
  114. Yang Yue, Nenad Bozinovic, Yongxiong Ren, Hao Huang, Moshe Tur, Poul Kristensen, Siddharth Ramachandran, and Alan Willner, "1.6-Tbit/s Muxing, Transmission and Demuxing Through 1.1-km of Vortex Fiber Carrying 2 OAM Beams Each with 10 Wavelength Channels,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OTh4G.2, Anaheim, CA, Mar. 2013 (Optical Society of America, Washington, D.C., 2013).
  115. Hao Huang, Yang Yue, Yan Yan, Nisar Ahmed, Yongxiong Ren, and Alan Willner, "Orbital-Angular-Momentum-Based Reconfigurable and "Lossless" Optical Add/Drop Multiplexing of Multiple 100-Gbit/s Channels,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OTh4G.4, Anaheim, CA, Mar. 2013 (Optical Society of America, Washington, D.C., 2013).
  116. Yang Yue, Nisar Ahmed, Hao Huang, Yan Yan, Yongxiong Ren, and Alan Willner, "Reconfigurable Orbital-Angular-Momentum-Based Switching among Multiple 100-Gbit/s Data Channels,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OM2G.1, Anaheim, CA, Mar. 2013 (Optical Society of America, Washington, D.C., 2013).
  117. Mohammad Reza Chitgarha, Salman Khaleghi, Wajih Daab, Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Dvora Rogawski, Moshe Tur, Vijay Vusirikala, Wendy Zhao, Joseph Touch, and Alan Willner, "Demonstration of WDM OSNR Performance Monitoring and Operating Guidelines for Pol-Muxed 200-Gbit/s 16-QAM and 100-Gbit/s QPSK Data Channels,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OTh3B.6, Anaheim, CA, Mar. 2013 (Optical Society of America, Washington, D.C., 2013).



**REFEREED PROCEEDINGS: (CONTINUED)**

118. Mohammad Reza Chitgarha, Salman Khaleghi, Morteza Ziyadi, Wajih Daab, Amirhossein Mohajerin-Ariaei, Dvora Rogawski, Joseph Touch, Moshe Tur, Carsten Langrock, Martin Fejer, and Alan Willner, "All-Optical Phase Noise Suppression using Optical Nonlinear Mixing Combined with Tunable Optical Delays," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OW4C.5, Anaheim, CA, Mar. 2013 (Optical Society of America, Washington, D.C., 2013).
119. Y. Rao, C. Chase, M. C.Y. Huang, S. Khaleghi, M. R. Chitgarha, M. Ziyadi, D. P. Worland, A. E. Willner, C. J. Chang-Hasnain, "MEMS Tunable 1550-nm High Contrast Grating VCSEL," **IEEE 23rd International Semiconductor Laser Conference (ISLC)**, paper TuA3, October, San Diego, CA (IEEE, Piscataway, NJ, 2012).
120. Asher Voskoboinik, Alan E. Willner, Moshe Tur, "Sweep-Free Brillouin Time-Domain Analysis (SF-BOTDA) with Improved Spatial Resolution," **22nd International Conference on Optical Fiber Sensors**, paper 398, Beijing, China, Oct. 2012.
121. Nenad Bozinovic, Yang Yue, Yongxiong Ren, Moshe Tur, Poul Kristensen, Alan Willner, and Siddharth Ramachandran, "Orbital Angular Momentum (OAM) Based Mode Division Multiplexing (MDM) over a Km-length Fiber," **European Conference on Optical Communications (ECOC), Postdeadline Paper Th3C.6**, Amsterdam, Netherlands, Sept. 2012.
122. Mohammad Reza Chitgarha, Salman Khaleghi, Zichen Ma, Morteza Ziyadi, Ori Gerstel, Loukas Paraschis, Carsten Langrock, Martin Fejer, and Alan Willner, "Flexible, Reconfigurable Capacity Output of a High-Performance 64-QAM Optical Transmitter," **European Conference on Optical Communications (ECOC)**, paper P3.14, Amsterdam, Netherlands, Sept. 2012.
123. Yan Yan, Yang Yue, Hao Huang, Yongxiong Ren, Nisar Ahmed, Alan Willner, and Samuel Dolinar, "Spatial-Mode Multicasting of a Single 100-Gbit/s Orbital Angular Momentum (OAM) Mode onto Multiple OAM Modes," **European Conference on Optical Communications (ECOC)**, paper Th.2.D.1, Amsterdam, Netherlands, Sept. 2012.
124. Yongxiong Ren, Hao Huang, Yequn Zhang, Yang Yue, Yan Yan, Nisar Ahmed, Ivan Djordjevic, Sam Dolinar, and Alan Willner, "Experimental Demonstration of LDPC Coded Free-Space, Space-Division-Multiplexed Systems using Orbital Angular Momentum Modes," **European Conference on Optical Communications (ECOC)**, paper Th.2.D.4, Amsterdam, Netherlands, Sept. 2012.
125. Jian Wang, Jeng-Yuan Yang, Hao Huang, and Alan E. Willner, "All-Optical 50-Gbaud/s Three-Input Hybrid Addition/Subtraction of Quaternary Base Numbers using Multiple Non-Degenerate FWM Processes and 100-Gbit/s DQPSK Signals," **European Conference on Optical Communications (ECOC)**, paper Tu.1.A.4, Amsterdam, Netherlands, Sept. 2012.
126. Asher Voskoboinik, Yair Peled, Hao Huang, Alan E. Willner, and Moshe Tur, "Frequency-domain Analysis of Dynamically Applied Strain using Sweep-Free Brillouin Time-domain Analyzer," **European Conference on Optical Communications (ECOC)**, paper P1.03, Amsterdam, Netherlands, Sept. 2012.
127. Jian Wang, H. Y. Fu, D. Y. Geng, and Alan E. Willner, "All-Optical Wavelength-/Time-Selective Switching/Dropping/Swapping for 100-GHz-Spaced WDM Signals using a Periodically Poled Lithium Niobate Waveguide," **European Conference on Optical Communications (ECOC)**, paper Th.1.A.5, Amsterdam, Netherlands, Sept. 2012.
128. Nisar Ahmed, Hao Huang, Yang Yue, Yan Yan, Yongxiong Ren, and Alan E. Willner, "Demonstration of Add/Drop Multiplexer for 100-Gbit/s RZ-QPSK Channels over Spatially Multiplexed Orbital Angular

**REFEREED PROCEEDINGS: (CONTINUED)**

- Momentum Modes," **IEEE Photonics Conference 2012**, paper WU4, September, Burlingame, CA (IEEE, Piscataway, NJ, 2012).
129. Yi Rao, Christopher Chase, Michael C. Y. Huang, Salman Khaleghi, Mohammad Reza Chitgarha, Morteza Ziyadi, D. Phillip Worland, Alan Willner, and Connie Chang-Hasnain, "Continuous Tunable 1550-nm High Contrast Grating VCSEL," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO), Postdeadline Paper** CTh5C.3, San Jose, CA, June 2012 (Optical Society of America, Wash., D.C., 2012).
  130. Yongxiong Ren, Hao Huang, Jeng-Yuan Yang, Yan Yan, Nisar Ahmed, Yang Yue, Alan Willner, Kevin Birnbaum, John Choi, Baris Erkmen, and Sam Dolinar, "Correction of Phase Distortion of an OAM Mode using GS Algorithm based Phase Retrieval," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CF3I.4, San Jose, CA, June 2012 (Optical Society of America, Wash., D.C., 2012).
  131. Hao Huang, Yongxiong Ren, Nisar Ahmed, Yan Yan, Yang Yue, Amanda Bozovich, Jeng-Yuan Yang, Alan Willner, Kevin Birnbaum, Baris Erkmen, John Choi, and Sam Dolinar, "Demonstration of OAM Mode Distortions Monitoring using Interference-Based Phase Reconstruction," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CF3C.4, San Jose, CA, June 2012 (Optical Society of America, Wash., D.C., 2012).
  132. Yang Yue, Lin Zhang, Yan Yan, Nisar Ahmed, Jeng-Yuan Yang, Hao Huang, Yongxiong Ren, Sam Dolinar, Moshe Tur, and Alan Willner, "Octave-spanning Supercontinuum Generation of Vortices in a As<sub>2</sub>S<sub>3</sub> Ring Photonic Crystal Fiber," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CTh4B.6, San Jose, CA, June 2012 (Optical Society of America, Wash., D.C., 2012).
  133. Yan Yan, Hao Huang, Yang Yue, Yongxiong Ren, Nisar Ahmed, Alan Willner, and Sam Dolinar, "Angular Sliced Laguerre-Gaussian (LG) Beams to Increase the Channel Number in Spatial-Mode Multiplexed System," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CM2A.8, San Jose, CA, June 2012 (Optical Society of America, Wash., D.C., 2012).
  134. Salman Khaleghi, Mohammad Reza Chitgarha, Omer F. Yilmaz, Moshe Tur, Michael W. Haney, Carsten Langrock, Martin M. Fejer, Alan E. Willner, "Experimental Characterization of Phase Tuning using Fine Wavelength Offset in a Complex-Coefficient Optical FIR Filter," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CM2B.4, San Jose, CA, June 2012 (Optical Society of America, Wash., D.C., 2012).
  135. Yan Yan, Jeng-Yuan Yang, Yang Yue, Mohammad Chitgarha, Hao Huang, Nisar Ahmed, Jian Wang, Moshe Tur, Sam Dolinar, and Alan Willner, "High-Purity Generation and Power-Efficient Multiplexing of Optical Orbital Angular Momentum (OAM) Modes in a Ring Fiber for Spatial-Division Multiplexing Systems," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper JTh2A.58, San Jose, CA, June 2012 (Optical Society of America, Wash., D.C., 2012).
  136. Asher Voskoboinik, Amanda Bozovich, Alan Willner, and Moshe Tur, "Sweep-free Brillouin Optical Time-Domain Analyzer with Extended Dynamic Range," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CTh1G.3, San Jose, CA, June 2012 (Optical Society of America, Wash., D.C., 2012).
  137. M. R. Chitgarha, S. Khaleghi, O. F. Yilmaz, M. Tur, M. W. Haney, and A. Willner, "Tunable Complex-Weight All-Optical IIR Filter Design based on Conversion/Dispersion Delays," **APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CF2I.4, San Jose, CA, June 2012 (Optical Society of America, Wash., D.C., 2012).
  138. Hao Huang, Jeng-Yuan Yang, Xiaoxia Wu, Salman Khaleghi, Moshe Tur, and Alan Willner, "All-Optical Sub-Channel Data Erasing and Updating for a 16-QAM Signal using a Single PPLN Waveguide,"

**REFEREED PROCEEDINGS: (CONTINUED)**

- APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CM2B.3, San Jose, CA, June 2012 (Optical Society of America, Wash., D.C., 2012).
139. Asher Voskoboinik, Yair Peled, Alan E. Willner, and Moshe Tur, "Fast and Distributed Dynamic Sensing of Strain using Sweep-Free Brillouin Optical Time-Domain analysis (SF-BOTDA)," **3rd Asia Pacific Optical Sensors Conference (APOS 2012)**, paper APO12-62, Sydney, Australia, Feb. 2012.
  140. Mohammad Reza Chitgarha, Salman Khaleghi, Omer F. Yilmaz, Moshe Tur, Michael W. Haney, Alan E. Willner, "Coherent Multi-Pattern Correlator and All-Optical Equalizer Enabling Simultaneous Equalization, Wavelength Conversion and Multicasting," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, Los Angeles, CA, Mar. 2012 (Optical Society of America, Washington, D.C., 2012).
  141. Salman Khaleghi, Mohammad Reza Chitgarha, Omer F. Yilmaz, Moshe Tur, Michael W. Haney, Alan E. Willner, "Universal QAM Encoder/Converter using Fully Tunable Complex-Coefficient Optical Tapped-Delay Line," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, Los Angeles, CA, Mar. 2012 (Optical Society of America, Washington, D.C., 2012).
  142. Yang Yue, Yan Yan, Nisar Ahmed, Jeng-Yuan Yang, Lin Zhang, Yongxiong Ren, Hao Huang, Samuel Dolinar, Moshe Tur, and Alan Willner, "Mode and Propagation Effects of Optical Orbital Angular Momentum (OAM) Modes in a Ring Fiber," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OM2D.2, Los Angeles, CA, Mar. 2012 (Optical Society of America, Washington, D.C., 2012).
  143. Hao Huang, Jeng-Yuan Yang, Yang Yue, Yongxiong Ren, Scott Nuccio, Raluca Dinu, Devang Parekh, Constance Chang-Hasnain, and Alan Willner, "100-Gbit/s Amplitude and Phase Modulation Characterization of a Single-Drive, Low- $V\pi$  Polymer Mach-Zehnder Modulator," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OW4F.5, Los Angeles, CA, Mar. 2012 (Optical Society of America, Washington, D.C., 2012).
  144. J. Wang, J.-Y. Yang, I. Fazal, N. Ahmed, Y. Yan, A. Willner, S. Dolinar, and M. Tur, "Experimental Demonstration of 100-Gbit/s DQPSK Data Exchange between Orbital-Angular-Momentum Modes," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OW1I5, Los Angeles, CA, Mar. 2012 (Optical Society of America, Washington, D.C., 2012).
  145. Omer Yilmaz, Salman Khaleghi, Mohammad Reza Chitgarha, and Alan Willner, "Simultaneous Multiple Pattern Correlation with  $<1$  ns Reconfiguration Time," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OW4H.2, Los Angeles, CA, Mar. 2012 (Optical Society of America, Washington, D.C., 2012).
  146. Yang Yue, Yan Yan, Nisar Ahmed, Jeng-Yuan Yang, Lin Zhang, Yongxiong Ren, Hao Huang, Samuel Dolinar, Moshe Tur, and Alan Willner, "Mode and Propagation Effects of Optical Orbital Angular Momentum (OAM) Modes in a Ring Fiber," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper OM2D.2, Los Angeles, CA, Mar. 2012 (Optical Society of America, Washington, D.C., 2012).
  147. Zahra Bakhtiari, Robert Hellwarth, Alan Willner, "Optical Sub-QPSK Symbol Information Extraction from 16-QAM Signal using Optical Phase Erasure," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper JW2A.87, Los Angeles, CA, Mar. 2012 (Optical Society of America, Washington, D.C., 2012).

**REFEREED PROCEEDINGS: (CONTINUED)**

148. Changjian Ke, Bing Zhao, Minming Zhang, Deming Liu, Songlin Zhu, Jie Su, and Alan Willner, "Burst Mode Wavelength Upconversion using Gain-Clamped SOA for Applying WDM Technique to TDM-PON," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper JTh2A.60, Los Angeles, CA, Mar. 2012 (Optical Society of America, Washington, D.C., 2012).
149. Irfan Fazal, Jian Wang, Jeng-Yuan Yang, Nisar Ahmed, Bishara Shamee, Yan Yan, Alan Willner, Sam Dolinar, Kevin Birnbaum, Baris Erkmen, and John Choi, "Demonstration of 2-Tbit/s Data Link using Orthogonal Orbital-Angular-Momentum Modes and WDM," **Frontiers in Optics 2011** (OSA Annual Meeting), San Jose, CA, Oct. (Optical Society of America, Wash., D.C., 2011).
150. Jian Wang, Jeng-Yuan Yang, Irfan M. Fazal, Nisar Ahmed, Yan Yan, Bishara Shamee, Alan E. Willner, Kevin Birnbaum, John Choi, Baris Erkmen, Sam Dolinar and Moshe Tur, "25.6-bit/s/Hz Spectral Efficiency using 16-QAM Signals over Pol-Muxed Multiple Orbital-Angular-Momentum Modes," **IEEE Photonics Society Conference 2011 (Annual Meeting)**, paper WW2, Arlington, VA, Oct. (IEEE, Piscataway, NJ, 2011).
151. Yan Yan, Lin Zhang, Jian Wang, Jeng-Yuan Yang, Irfan M. Fazal, Nisar Ahmed, Bishara Shamee, Alan E. Willner, Kevin Birnbaum, John Choi, Baris Erkmen, and Sam Dolinar, "Generating Orbital Angular Momentum Modes in a Fiber with a Central Square and a Ring Profile," **IEEE Photonics Society Conference 2011 (Annual Meeting)**, paper TuF3, Arlington, VA, Oct. (IEEE, Piscataway, NJ, 2011).
152. Hao Huang, Yang Yue, Lin Zhang, Bishara Shamee, Christopher Chase, Forrest G. Sedgwick, Moshe Tur, Connie J. Chang-Hasnain, and Alan E. Willner, "Tapped Delay-line Matched Filtering using a High-Contrast Grating Hollow-Core Waveguide," **IEEE Photonics Society Conference 2011 (Annual Meeting)**, paper MS2, Arlington, VA, Oct. (IEEE, Piscataway, NJ, 2011).
153. Omer Yilmaz, Lior Yaron, Salman Khaleghi, Mohammad Chitgarha, Moshe Tur, and Alan Willner, "True Time Delays using Conversion/Dispersion with Flat Magnitude Response for Wideband Analog RF Signals," **European Conference on Optical Communications (ECOC)**, paper Mo.1.A.6, Geneva, Switzerland, Sept. 2011.
154. M.R. Chitgarha, S. Khaleghi, O.F. Yilmaz, A.E. Willner, "Bit Depth and Sample Rate Tunable Digital to Analog Converter using Conversion/Dispersion Based Delays," **European Conference on Optical Communications (ECOC)**, paper We.10.P1.48, Geneva, Switzerland, Sept. 2011.
155. Jian Wang, Jeng-Yuan Yang, Irfan M. Fazal, Nisar Ahmed, Yan Yan, Bishara Shamee, Alan E. Willner, Kevin Birnbaum, John Choi, Baris Erkmen, Sam Dolinar, and Moshe Tur, "Demonstration of 12.8-bit/s/Hz Spectral Efficiency using 16-QAM Signals over Multiple Orbital-Angular-Momentum Modes," **European Conference on Optical Communications (ECOC)**, paper We.10.P1.76, Geneva, Switzerland, Sept. 2011.
156. Asher Voskoboinik, Omer F. Yilmaz, Alan E. Willner, and Moshe Tur, "Sweep-Free Distributed Brillouin Sensing using Multiple Pump and Probe Tones," **European Conference on Optical Communications (ECOC)**, paper We.10.P1.01, Geneva, Switzerland, Sept. 2011.
157. Yan Yan, Jian Wang, Lin Zhang, Jeng-Yuan Yang, Irfan M. Fazal, Nisar Ahmed, Bishara Shamee, Alan E. Willner, Kevin Birnbaum, John Choi, Baris Erkmen, and Sam Dolinar, "New Approach for Generating and (De)Multiplexing OAM Modes in a Fiber Coupler Consisting of a Central Ring and Four External Cores," **European Conference on Optical Communications (ECOC)**, paper We.10.P1.12, Geneva, Switzerland, Sept. 2011.

**REFEREED PROCEEDINGS: (CONTINUED)**

158. Hao Huang, Xiaoxia Wu, Jian Wang, Jeng-Yuan Yang, Asher Voskoboynik, and Alan Willner, "All Optical Reconfigurable Radio Frequency Up/Down-Conversion using Optical Parametric Loop Mirror,"**European Conference on Optical Communications (ECOC)**, paper Mo.1.A.4, Geneva, Switzerland, Sept. 2011.
159. Yang Yue, Hao Huang, Lin Zhang, Jian Wang, Jeng-Yuan Yang, Omer Yilmaz, Jacob Levy, Michal Lipson, and Alan Willner, "Experimental Demonstration of UWB Monocycle Pulse Generation using Two-Photon Absorption in a Silicon Waveguide,"**European Conference on Optical Communications (ECOC)**, paper We.10.P1.24, Geneva, Switzerland, Sept. 2011.
160. Jian Wang, Jeng-Yuan Yang, Xiaoxia Wu, and Alan Willner, "Experimental Demonstration of Variable Optical Hexadecimal Coding/Decoding of 10-Gbaud/s 16-QAM using FWM in HNLFs,"**APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CWD4, Baltimore, MD, June 2011 (Optical Society of America, Wash., D.C., 2011).
161. Yan Yan, Lin Zhang, and Alan Willner, "On-Chip Mirrorless-Oscillation in Nonlinear Silicon Waveguides using Non-degenerate Four-Wave Mixing,"**APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CTuX7, Baltimore, MD, June 2011 (Optical Society of America, Wash., D.C., 2011).
162. Jeng-Yuan Yang, X. Steve Yao, Jian Wang, X. Chen, Lei Dong, Leon Yao, and Alan Willner, "Practical 4-Stage Optical PMD Compensator for Mitigating First- and Second-Order PMD on 40-Gbit/s RZ-D(Q)PSK,"**APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CThY2, Baltimore, MD, June 2011 (Optical Society of America, Wash., D.C., 2011).
163. Xiaoxia Wu, Jian Wang, Hao Huang, and Alan Willner, "Experimental Optical Multiplexing of Two 20-Gbit/s QPSK Data Channels from Different Wavelengths onto a Single 40-Gbit/s Star 16-QAM using Fiber Nonlinearities,"**APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CThH4, Baltimore, MD, June 2011 (Optical Society of America, Wash., D.C., 2011).
164. Yang Yue, Lin Zhang, Xue Wang, Hao Huang, Weijian Yang, James Ferrara, Vadim Karagodsky, Christopher Chase, Moshe Tur, Connie Chang-Hasnain, and Alan Willner, "Hollow-Core-Waveguides using Adiabatically Chirped High-Contrast-Gratings for a >10X Loss Reduction,"**APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CThAA4, Baltimore, MD, June 2011 (Optical Society of America, Wash., D.C., 2011).
165. Ali Fard, Jeng-Yuan Yang, Brandon Buckley, Jian Wang, Mohammad Chitgarha, Lin Zhang, Alan Willner, and Bahram Jalali, "100-Gb/s RZ-DQPSK Signal Monitoring using Time-stretch Enhanced Recording Oscilloscope,"**APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CFP1, Baltimore, MD, June 2011 (Optical Society of America, Wash., D.C., 2011).
166. Xue Wang, Yang Yue, Lin Zhang, Hao Huang, Yan Yan, Weijian Yang, James Ferrara, Vadim Karagodsky, Christopher Chase, Moshe Tur, Connie Chang-Hasnain, and Alan Willner, "Tunable Optical Coupling in a Low-Loss Hollow Core Waveguide using Adiabatically Chirped High-Contrast-Gratings and MEMS Actuators,"**APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper JTul74, Baltimore, MD, June 2011 (Optical Society of America, Wash., D.C., 2011).
167. Weijian Yang, James Ferrara, Karen Grutter, Anthony Yeh, Christopher Chase, Vadim Karagodsky, Devang Parekh, Yang Yue, Alan Willner, Ming Wu, and Connie Chang-Hasnain, "Novel Three-dimensional Hollow-core Waveguide using High-contrast Sub-wavelength Grating,"**APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper CThII4, Baltimore, MD, June 2011 (Optical Society of America, Wash., D.C., 2011).
168. Bishara Shamee, Lin Zhang, Yang Yue, Hao Huang, Xue Wang, Moshe Tur, Alan Willner, Chris Chase, Vadim Karagodsky, Forrest Sedgwick, and Connie J. Chang-Hasnain, "FIR Analog Filter Dependence of

**REFEREED PROCEEDINGS: (CONTINUED)**

- HCG-Based Hollow-Core Waveguides upon Varying of Waveguide Parameters,"**APS/IEEE/OSA Conference on Lasers and Electro-Optics (CLEO)**, paper JWA124, Baltimore, MD, June 2011 (Optical Society of America, Wash., D.C., 2011).
169. Asher Voskoboinik, Jian Wang, Alan E. Willner, and Moshe Tur, "Frequency Domain Simultaneous Tone Interrogation for Faster, Sweep-Free Brillouin Distributed Sensing," **21<sup>st</sup> International Conference on Optical Fiber Sensors**, Ottawa, Canada, May 2011.
  170. O. Yilmaz, S. Khaleghi, M. R. Chitgarha, S. Nuccio, and A. Willner, "Demonstration of 28-40-Gbaud, OOK/BPSK/QPSK Data-Transparent Optical Correlation with Control/Tunability over Time Delays, Phases and Number of Taps,"**IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OThN1, Los Angeles, CA, Mar. 2011 (Optical Society of America, Washington, D.C., 2011).
  171. Jian Wang, Hao Huang, Xue Wang, Jeng-Yuan Yang, Omer F. Yilmaz, Xiaoxia Wu, Scott R. Nuccio, and Alan Willner, "2.3-Tbit/s (23X100-Gbit/s) RZ-DQPSK Grooming Switch (Simultaneous Add/Drop, Data Exchange and Equalization) using Double-Pass LCoS and Bidirectional HNLf," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OTuE2, Los Angeles, CA, Mar. 2011 (Optical Society of America, Washington, D.C., 2011).
  172. S. R. Nuccio, Z. Bakhtiari, Omer F. Yilmaz, and Alan E. Willner, "Wavelength-Conversion of 160-Gbit/s PDM 16-QAM using a Single Periodically-Poled Lithium Niobate Waveguide," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OWG5, Los Angeles, CA, Mar. 2011 (Optical Society of America, Washington, D.C., 2011).
  173. H. Huang, Y. Yue, L. Zhang, X. Wang, C. Chase, D. Parekh, F. Sedgwick, M. Tur, M. C. Wu, C. J. Chang-Hasnain and A. E. Willner, "Analog Signal Performance of a Hollow-Core-Waveguide using High-Contrast-Gratings,"**IEEE/OSA Conference on Optical Fiber Communications (OFC)**, Los Angeles, CA, Mar. 2011 (Optical Society of America, Washington, D.C., 2011).
  174. Salman Khaleghi, Omer F. Yilmaz, Mohammad Reza Chitgarha, Irfan M. Fazal, and Alan E. Willner, "80-Gbit/s DQPSK Optical Tapped-Delay-Line Equalization using Finely Tunable Delays, Phases and Amplitudes,"**IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OThN4, Los Angeles, CA, Mar. 2011 (Optical Society of America, Washington, D.C., 2011).
  175. Jian Wang, Jeng-Yuan Yang, Xiaoxia Wu, Omer F. Yilmaz, Scott R. Nuccio, and Alan Willner, "40-Gbaud/s (120-Gbit/s) Octal and 10-Gbaud/s (40-Gbit/s) Hexadecimal Simultaneous Addition and Subtraction using 8PSK/16PSK and Highly Nonlinear Fiber," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OThC3, Los Angeles, CA, Mar. 2011 (Optical Society of America, Washington, D.C., 2011).
  176. Antonella Bogoni, Xiaoxia Wu, Scott R. Nuccio, Jian Wang, and Alan E. Willner, "640Gbit/s Reconfigurable OTDM Add-Drop Multiplexer,"**IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OMK4, Los Angeles, CA, Mar. 2011 (Optical Society of America, Washington, D.C., 2011).
  177. Mohammad Reza Chitgarha, Salman Khaleghi, Omar Yilmaz, Jeng-Yuan Yang and Alan Willner, "Demonstration of Baud-Rate-Variable and Channel-Spacing-Tunable Demultiplexing of 10-40-Gbaud OFDM Subcarriers using a Multi-Tap Optical DFT,"**IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OWG3, Los Angeles, CA, Mar. 2011 (Optical Society of America, Washington, D.C., 2011).
  178. S.R. Nuccio, R. Dinu, B. Shamee, D. Parekh, C. Chang-Hasnain, and A. E. Willner, "Modulation and Chirp Characterization of a 100-GHz EO Polymer Mach-Zehnder Modulator," **IEEE/OSA Conference on**

**REFEREED PROCEEDINGS: (CONTINUED)**

- Optical Fiber Communications** (OFC), paper JThA030, Los Angeles, CA, Mar. 2011 (Optical Society of America, Washington, D.C., 2011).
179. Antonella Bogoni, Xiaoxia Wu, Scott R. Nuccio, Nisar Ahmed, and Alan E. Willner, "160 Gb/s All-Optical Binary-to-Quaternary Amplitude Shift Keying Format Conversion," **IEEE/OSA Conference on Optical Fiber Communications** (OFC), paper OThN7, Los Angeles, CA, Mar. 2011 (Optical Society of America, Washington, D.C., 2011).
  180. Xiaoxia Wu, Antonella Bogoni, Jian Wang, Hao Huang, Scott Nuccio, Omer Yilmaz, and Alan Willner, "40-to-640-Gbit/s Multiplexing and Subsequent 640-to-10-Gbit/s Demultiplexing using Cascaded Nonlinear Optical Loop Mirrors," **IEEE/OSA Conference on Optical Fiber Communications** (OFC), paper OWG7, Los Angeles, CA, Mar. 2011 (Optical Society of America, Washington, D.C., 2011).
  181. J.-Y. Yang, M. R. Chitgarha, L. Zhang, J. Wang, and A. E. Willner, "Optical Monitoring of Either Time Misalignment or PMD Accumulation in an 80-Gb/s Pol-MUX RZ-DPSK Signal using Degree-of-Polarization Measurements," **IEEE Photonics Society Annual Meeting 2010**, paper ME2, Denver, Nov. (IEEE, Piscataway, NJ, 2010).
  182. J. Wang, H. Huang, X. Wang, J.-Y. Yang, and A. E. Willner, "Optical Phase-Transparent Data Grooming Exchange of Multi-Channel 100-Gbit/s RZ-DQPSK Signals," **IEEE Photonics Society Annual Meeting 2010**, paper WN2, Denver, Nov. (IEEE, Piscataway, NJ, 2010).
  183. Y. Yue, L. Zhang, F. G. Sedgwick, B. Shamee, W. Yang, J. Ferrara, C. Chase, R. G. Beausoleil, C. J. Chang-Hasnain, and A. E. Willner, "Chromatic Dispersion Variation and Its Effect on High-Speed Data Signals due to Structural Parameter Changes in a High-Contrast-Grating Waveguide," **IEEE Photonics Society Annual Meeting 2010**, paper ThB2, Denver, Nov. (IEEE, Piscataway, NJ, 2010).
  184. A. Bogoni, X. Wu, S. R. Nuccio, and A. E. Willner, "All-Optical Regeneration in a PPLN Waveguide," **IEEE Photonics Society Annual Meeting 2010**, paper TuM3, Denver, Nov. (IEEE, Piscataway, NJ, 2010).
  185. O.F. Yilmaz, S. Khaleghi, N. Ahmed, S. Nuccio, I. Fazal, X. Wu, and A.E. Willner, "Reconfigurable and Finely Tunable Optical Tapped Delay Line to Achieve 40 Gb/s Equalization and Correlation using Conversion/Dispersion Based Delays," **European Conference on Optical Communications (ECOC)**, paper Mo.2.A.2, Torino, Italy, Sept. 2010.
  186. Antonella Bogoni, Xiaoxia Wu, Zahra Bakhtiari, Scott Nuccio, and Alan E. Willner, "640 Gb/s All-Optical Logic Functions in a PPLN Waveguide," **European Conference on Optical Communications (ECOC)**, paper Mo.1.A.5, Torino, Italy, Sept. 2010.
  187. Jian Wang, Scott R. Nuccio, Hao Huang, Xue Wang, Omer F. Yilmaz, Xiaoxia Wu, Jeng-Yuan Yang, Yang Yue, and Alan E. Willner, "Demonstration of 100-Gbit/s DQPSK Data Exchange between Two Different Wavelength Channels using Parametric Depletion in a Highly Nonlinear Fiber," **European Conference on Optical Communications (ECOC)**, paper Mo.1.A.4, Torino, Italy, Sept. 2010.
  188. Xiaoxia Wu, Antonella Bogoni, Hao Huang, Scott R. Nuccio, Jian Wang, Omer F. Yilmaz, and Alan E. Willner, "Reconfigurable 40-Gbit/s Tributary Selection from a 640-Gbit/s Signal using NOLM-Based Cascaded Demultiplexing," **European Conference on Optical Communications (ECOC)**, paper P3.01, Torino, Italy, Sept. 2010.
  189. O.F. Yilmaz, J. Wang, X. Wang, S.R. Nuccio, X. Wu, and A.E. Willner, "Multicasting of 50 Gb/s RZ-DPSK Signals using Self-Seeded FWM with Phase Modulated Pumps for SBS Suppression," **European Conference on Optical Communications (ECOC)**, paper P3.23, Torino, Italy, Sept. 2010.

**REFEREED PROCEEDINGS: (CONTINUED)**

190. Yang Yue, Lin Zhang, Raymond Beusoleil, and Alan Willner, "Ultrabroadband Low Dispersion Silicon-on-Nitride Waveguide in Mid-Infrared Region," **OSA Topical Meeting on Integrated Photonics Research, Silicon and Nano Photonics (IPR)**, paper IWH4, Monterey, CA, July (Optical Society of America, Wash., D.C., 2010).
191. J. Wang, S. Nuccio, J. Yang, H. Huang, X. Wu, A. Bogoni, and A. Willner, "50-Gbaud/s Optical Addition and Dual-Directional Subtraction of Quaternary Base Numbers using Nonlinearities and 100-Gbit/s (D)QPSK Signals," **OSA Topical Meeting on Photonics in Switching, post-deadline paper PDPWG2**, Monterey, CA, July (Optical Society of America, 2010).
192. Antonella Bogoni, Xiaoxia Wu, Zahra Bakhtiari, Scott Nuccio, Robert W. Hellwarth, and Alan E. Willner, "640 Gb/s All-Optical Add/Drop Multiplexing Based on Pump Depletion in a PPLN Waveguide," **OSA Topical Meeting on Photonics in Switching**, paper PTuB6, Monterey, CA, July (Optical Society of America, Wash., D.C., 2010).
193. Jian Wang, Omer Yilmaz, Scott Nuccio, Xiaoxia Wu, Zahra Bakhtiari, Yinying Xiao Li, Jeng-Yuan Yang, Hao Huang, Yang Yue, Irfan Fazal, Robert Hellwarth, Alan Willner, "Data Traffic Grooming/Exchange of a Single 10-Gbit/s TDM Tributary Channel between Two Pol-Muxed 80-Gbit/s DPSK Channels," **Conference on Lasers and Electro-Optics (CLEO)**, paper CFJ5, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
194. Lin Zhang, Yue Yang, Alan E. Willner, and Raymond G. Beusoleil, "Low Dispersion Silicon Slot Waveguides for Frequency Comb Generation with Equally Spaced Spectral Lines," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThAA7, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
195. Yang Yue, Lin Zhang, Jian Wang, Yinying Xiao-Li, Raymond Beusoleil, and Alan Willner, ">25Å~ Reduction in the Effective Nonlinear Coefficient over a 100-nm Wavelength Range using Vertically-Slotted Silicon Waveguide," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThR6, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
196. Lin Zhang, Jian Wang, Muping Song, Yang Yue, Yinying Xiao Li, Raymond, G. Beusoleil, and Alan E. Willner, "Nonlinear Distortions Induced by Non-Idealities of Integrated Silicon Waveguides in Analog Optical Links," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThN4, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
197. Yang Yue, Yinying Xiao-Li, Raymond G. Beusoleil, and Alan E. Willner, "Low Chromatic Dispersion of  $\pm 16$  ps/(nm\*km) over a 550-nm Wavelength Range using a Strip/Slot Hybrid Silicon Waveguide," **Conference on Lasers and Electro-Optics (CLEO)**, paper JThE42, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
198. Omer F. Yilmaz, Scott Nuccio, Jian Wang, Xiaoxia Wu, and Alan E. Willner, "Multicasting of 40-Gbit/s NRZ-OOK Data into 24 RZ Copies using a Single Pump and Supercontinuum Generation," **Conference on Lasers and Electro-Optics (CLEO)**, paper CWI3, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
199. Lin Zhang, Yang Yue, Yinying Xiao-Li, Raymond G. Beusoleil, and Alan E. Willner, "Chromatic Dispersion in Tightly Curved Silicon Waveguides and Ring Resonators," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThB5, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
200. Jeng-Yuan Yang, Mohammad R. Chitgarha, Lin Zhang, and Alan E. Willner, "Chromatic Dispersion Monitoring of 40-Gb/s OOK Data using Optical VSB Filtering at High Frequency," **Conference on Lasers**



**REFEREED PROCEEDINGS: (CONTINUED)**

- and **Electro-Optics (CLEO)**, paper JThE52, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
201. Xiaoxia Wu, Hao Huang, Jian Wang, Xue Wang, Omer F. Yilmaz, Scott R. Nuccio, and Alan Willner, "Simultaneous Two-Channel Wavelength Conversion of 40-Gbit/s DPSK WDM Signals without Additional Pumps," **Conference on Lasers and Electro-Optics (CLEO)**, paper JThE57, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
  202. Mohammadreza Chitgarha, Jeng-Yuan Yang, and Alan Willner, "Simultaneously Transmitter Chirp and Chromatic Dispersion Monitoring of OOK Data using First and Second Optical Harmonics of the Data Clock Tones," **Conference on Lasers and Electro-Optics (CLEO)**, paper JThE53, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
  203. Jeng-Yuan Yang, Mohammad R. Chitgarha, Lin Zhang, and Alan E. Willner, "PMD and OSNR Insensitive 40-Gb/s OOK/DPSK Chromatic Dispersion Monitoring using a Delay-Line Interferometer and a <10-GHz Photodetector," **Conference on Lasers and Electro-Optics (CLEO)**, paper JThE50, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
  204. Yinying Xiao-Li, Lin Zhang, Yang Yue, Jian Wang, Raymond G. Beausoleil, and Alan E. Willner, "Dispersion Tailoring in Dual Slot Waveguide," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThR5, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
  205. Bishara Shamee, Louis Christen, Scott Nuccio, Jeng-Yuan Yang, and Alan Willner, "Gaussian Minimum Shift Keying for Spectrally Efficient and Dispersion Tolerant Optical Communications," **Conference on Lasers and Electro-Optics (CLEO)**, paper JThE54, San Jose, CA, May 2010 (Optical Society of America, Wash., D.C., 2010).
  206. Jian Wang, Zahra Bakhtiari, Yinying Xiao-Li, Omer Yilmaz, Scott Nuccio, Xiaoxia Wu, Hao Huang, Jeng-Yuan Yang, Yang Yue, Alan E. Willner, "Experimental Demonstration of Data Traffic Grooming of a Single 10-Gbit/s TDM Tributary Channel between Two 160-Gbit/s WDM Channels," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OWF1, San Diego, CA, Mar. 2010 (Optical Society of America, Washington, D.C., 2010).
  207. S. R. Nuccio, O. F. Yilmaz, X. Wang, A. E. Willner, "Experimental Demonstration of All-Optical Polarization Multiplexing and Polarization Demultiplexing between Two 50-Gbit/s Channels and a Single 100-Gbit/s Channel," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OThV5, San Diego, CA, Mar. 2010 (Optical Society of America, Washington, D.C., 2010).
  208. Jian Wang, Zahra Bakhtiari, Yinying Xiao-Li, Scott Nuccio, Omer Yilmaz, Xiaoxia Wu, Jeng-Yuan Yang, Yang Yue, Irfan Fazal, Alan E. Willner, "Phase-Transparent Optical Data Exchange of 40-Gbit/s DPSK Signals using Four-Wave-Mixing in a Highly Nonlinear Fiber," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OMT6, San Diego, CA, Mar. 2010 (Optical Society of America, Washington, D.C., 2010).
  209. Xiaoxia Wu, Antonella Bogoni, Omer F. Yilmaz, Scott R. Nuccio, Jian Wang, and Alan E. Willner, "8-Fold 40-to-320-Gbit/s Phase-Coherent WDM-to-TDM Multiplexing and 320-to-40-Gbit/s Demultiplexing using Highly Nonlinear Fibers," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OThV4, San Diego, CA, Mar. 2010 (Optical Society of America, Washington, D.C., 2010).
  210. Omer F. Yilmaz, Scott R. Nuccio, Xue Wang, Jian Wang, Irfan Fazal, Jeng Yuan Yang, Xiaoxia Wu, Alan E. Willner, "Experimental Demonstration of 8-Fold Multicasting of a 100 Gb/s Polarization-Multiplexed OOK Signal using Highly Nonlinear Fiber," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OWP8, San Diego, CA, Mar. 2010 (Optical Society of America, Washington, D.C., 2010).

**REFEREED PROCEEDINGS: (CONTINUED)**

211. Yang Yue, Lin Zhang, Jian Wang, Yinying Xiao-Li, Bishara Shamee, Vadim Karagodsky, Forrest G. Sedgwick, Werner Hofmann, Raymond G. Beausoleil, Connie J. Chang-Hasnain, and Alan E. Willner, "A "Linear" High-Contrast Gratings Hollow-Core Waveguide and its System Level Performance," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OTuI5, San Diego, CA, Mar. 2010 (Optical Society of America, Washington, D.C., 2010).
212. Xiaoxia Wu, Jeffrey A. Jargon, Chih-Ming Wang, and Alan E. Willner, "Experimental Comparison of Performance Monitoring using Neural Networks Trained with Parameters Derived from Delay-Tap Plots and Eye Diagrams," **IEEE/OSA Conference on Optical Fiber Communications (OFC) and National Fiber Optics Engineers Conference (NFOEC)**, paper JThA17, San Diego, CA, Mar. 2010 (Optical Society of America, Washington, D.C., 2010).
213. Caroline P. Lai, Michael S. Wang, Ajay S. Garg, Keren Bergman, Jeng-Yuan Yang, Mohammad R. Chitgarha, and Alan E. Willner, "Demonstration of QoS-Aware Packet Protection via Cross-Layer OSNR Signaling," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OTuM2, San Diego, CA, Mar. 2010 (Optical Society of America, Washington, D.C., 2010).
214. Paolo Ghelfi, Lingmei Ma, Xiaoxia Wu, Alan E. Willner, and Antonella Bogoni, "All-Optical Parallelization for High Sampling Rate Photonic ADC in Fully Digital Radar Systems," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OThU6, San Diego, CA, Mar. 2010 (Optical Society of America, Washington, D.C., 2010).
215. Wei-Ren Peng, Kai-Ming Feng, A.E. Willner, and Sien Chi, "Sensitivity Bound for Optically-Preamplified Direct-Detected OFDM Systems using Spectrally Matched Filters," **IEEE Lasers and Electro-Optics Society Annual Meeting 2009**, Technical Digest, pp. 719-720, Turkey, Nov. (IEEE, Piscataway, NJ, 2009).
216. Lin Zhang, Yang Yue, Yinying Xiao-Li, Jian Wang, Raymond G. Beausoleil, and Alan E. Willner, "Achieving Uniform Chromatic Dispersion over a Wide Wavelength Range in Highly Nonlinear Slot Waveguides," **Frontiers in Optics 2009** (OSA Annual Meeting), paper FThE2, San Jose, CA, Oct. (Optical Society of America, Wash., D.C., 2009).
217. Avi Zadok, Xiaoxia Wu, Jacob Sendowski, Amnon Yariv, and Alan E. Willner, "Flexible All-Fiber Generation of Ultra-Wideband Signals via Pulse Compression and Differential Detection," **Frontiers in Optics 2009** (OSA Annual Meeting), paper FWK3, San Jose, CA, Oct. (Optical Society of America, Wash., D.C., 2009).
218. Yinying Xiao-Li, Lin Zhang, Yang Yue, Raymond G. Beausoleil, and Alan E. Willner, "Slot Waveguide Incorporating a Sub-core," **Frontiers in Optics 2009** (OSA Annual Meeting), paper FWZ5, San Jose, CA, Oct. (Optical Society of America, Wash., D.C., 2009).
219. Alan E. Willner, Jeng-Yuan Yang, and Xiaoxia Wu, "Optical Performance Monitoring to Enable Robust and Reconfigurable Optical High-Capacity Networks," **IEEE Military Communications Conference (MILCOM)**, Technical Proceedings, Boston, Oct. 2009 (IEEE, Piscataway, NJ, 2009).
220. Xiaoxia Wu, Jian Wang, Omer F. Yilmaz, Scott R. Nuccio, Antonella Bogoni, and Alan E. Willner, "Bit-Rate-Variable and Order-Switchable Optical Multiplexing of 160-Gbit/s PRBS Data using Tunable Optical Delays," **European Conference on Optical Communications (ECOC)**, paper 4.3.5, Vienna, Austria, Sept. 2009.
221. Xiaoxia Wu, Jeffrey A. Jargon, Zhensheng Jia, Loukas Paraschis, Ronald A. Skoog, and Alan E. Willner, "Optical Performance Monitoring of PSK Data Channels using Artificial Neural Networks Trained with

**REFEREED PROCEEDINGS: (CONTINUED)**

- Parameters Derived from Delay-Tap Asynchronous Diagrams via Balanced Detection," **European Conference on Optical Communications (ECOC)**, paper P3.04, Vienna, Austria, Sept. 2009.
222. Earl Parsons, Hacene Chaouch, Franko Küppers, Tuomo von Lerber, Marco Mattila, Werner Weiershausen, Ari Tervonen, Jeng-Yuan Yang, and Alan Willner, "Photonic Balancing in DPSK Detection using Pulse Collision in a Semiconductor Optical Amplifier," **European Conference on Optical Communications (ECOC)**, paper 2.2.5, Vienna, Austria, Sept. 2009.
223. Vahid Arbab, Xiaoxia Wu, Alan E. Willner, and Charles Weber, "Optical Performance Monitoring of Data Degradation by Evaluating the Deformation of an Asynchronously Generated I/Q Data Constellation", **European Conference on Optical Communications (ECOC)**, P3.23, Vienna, Austria, Sept. 2009.
224. Xiaoxia Wu, Scott Nuccio, Omer F. Yilmaz, Jian Wang, Antonella Bogoni, and Alan E. Willner, "Controllable Optical Demultiplexing using Continuously Tunable Optical Parametric Delay at 160-Gbit/s with with  $<0.1$ -ps Resolution," **IEEE Photonics in Switching Meeting**, paper FrI2-2, Pisa, Italy, Sept. 2009 (IEEE, Piscataway, NJ, 2009).
225. J. Wang, S. R. Nuccio, X. X. Wu, O. F. Yilmaz, L. Zhang, I. Fazal, J. Y. Yang, Y. Yue, and A. E. Willner, "40-Gbit/s Optical Data Exchange Between WDM Channels using Second-Order Nonlinearities in PPLN Waveguides," **OSA Topical Meeting on Nonlinear Optics (NLO)**, Post-Deadline paper PDPA1, Honolulu, Hawaii, July 2009 (Optical Society of America, Wash., D.C., 2009).
226. O.F. Yilmaz, S.R. Nuccio, Z. Bakhtiari, X. Wu, J. Wang, L. Zhang, and A.E. Willner, "Wavelength Conversion and 9-fold Multicasting of a 21.4 Gbit/s DPSK Data Channel using Supercontinuum Generation," **OSA Topical Meeting on Nonlinear Optics (NLO)**, Post-Deadline paper PDPA3, Honolulu, Hawaii, July 2009 (Optical Society of America, Wash., D.C., 2009).
227. Lin Zhang, Yang Yue, Yinying Xiao-Li, Ray G. Beausoleil, and Alan E. Willner, "Slot Waveguides with a Flattened Near-Zero Dispersion and a Small Effective Mode Area," **OSA Topical Meeting on Integrated Photonics and Nanophotonics Research and Applications (IPNRA)**, paper IWD6, Honolulu, Hawaii, July 2009 (Optical Society of America, Wash., D.C., 2009).
228. Xiaoxia Wu, Antonella Bogoni, Omer F. Yilmaz, Scott R. Nuccio, and Alan E. Willner, "Optically Concatenated 160-to-320-Gbit/s Multiplexing using Supercontinuum Generation in Highly Nonlinear Fiber," **Conference on Lasers and Electro-Optics (CLEO)**, paper CMZ7, Baltimore, MD, May 2009 (Optical Society of America, Wash., D.C., 2009).
229. Omer F. Yilmaz, Scott R. Nuccio, Xiaoxia Wu, and Alan E. Willner, "Tunable N-Fold Multicasting and Pulswidth of 40 Gb/s Channels by Variable Periodic Slicing of a Supercontinuum," **Conference on Lasers and Electro-Optics (CLEO)**, paper CTuJ5, Baltimore, MD, May 2009 (Optical Society of America, Wash., D.C., 2009).
230. Xiaoxia Wu, Antonella Bogoni, Scott R. Nuccio, Omer F. Yilmaz, and Alan E. Willner, "320-Gbit/s Optical Time Multiplexing of Two 160-Gbit/s channels using Supercontinuum Generation to Achieve High-Speed WDM-to-TDM," **Conference on Lasers and Electro-Optics (CLEO)**, paper, Baltimore, MD, May 2009 (Optical Society of America, Wash., D.C., 2009).
231. Lin Zhang, Yang Yue, Ray G. Beausoleil, and Alan E. Willner, "Slot Waveguides for Achieving 147-nm-wide and  $-31.3$ ps/(m-nm) Dispersion and Near-Zero Flattened Dispersion," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThU2, Baltimore, MD, May 2009 (Optical Society of America, Wash., D.C., 2009).
232. S. R. Nuccio, O. F. Yilmaz, X. Wu, and A. E. Willner, "Fine ( $<0.5$  ps) and Course Tuning ( $>15$  ps) of Optical Delays using Acousto-optic Mixing with a 1-pm Tunable Laser," **Conference on Lasers and**

**REFEREED PROCEEDINGS: (CONTINUED)**

- Electro-Optics (CLEO)**, paper CMJJ2, Baltimore, MD, May 2009 (Optical Society of America, Wash., D.C., 2009).
233. Yang Yue, Lin Zhang, Raymond Beausoleil, and Alan Willner, "Very Short Polarization Splitting/Combining using Two Horizontally-Slotted Waveguides," **Conference on Lasers and Electro-Optics (CLEO)**, paper CTuC4, Baltimore, MD, May 2009 (Optical Society of America, Wash., D.C., 2009).
234. B. Zhang, X. Zhao, D. Parekh, Y. Yue, W. Hofmann, M. Amann, C. Chang-Hasnain and A. Willner, "Multifunctional and Reconfigurable 10-GHz Operation of an Optical Injection-Locked VCSEL," **Conference on Lasers and Electro-Optics (CLEO)**, paper CTuJ7, Baltimore, MD, May 2009 (Optical Society of America, Wash., D.C., 2009).
235. Mirco Scaffardi, Gianluca Berrettini, Xiaoxia Wu, Irfan Fazal, Luca Potì, Alan E. Willner, and Antonella Bogoni, "Modulation Squeezing of a 10 Gb/s RZ and NRZ Signal with a Single SOA," **Conference on Lasers and Electro-Optics (CLEO)**, paper JTuD78, Baltimore, MD, May 2009 (Optical Society of America, Wash., D.C., 2009).
236. Omer F. Yilmaz, Scott R. Nuccio, Xiaoxia Wu, and Alan E. Willner, "10-Packet-Depth, 40 Gb/s Optical Buffer with a <0.5 ns Reconfiguration Time using 116 ns, Continuously Tunable Conversion/Dispersion Delays," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, Post-Deadline paper PDPC7, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
237. S. R. Nuccio, O. F. Yilmaz, S. Khaleghi, L. Christen, I. Fazal, and A. E. Willner, "503-ns, Tunable Optical Delay of 40 Gb/s RZ-OOK and RZ-DPSK using Additional Conversion for Increased Delay and Reduced Residual Dispersion," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OThM7, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
238. O. F. Yilmaz, S. R. Nuccio, S. Khaleghi, J.-Y. Yang, L. Christen, and A. E. Willner, "Optical Multiplexing of Two 21.5 Gb/s DPSK Signals into a Single 43 Gb/s DQPSK Channel with Simultaneous 7-Fold Multicasting in a Single PPLN Waveguide," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OThM4, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
239. Lin Zhang, Yang Yue, Yinying Xiao Li, Raymond G. Beausoleil, and Alan E. Willner, "On-Chip, High-Dispersion-Value and Coupled Strip/Slotted Waveguide Structure for Efficient Dispersion Compensation," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OThB2, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
240. Antonella Bogoni, Xiaoxia Wu, Irfan Fazal, and Alan E. Willner, "320 Gb/s Nonlinear Operations Based on PPLN Waveguide for Multiplexing Add/Drop and Wavelength Conversion," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OThS5, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
241. J.-Y. Yang, L. Zhang, Y. Yue, L. C. Christen, B. Zhang, J. Jackel, A. Anjali, L. Paraschis, and A.E. Willner, "CD-Insensitive PMD Monitoring of an 80-Gb/s Polarization-Multiplexed RZ-DPSK Channel using a Polarizer and a Low-Speed Detector," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OTHJ2, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
242. Xiaoxia Wu, Antonella Bogoni, Omer F. Yilmaz, Scott R. Nuccio, and Alan E. Willner, "Optically Concatenated 4-Fold 40-Gbit/s Multicasting, 4-Fold 40-to-160-Gbit/s Multiplexing, and 160-to-40-Gbit/s Demultiplexing using Highly Nonlinear Fibers," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper JThA53, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).

**REFEREED PROCEEDINGS: (CONTINUED)**

243. Yang Yue, Lin Zhang, Muping Song, Raymond G. Beausoleil, and Alan E. Willner, "On-Chip 90-degree Polarization Rotator using Wave Coupling through an Intermediate, Multimode, Uniform Waveguide," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OTuL6, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
244. Lin Zhang, Muping Song, Raymond G. Beausoleil, and Alan E. Willner, "A High-Speed Silicon Modulator Based on an Embedded-Ring-Resonator Structure," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper JWA25, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
245. Vahid R. Arbab, Xiaoxia Wu, Louis C. Christen, Jeng-Yuan Yang, Tasshi Dennis, Paul Williams, and Alan E. Willner, "Analysis of Fiber Dispersion Effects on Phase Modulated Signals using Constellation Diagram," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper JThA45, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
246. M. Song, L. Zhang, Y. Yue, J.-Y. Yang, R. G. Beausoleil, and A.E. Willner, "A 2X2 Optical Cross-Connect Switch Based on Dual-Drive Silicon Microring-Resonators with Reduced Timing Jitter and Driving Voltage," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OWV5, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
247. Devang Parekh, Bo Zhang, Xiaoxue Zhao, Yang Yue, Werner Hofmann, Markus C. Amann, Alan E. Willner, and Connie J. Chang-Hasnain, "90-km Single-Mode Fiber Transmission of 10-Gb/s Multimode VCSELs under Optical Injection Locking," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OTuK7, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
248. Jeffrey A. Jargon, Xiaoxia Wu, and Alan E. Willner, "Optical Performance Monitoring by Use of Artificial Neural Networks Trained with Parameters Derived from Delay-Tap Asynchronous Sampling," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OThH1, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
249. Antonella Bogoni, Xiaoxia Wu, Irfan Fazal, and Alan E. Willner, "All-Optical Time Domain 160 Gb/s ADD/ DROP Based on Pump Depletion and Nonlinearities in a Single PPLN Waveguide," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper JThA59, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
250. Bo Zhang, X. Steve Yao, Xiaojun Chen, and Alan E. Willner, "Polarization-based Fast-Swept Optical Spectrum Analyzer," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper OMP2, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
251. Jeffrey A. Jargon, Xiaoxia Wu, Paul D. Hale, Klaus M. Engenhardt, and Alan E. Willner, "A Transmitter for Calibrating the Extinction Ratio of Optical Receivers," **IEEE/OSA Conference on Optical Fiber Communications (OFC)**, paper JWA24, San Diego, CA, Mar. 2009 (Optical Society of America, Washington, D.C., 2009).
252. X. Steve Yao, Bo Zhang, Xiaojun Chen, and Alan E. Willner, "Polarimeter-Based Optical Spectrum Analyzer," **OSA Frontiers in Optics (FiO) Annual Meeting, Post-Deadline Paper PDP-A4**, Rochester, NY, Oct. 2008 (Optical Society of America, Washington, D.C., 2008).
253. J.-Y. Yang, L. Zhang, Y. Yue, V. R. Arbab, A. Agarwal, L. Paraschis, and A. E. Willner, "CD/PMD-Insensitive Optical Performance Monitoring of OSNR Degradation in an 80-Gb/s Pol-Muxed RZ-DPSK System," **IEEE Lasers and Electro-Optics Society Annual Meeting 2008**, paper WP3, Newport Beach, CA, Nov. (IEEE, Piscataway, NJ, 2008).

**REFEREED PROCEEDINGS: (CONTINUED)**

254. Xiaoxia Wu, Jeffrey Jargon, Louis Christen, and Alan Willner, "Training of Neural Networks to Perform Optical Performance Monitoring of a Combination of Accumulated Signal Nonlinearity, CD, PMD, and OSNR," **IEEE Lasers and Electro-Optics Society Annual Meeting 2008**, paper WP4, Newport Beach, CA, Nov. (IEEE, Piscataway, NJ, 2008).
255. Louis Christen, Omer Yilmaz, Scott Nuccio, Xiaoxia Wu, Alan E. Willner, "Optical Pseudo-Random Bit Sequence Generator using a Dual-Drive Mach-Zehnder Modulator as a Linear Feedback Shift Register," **IEEE Lasers and Electro-Optics Society Annual Meeting 2008**, paper TuP3, Newport Beach, CA, Nov. (IEEE, Piscataway, NJ, 2008).
256. M. Song, L. Zhang, R.G. Beausoleil and A.E. Willner, "Generation of High-Modulation-Index RF Analog Signals using a Silicon Microring Resonator," **IEEE Lasers and Electro-Optics Society Annual Meeting 2008**, paper MB2, Newport Beach, CA, Nov. (IEEE, Piscataway, NJ, 2008).
257. Wei-Ren Peng, Kai-Ming Feng, and Alan E. Willner, "Direct-Detected Polarization Division Multiplexed OFDM Systems with Self-Polarization Diversity," **IEEE Lasers and Electro-Optics Society Annual Meeting 2008**, paper MH3, Newport Beach, CA, Nov. (IEEE, Piscataway, NJ, 2008).
258. M. Song, L. Zhang, L. Zou, J.-Y. Yang, R.G. Beausoleil and A.E. Willner, "A Three-Ring-Resonator Electro-Optical Switch with Reduced Jitter and Enhanced Speed and Extinction Ratio," **IEEE Lasers and Electro-Optics Society Annual Meeting 2008**, paper WF2, Newport Beach, CA, Nov. (IEEE, Piscataway, NJ, 2008).
259. Wei-Ren Peng, Kai-Ming Feng, and Alan E. Willner, "The Limit of Transmission Distance for an Inter-Symbol-Interference-Free Optical OFDM System," **IEEE Lasers and Electro-Optics Society Annual Meeting 2008**, paper MH2, Newport Beach, CA, Nov. (IEEE, Piscataway, NJ, 2008).
260. Xiaoxia Wu, Jeffrey Jargon, Louis Christen, Alan Willner, and Loukas Paraschis, "Monitoring I/Q Data and Pulse Carving Misalignments in RZ-DQPSK Transmitters using a Neural Network Approach," **IEEE Lasers and Electro-Optics Society Annual Meeting 2008**, paper WP2, Newport Beach, CA, Nov. (IEEE, Piscataway, NJ, 2008).
261. A. Bogoni, X. Wu, I. Fazal, and A.E. Willner, "All-Optical 160Gb/s Half-Addition, Half-Subtraction and OR Function Exploiting Pump Depletion and Nonlinearities in a PPLN Waveguide," **European Conference on Optical Communications (ECOC), PostDeadline**, paper Th.3.E.7, Brussels, Sept. 2008.
262. Wei-Ren Peng, Bo Zhang, XiaoXia Wu, Kai-Ming Feng, Alan E. Willner and Sien Chi, "Experimental Demonstration of 1600 km SSMF Transmission of a Generalized Direct Detection Optical Virtual SSB-OFDM System," **European Conference on Optical Communications (ECOC)**, paper Mo.3.E.6, Brussels, Sept. 2008.
263. Xiaoxia Wu, Jeffrey Jargon, Alan E. Willner, "Off-Line Monitoring of OSNR/CD/PMD Degradation Effects using Neural-Network-Based Training Sequences," **European Conference on Optical Communications (ECOC)**, paper We.3.D.6, Brussels, Sept. 2008.
264. Wei-Ren Peng, Bo Zhang, XiaoXia Wu, Kai-Ming Feng, Alan E. Willner and Sien Chi, "Experimental Demonstration of Compensating the I/Q Imbalance and Bias Deviation of the Mach-Zehnder Modulator for an RF Tone Assisted Optical OFDM System," **European Conference on Optical Communications (ECOC)**, paper Mo.4.D.3, Brussels, Sept. 2008.
265. Lin Zhang, Muping Song, Jeng-Yuan Yang, Wei-Ren Peng, Scott Nuccio, Raymond G. Beausoleil and Alan E. Willner, "Generating Spectrally Efficient Duobinary Data Format from Silicon Ring Resonator Modulators" **European Conference on Optical Communications (ECOC)**, paper Tu.3.C.4, Brussels, Sept. 2008.

**REFEREED PROCEEDINGS: (CONTINUED)**

266. S.R. Nuccio, L. Christen, X. Wu, S. Khaleghi, O. Yilmaz, A.E. Willner, and Y. Koike, "Transmission of 40 Gb/s DPSK and OOK at 1.55 microns Through 100 m of Plastic Optical Fiber," **European Conference on Optical Communications (ECOC)**, paper We.2.A.4, Brussels, Sept. 2008.
267. Xiaoxia Wu, Wei-Ren Peng, Vahid R. Arbab, Alan E. Willner, "Tunable Optical Wavelength Conversion of a 10 Gb/s OFDM Data Signal using a Periodically-Poled Lithium Niobate Waveguide," **European Conference on Optical Communications (ECOC)**, paper P.3.1, Brussels, Sept. 2008.
268. Vahid R. Arbab, Wei-Ren Peng, Xiaoxia Wu, Jeng-Yuan Yang, Salman Khaleghi, Yang Yue, Alan E. Willner, "Experimental Demonstration of Multicarrier-CDMA for Passive Optical Networks," **European Conference on Optical Communications (ECOC)**, paper We.1.F.1, Brussels, Sept. 2008.
269. Reza Salem, Scott Nuccio, Vahid R. Arbab, Xiaoxia Wu, Mark A. Foster, David F. Geraghty, Alan E. Willner, and Alexander L. Gaeta, "Experimental Demonstration of a High-Speed Optical Correlator for Phase-Modulated Packets," **European Conference on Optical Communications (ECOC)**, paper P.3.15, Brussels, Sept. 2008.
270. Muping Song, Lin Zhang, Jeng-Yuan Yang, Scott Nuccio, Raymond G. Beausoleil, and Alan E. Willner, "Performance Prospects of Compact Silicon Microring-Based Electro-Optic Modulator for Analog Optical Links," **European Conference on Optical Communications (ECOC)**, paper P.2.5, Brussels, Sept. 2008.
271. Lin Zhang, Muping Song, Jeng-Yuan Yang, Scott Nuccio, Raymond G. Beausoleil, and Alan E. Willner, "A Compact Chromatic Dispersion Compensator using Unequal and Mutually-Coupled Microring Resonators," **OSA Summer Topical Meeting on Integrated Photonics and Nanophotonics Research and Applications (IPNRA)**, paper IWA3, Boston, MA, July 2008 (OSA, D.C., 2008).
272. L. Zhang, J.-Y. Yang, M. Song, Y. Li, R.G. Beausoleil, A. E. Willner, "Advanced Data Formats in Chip-Scale Optical Interconnects using Microring Resonators," **19th Annual IEEE Workshop on Interconnections within High Speed Digital Systems**, Santa Fe, NM, May 2008 (IEEE, Piscataway, 2008).
273. Lin Zhang, Yunchu Li, Muping Song, Teng Wu, Raymond G. Beausoleil, and Alan E. Willner, "Novel Filtering Function using an Embedded Ring Resonator," **Conference on Lasers and Electro-Optics (CLEO)**, paper CWP5, San Jose, CA, May 2008 (Optical Society of America, Wash., D.C., 2008).
274. Wei-Ren Peng, Kai-Ming Feng, Sien Chi, and Alan E. Willner, "Bit Error Rate Calculation for a Single Sideband OFDM Signal with Direct Detection Optically Pre-Amplified Receivers," **Conference on Lasers and Electro-Optics (CLEO)**, paper CWN3, San Jose, CA, May 2008 (Optical Society of America, Wash., D.C., 2008).
275. Lin Zhang, Yunchu Li, Jeng-Yuan Yang, Raymond G. Beausoleil, and Alan E. Willner, "Creating RZ Data Modulation Formats using Parallel Silicon Microring Modulators for Pulse Carving in DPSK," **Conference on Lasers and Electro-Optics (CLEO)**, paper CWN4, San Jose, CA, May 2008 (Optical Society of America, Wash., D.C., 2008).
276. Xiaoxue Zhao, Bo Zhang, Louis Christen, Devang Parekh, Fumio Koyama, Werner Hofmann, Markus C. Amann, Alan E. Willner, and Connie J. Chang-Hasnain, "Data Inversion and Adjustable Chirp in 10-Gbps Directly-Modulated Injection-Locked 1.55- $\mu\text{m}$  VCSELs," **Conference on Lasers and Electro-Optics (CLEO)**, paper CMW5, San Jose, CA, May 2008 (Optical Society of America, Wash., D.C., 2008).
277. Yunchu Li, Lin Zhang, Raymond G. Beausoleil, and Alan E. Willner, "Ring Resonator Induced Data Timing Skew in On-Chip WDM Optical Interconnects," **Conference on Lasers and Electro-Optics (CLEO)**, paper JWA91, San Jose, CA, May 2008 (Optical Society of America, Wash., D.C., 2008).

**REFEREED PROCEEDINGS: (CONTINUED)**

278. L. Christen, I. Fazal, O.F. Yilmaz, X. Wu, S. Nuccio, A.E. Willner, C. Langrock, and M.M. Fejer, "Tunable 105-ns Optical Delay for 80-Gbit/s RZ-DQPSK, 40-Gbit/s RZ-DPSK, and 40-Gbit/s RZ-OOK Signals using Wavelength Conversion and Chromatic Dispersion,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) '08**, paper OTuD1, San Diego, CA, Feb. 2008 (Optical Society of America, Washington, D.C., 2008).
279. J.-Y. Yang, L. Zhang, T. Wu, X. Wu, L. C. Christen, S. Nuccio, O. F. Yilmaz, W.-R. Peng, and A.E. Willner, "Chromatic Dispersion Monitoring of 40-Gb/s RZ-DPSK and 80-Gb/s RZ-DQPSK Data using Cross-Phase Modulation in Highly-Nonlinear Fiber and a Simple Power Monitor,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) '08**, paper OTuG5, San Diego, CA, Feb. 2008 (Optical Society of America, Washington, D.C., 2008).
280. L. Christen, O. F. Yilmaz, S. Nuccio, X. Wu, I. Fazal, A. E. Willner, "Tunable Time-Slot-Interchange of 40-Gb/s Optical Packets using Conversion/Dispersion-Based Tunable 100-ns Delays,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) '08**, paper OThA4, San Diego, CA, Feb. 2008 (Optical Society of America, Washington, D.C., 2008).
281. Xiaoxia Wu, Louis Christen, Scott R. Nuccio, Omer Faruk Yilmaz, Loukas Paraschis, Yannick Keith Lize, and Alan E. Willner, "Experimental Synchronization Monitoring of I/Q Data and Pulse-Carving Temporal Misalignment for a Serial-Type 80-Gbit/s RZ-DQPSK Transmitter,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) '08**, paper OTuG2, San Diego, CA, Feb. 2008 (Optical Society of America, Washington, D.C., 2008).
282. Bo Zhang, Xiaoxue Zhao, Louis Christen, Devang Parekh, Werner Hoffman, Ming C. Wu, Markus C. Amann, Connie J. Chang-Hasnain, and Alan E. Willner, "Adjustable Chirp Injection-Locked 1.55- $\mu$ m VCSELs for Enhanced Chromatic Dispersion Compensation at 10-Gbit/s,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) '08**, paper OWT7, San Diego, CA, Feb. 2008 (Optical Society of America, Washington, D.C., 2008).
283. Lin Zhang, Jeng-Yuan Yang, Yunchu Li, Raymond G. Beausoleil, and Alan E. Willner, "Silicon Microring-Resonator-Based Modulation and Demodulation of DQPSK Signals,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) '08**, paper OWL5, San Diego, CA, Feb. 2008 (Optical Society of America, Washington, D.C., 2008).
284. Wei-Ren Peng, Xiaoxia Wu, Vahid R. Arbab, Bishara Shamee, Jeng-Yuan Yang, Louis C. Christen, Kai-Ming Feng, Alan E. Willner and Sien Chi, "Experimental Demonstration of 340 km SSMF Transmission using a Virtual Single Sideband OFDM Signal that Employs Carrier Suppressed and Iterative Detection Techniques,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) '08**, paper OMU1, San Diego, CA, Feb. 2008 (Optical Society of America, Washington, D.C., 2008).
285. Lin Zhang, Yunchu Li, Muping Song, Raymond G. Beausoleil, and Alan E. Willner, "DPSK Data Quality Dependencies in Microring-Based Transmitter and Receiver,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) '08**, paper JThA19, San Diego, CA, Feb. 2008 (Optical Society of America, Washington, D.C., 2008).
286. Wei-Ren Peng, Xiaoxia Wu, Vahid R. Arbab, Bishara Shamee, Louis C. Christen, Jeng-Yuan Yang, Kai-Ming Feng, Alan E. Willner, and Sien Chi, "Experimental Demonstration of a Coherently Modulated and Directly Detected Optical OFDM System using an RF-Tone Insertion,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) '08**, paper OMU2, San Diego, CA, Feb. 2008 (Optical Society of America, Washington, D.C., 2008).
287. Y. Li, L. Zhang, M. Song, Y. Yue, R.G. Beausoleil, and A.E. Willner, "Enhanced Performance and Flexibility in Silicon Modulators Based on a Coupled-Ring-Resonator Structure,"**IEEE/OSA Conference**



**REFEREED PROCEEDINGS: (CONTINUED)**

- on **Optical Fiber Communications (OFC)** '08, paper JThA35, San Diego, CA, Feb. 2008 (Optical Society of America, Washington, D.C., 2008).
288. Xiaoxia Wu, Louis Christen, Jeng-Yuan Yang, Scott R. Nuccio, Alan Willner, and Loukas Paraschis, "40-GHz CSRZ Optical Pulse Generation using a 10-GHz Mach-Zehnder Modulator and a 25-ps Delay Line Interferometer," **IEEE Lasers and Electro-Optics Society Annual Meeting 2007**, paper ThX3, Orlando, Oct. (IEEE, Piscataway, NJ, 2007).
  289. Lin Zhang, Jengyuan Yang, Muping Song, Yunchu Li, Bo Zhang, Ray G. Beausoleil, and Alan E. Willner, "Ultra Small Modulator and Demodulator for Differential Phase-Shift-Keying Data Format Based on Silicon Microrings," **IEEE Lasers and Electro-Optics Society Annual Meeting 2007**, paper ThU5, Orlando, Oct. (IEEE, Piscataway, NJ, 2007).
  290. Louis Christen, Scott R. Nuccio, Xiaoxia Wu, Alan E. Willner, and Loukas Paraschis, "Experimental Demonstration of Reduced Complexity 43-Gb/s RZ-DQPSK Rate-Tunable Receiver," **European Conference on Optical Communications (ECOC)**, paper Th9.3.3, Berlin, Sept. 2007.
  291. B. Zhang, L. Zhang, L.-S. Yan, I. Fazal, J.-Y. Yang, and A.E. Willner, "Variable-Bit-Rate, Continuously-Controllable Optical TDM using SBS-Based Slow Light Tunable Delay Line," **European Conference on Optical Communications (ECOC)**, paper We8.2.4, Berlin, Sept. 2007.
  292. J.-Y. Yang, L. Zhang, L.C. Christen, B. Zhang, S. Nuccio, X. Wu, L.-S. Yan, S. Yao and A.E. Willner, "Chromatic-Dispersion-Insensitive PMD Monitoring of 20-Gb/s DQPSK and 10-Gb/s DPSK using DGD-Generated Polarization-Based Interferometer Filter," **European Conference on Optical Communications (ECOC)**, paper Tu3.5.3, Berlin, Sept. 2007.
  293. B. Zhang, L.-S. Yan, L. Zhang, S. Nuccio, L. Christen, T. Wu, and A.E. Willner, "Experimental Demonstration of Slow Light on RZ-DQPSK Signals," **European Conference on Optical Communications (ECOC)**, paper Th9.4.4, Berlin, Sept. 2007.
  294. Xiaoxia Wu, Louis Christen, Bo Zhang, Jeng-Yuan Yang, Lin Zhang, Scott R. Nuccio, Alan E. Willner, and Loukas Paraschis, "Experimental Synchronization Monitoring of I/Q Misalignment and Pulse Carving Misalignment in 20-Gbit/s RZ-DQPSK Data Generation," **European Conference on Optical Communications (ECOC)**, paper Tu3.5.5, Berlin, Sept. 2007.
  295. Irfan Fazal, Omer Yilmaz, Scott Nuccio, Bo Zhang, Carsten Langrock, Martin Fejer and Alan Willner, "Experimental Time-Slot-Interchange Data Packet Switching using a Reconfigurable and Continuously-Tunable Optical 24-ns Delay Based on Wavelength Conversion and Inter-channel Chromatic Dispersion," **European Conference on Optical Communications (ECOC)**, paper P066, Berlin, Sept. 2007.
  296. B. Zhang, L.-S. Yan, L. Zhang, A. E. Willner, Z. Zhu, and D.J. Gauthier, "Broadband SBS Slow Light using Simple Spectrally-Sliced Pumping," **European Conference on Optical Communications (ECOC)**, paper P0025, Berlin, Sept. 2007.
  297. L. Christen, S. Nuccio, Y.K. Lize, A.E. Willner, and L. Paraschis, "Simultaneous Balanced DPSK Demodulation of Multiple 40 Gbit/s WDM Channels using a Single Periodic FBG," **Conference on Lasers and Electro-Optics (CLEO)**, paper CMJJ3, Baltimore, MD, May 2007 (Optical Society of America, Wash., D.C., 2007).
  298. Yannick Keith Lize, Mathieu Faucher, Érick Jarry, Patrick Ouellette, Alexandre Wetter, Raman Kashyap, Alan E. Willner, "Low-Loss S-, C- and L-band Differential Phase Shift Keying Demodulator," **Conference on Lasers and Electro-Optics (CLEO)**, paper CMJJ4, Baltimore, MD, May 2007 (Optical Society of America, Wash., D.C., 2007).

**REFEREED PROCEEDINGS: (CONTINUED)**

299. L. Christen, S. Nuccio, X. Wu, A.E. Willner, "Polarization-Based 43 Gb/s RZ-DQPSK Receiver Design Employing a Single Delay-Line Interferometer," **Conference on Lasers and Electro-Optics (CLEO)**, paper CMJJ6, Baltimore, MD, May 2007 (Optical Society of America, Wash., D.C., 2007).
300. B. Zhang, L.-S. Yan, J.-Y. Yang, I. Fazal, A.E. Willner, "Independent Delay Control and Synchronization of Multiple 2.5-Gb/s Channels within a Single SBS Slow-Light Medium," **Conference on Lasers and Electro-Optics (CLEO)**, paper CTuB4, Baltimore, MD, May 2007 (Optical Society of America, Wash., D.C., 2007).
301. L. Christen, S. Nuccio, Y.K. Lize, N. Jayachandran, A. E. Willner, L. Paraschis, "Stabilization of a 40 Gb/s DPSK Delay-Line Interferometer using Half Bit-Rate AM Pilot Tone Monitoring," **Conference on Lasers and Electro-Optics (CLEO)**, paper CMJJ2, Baltimore, MD, May 2007 (Optical Society of America, Wash., D.C., 2007).
302. Yannick Keith Lize, Louis Christen, Scott Nuccio, Xiaoxia Wu, Alan E. Willner, Raman Kashyap, and Mathieu Faucher, "Optical Error Correction using Passive Optical Logic Gates Demodulators in Differential Demodulation," accepted to the **Conference on Lasers and Electro-Optics (CLEO)**, Baltimore, MD, May 2007 (Optical Society of America, Wash., D.C., 2007).
303. L.-S. Yan, B. Zhang, A. Belisle, A.E. Willner, and X. Steve Yao, "Automatic All-Optical Detection in Polarization-Division-Multiplexing System using Power Unbalanced Transmission," **Conference on Lasers and Electro-Optics (CLEO)**, paper CMJJ5, Baltimore, MD, May 2007 (Optical Society of America, Wash., D.C., 2007).
304. B. Zhang, I. Fazal, L.-S. Yan, L. Zhang, A.E. Willner, Z. Zhu, and D.J. Gauthier, "System Performance of DPSK Signals Transmitted Through Broadband SBS-based Slow Light Element and Reduction of Slow-Light Induced Data-Pattern Dependence," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '07**, paper OThD2, Anaheim, CA, March 2007 (Optical Society of America, Washington, D.C., 2007).
305. Y.K. Lizé, J.-Y. Yang, L.C. Christen, X.-X. Wu, S. Nuccio, T. Wu, A.E. Willner, R. Kashyap, and F. Séguin, "Simultaneous and Independent Monitoring of OSNR, Chromatic and Polarization Mode Dispersion for NRZ-OOK, DPSK and Duobinary," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '07**, paper OThN2, Anaheim, CA, March 2007 (Optical Society of America, Washington, D.C., 2007).
306. L.C. Christen, Y.K. Lize, S. Nuccio, A.E. Willner, and L. Paraschis, "Enhanced Sensitivity and Compensation of Transmission Impairments using Multi-Bit DPSK Error Correction," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '07**, paper JThA50, Anaheim, CA, March 2007 (Optical Society of America, Washington, D.C., 2007).
307. L.-S. Yan, B. Zhang, X. Yao and A.E. Willner, "All-Fiber PMD Emulator with Reduced Number of Polarization Controllers between Sections," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '07**, paper OTuN4, Anaheim, CA, March 2007 (Optical Society of America, Washington, D.C., 2007).
308. S. Kumar and A.E. Willner, "High-Speed Phase-Correlated Signal Generation by Phase-Reconstruction of OTDM Signals through Differential Cross-Phase Modulation in an SOA-MZI," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '07**, paper JThA37, Anaheim, CA, March 2007 (Optical Society of America, Washington, D.C., 2007).
309. V.R. Arbab, P. Saghari, N.M. Jayachandran, and A.E. Willner, "Variable Bit Rate Optical CDMA Networks using Multiple Pulse Position Modulation," **IEEE/OSA Conference on Optical Fiber**

**REFEREED PROCEEDINGS: (CONTINUED)**

- Communications** (OFC) '07, paper OMO6, Anaheim, CA, March 2007 (Optical Society of America, Washington, D.C., 2007).
310. L. Zhang, Y. Li, J.-Y. Yang, B. Zhang, R. Beausoleil, and A.E. Willner, "Performance and Design Guidelines for 10-Gbit/s Systems using Silicon-Based Ring-Resonator Modulators," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '07**, paper JWA6, Anaheim, CA, March 2007 (Optical Society of America, Washington, D.C., 2007).
311. P. Saghari, R. Omrani, V.R. Arbab, A.E. Willner, and P.V. Kumar, "Increasing the Number of Users in an Optical CDMA System by Pulse-Position Modulation," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '07**, paper JThA73, Anaheim, CA, March 2007 (Optical Society of America, Washington, D.C., 2007).
312. M. Nazarathy, Y. Yadin, M. Orenstein, Y.K. Lize, L.C. Christen, and A.E. Willner, "Enhanced Self-Coherent Optical Decision-Feedback-Aided Detection of Multi-Symbol M-DPSK/PolSK," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '07**, paper JWA43, Anaheim, CA, March 2007 (Optical Society of America, Washington, D.C., 2007).
313. L. Christen, Y.K. Lize, S. Nuccio, J.-Y. Yang, N. Jayachandran, P. Ebrahimi, A.E. Willner, R. Kashyap, and Loukas Paraschis, "Multi-format Continuously Variable Bitrate DPSK/OOK Demodulating Receiver Design," **European Conference on Optical Communications (ECOC)**, paper Tu3.2.4, Cannes, France, Sept. 2006.
314. Y.K. Lize, L. Christen, S. Nuccio, P. Saghari, R. Gomma, J.-Y. Yang, A.E. Willner, R. Kashyap, and L. Paraschis, "Power Penalty in Multibit Differential Phase Shift Keying Demodulation," **European Conference on Optical Communications (ECOC)**, paper Tu3.2.3, Cannes, France, Sept. 2006.
315. L. Christen, Y.K. Lize, N. Jayachandran, S. Nuccio, P. Saghari, A.E. Willner, and L. Paraschis, "Receiver-Based Temporal Pulse Carving of DPSK Bits for 20 Gbit/s Time-Multiplexed and Time-Interleaved Systems," **European Conference on Optical Communications (ECOC)**, paper We3.P90, Cannes, France, Sept. 2006.
316. Y.K. Lize, L. Christen, P. Saghari, S. Nuccio, A.E. Willner, R. Kashyap, and L. Paraschis, "Implication of Chromatic Dispersion on Frequency Offset and Bit Delay Mismatch in DPSK Demodulation," **European Conference on Optical Communications (ECOC)**, paper Mo3.2.5, Cannes, France, Sept. 2006.
317. V.R. Arbab, P. Saghari, M. Haghi, R. Omrani, A.E. Willner, and P.V. Kumar, "Demonstration of Double Pulse Position Modulation (2-PPM) in Time-Wavelength Optical CDMA Systems," **European Conference on Optical Communications (ECOC)**, paper Tu4.2.5, Cannes, France, Sept. 2006.
318. Y.K. Lize, L. Christen, J.-Y. Yang, P. Saghari, S. Nuccio, A.E. Willner, and R. Kashyap, "Simultaneous Monitoring of Chromatic Dispersion and PMD for OOK and DPSK using Partial-Bit-Delay-Assisted Clock Tone Detection," **European Conference on Optical Communications (ECOC)**, paper Mo4.4.7, Cannes, France, Sept. 2006.
319. M. Haghi, P. Saghari, V.R. Arbab, P. Ebrahimi, and Alan Eli Willner, "Differential-Pulse-Position-Modulation (DPPM) in OCDMA Networks to Achieve Higher Data-Rate/User," **European Conference on Optical Communications (ECOC)**, paper Th3.6.1, Cannes, France, Sept. 2006.
320. Louis Christen, Yannick Keith Lize, Scott Nuccio, Jeng-Yuan Yang, Poorya Saghari, Alan.E. Willner, and Loukas Paraschis, "Fiber Bragg Grating Balanced DPSK Demodulation," **IEEE Lasers and Electro-Optics Society Annual Meeting 2006**, paper WP2, Montreal, Nov. (IEEE, Piscataway, NJ, 2006).

**REFEREED PROCEEDINGS: (CONTINUED)**

321. Yannick Keith Lize, Robert Gomma, Raman Kashyap, Leigh Palmer, and A.E. Willner, "Low-Cost Polarization Scrambling using a Single Re-Entrant Polarization Controller," **IEEE Lasers and Electro-Optics Society Annual Meeting 2006**, paper ThH5, Montreal, Nov. (IEEE, Piscataway, NJ, 2006)
322. Yannick Keith Lize, Bryan Burgoyne, Xavier Daxhelet, Alan E. Willner, and Raman Kashyap, "Linear Effective Index Contribution to the Enhancement of Nonlinear Coefficient in Silica Nanowires," **OSA Annual Meeting Frontiers in Optics**, paper FWE5, Rochester, Oct. 2006 (OSA, D.C., 2006).
323. Daniel J. Gauthier, Zhaoming Zhu, Andrew M.C. Dawes, Lin Zhang and Alan E. Willner, "Optimizing Broadband SBS Slow Light in an Optical Fiber," **Laser Science XXII** (co-located with the OSA Annual Meeting), paper LMF4, Rochester, Oct. 2006 (OSA, D.C., 2006).
324. L.C. Christen and A.E. Willner, "System Sensitivity of Multi-Level 16-QAM and QPSK to Transmitter Imperfections in Different Modulator Designs," **OSA Topical Meeting on Coherent Optical Technologies and Applications (COTA)**, paper CThC3, June 2006, Whistler, Canada (OSA, D.C., 2006).
325. P. Vijay Kumar, Reza Omrani, Joe Touch, Alan E. Willner and Poorya Saghari, "A Novel Optical CDMA Modulation Scheme: Code Cycle Modulation," **Globecom**, San Francisco, Nov. 2006 (IEEE, Piscataway, NJ, 2006).
326. Andrew Stapleton, Stephen Farrell, Louis Christen, Zhen Peng, Alan Willner, John O'Brien, and Daniel Dapkus, "Electrically Tunable Chip-Scale Semiconductor Microdisk Phase Modulators," **OSA Topical Meeting on Integrated Photonics Research and Applications (IPRA)**, paper ITuB6, Connecticut, April 2006 (OSA, D.C., 2006).
327. B. Zhang, D. Leuenberger, M.-C. M. Lee, S. Hu, M. Haghi, A.E. Willner, and M.C. Wu, "Error-Free Data Transmission Through a Tunable-Bandwidth Filter Based on MEMS-Actuated Microdisk Resonator," **Conference on Lasers and Electro-Optics (CLEO)**, paper CFC3, Long Beach, CA, May 2006 (Optical Society of America, Wash., D.C., 2006).
328. Y. Wang, S. Hu, L.-S. Yan, and A.E. Willner, "Optical Performance Monitoring of Chromatic Dispersion and PMD for Multi-level Intensity and Phase Modulation," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThE4, Long Beach, CA, May 2006 (Optical Society of America, Wash., D.C., 2006).
329. P. Saghari, M. Haghi, V.R. Arbab, S. Kumar, R. Gholizadeh, A.E. Willner, V.P. Kumar, and J.D. Touch, "Experimental Demonstration of Code Position Modulation in an O-CDMA System to Increase the Number of Users," **Conference on Lasers and Electro-Optics (CLEO)**, paper CWH3, Long Beach, CA, May 2006 (Optical Society of America, Wash., D.C., 2006).
330. S. Kumar, B. Zhang, E. Pakbaznia, J.E. McGeehan, and A.E. Willner, "Effect of Operational Parameters and their Interplay in Differential Cross-Phase-Modulation Wavelength Converters," **Conference on Lasers and Electro-Optics (CLEO)**, paper CMT5, Long Beach, CA, May 2006 (Optical Society of America, Wash., D.C., 2006).
331. T. Luo, L. Zhang, W. Zhang, C. Yu, and A.E. Willner, "Reduction of Pattern Dependent Distortion on Data in an SBS-Based Slow Light Fiber Element by Detuning the Channel Away from the Gain Peak," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThCC4, Long Beach, CA, May 2006 (Optical Society of America, Wash., D.C., 2006).
332. L. Zhang, T. Luo, and A.E. Willner, "Index-Guiding Holey Fiber with High Group Birefringence," **Conference on Lasers and Electro-Optics (CLEO)**, paper CMM3, Long Beach, CA, May 2006 (Optical Society of America, Wash., D.C., 2006).

**REFEREED PROCEEDINGS: (CONTINUED)**

333. Z. Zhu, A.M.C. Dawes, D.J. Gauthier, L. Zhang, and A.E. Willner, "12-GHz-Bandwidth SBS Slow Light in Optical Fibers," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '06**, Post-Deadline paper PDP1, Anaheim, CA, March 2006 (Optical Society of America, Washington, D.C., 2006).
334. P. Saghari, P. Kamath, V.R. Arbab, M. Haghi, A.E. Willner, J.A. Bannister, and J.D. Touch "Experimental Demonstration of an Interference-Avoidance-Based Protocol for O-CDMA Networks," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '06**, Post-Deadline paper PDP46, Anaheim, CA, March 2006 (Optical Society of America, Washington, D.C., 2006).
335. S. Kumar, B. Zhang, and A.E. Willner, "Elimination of Data Pattern Dependence in SOA-based Differential-Mode Wavelength Converters using Optically-Induced Birefringence," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '06**, paper OThB3, Anaheim, CA, March 2006 (Optical Society of America, Washington, D.C., 2006).
336. L. Zhang, T. Luo, W. Zhang, C. Yu, Y. Wang and A.E. Willner, "Optimizing Operating Conditions to Reduce Data Pattern Dependence Induced by Slow Light Elements," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '06**, paper OFP7, Anaheim, CA, March 2006 (Optical Society of America, Washington, D.C., 2006).
337. S. Kumar, P. Saghari, P. Ebrahimi, M. Haghi, V.R. Arbab, and A.E. Willner, "Experimental Demonstration of All-Optical "Missing Chip Detection" to Alleviate Near-Far Effect in O-CDMA Systems," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '06**, paper OTHM1, Anaheim, CA, March 2006 (Optical Society of America, Washington, D.C., 2006).
338. I. Fazal, S. Kumar, P. Saghari, L.C. Christen, Y. Li, and A.E. Willner, "Data-Polarization-Insensitive Wavelength Conversion in a PPLN Waveguide by Cross-Polarization-Modulation of the Pump using an SOA," **IEEE/OSA Conference on Optical Fiber Communications (OFC) '06**, paper OTHB4, Anaheim, CA, March 2006 (Optical Society of America, Washington, D.C., 2006).
339. L. Christen, I. Fazal, M. Giltrelli, Y. Wang, L. Yan, A.E. Willner, L. Paraschis, and S. Yao, "PMD and CD Sensitivity Enhancement in Directly Modulated Transmission Systems through RZ DM-DPSK," **European Conference on Optical Communications (ECOC)**, paper Th2.2.4, Glasgow, Scotland, Sept. 2005.
340. Y. Wang, C. Yu, L.-S. Yan, A.E. Willner, R. Roussev, C. Langrock, and M.M. Fejer, "Continuously-Tunable Dispersionless 30-ns Optical Delay Element using a Two-Pump PPLN, DCF, and a Tunable Dispersion Compensator," **European Conference on Optical Communications (ECOC)**, paper Th1.3.3, Glasgow, Scotland, Sept. 2005.
341. P. Ebrahimi, R. Chen, A.E. Willner, and D.A.B. Miller, "Filtering and High-Speed Switching Characteristics of a C-band Rapidly Tunable Wavelength-Selective MSM Detector," **European Conference on Optical Communications (ECOC)**, paper We3.6.5, Glasgow, Scotland, Sept. 2005.
342. L.-S. Yan, X. Steve Yao, C. Yu, G. Xie, Y. Wang, L. Lin, Z. Chen, and A.E. Willner, "<1- $\mu$ s Highly-Repeatable Polarization-State Generator and Analyzer for 40-Gb/s System Performance Monitoring," **European Conference on Optical Communications (ECOC)**, paper Th3.2.3, Glasgow, Scotland, Sept. 2005.
343. T. Luo, C. Yu, L.-S. Yan, S. Kumar, Z. Pan, A.E. Willner, and S. Yao, "Simple Autocorrelation Technique by Tuning a DGD Element and Measuring a Pulse's Degree-of-Polarization," **European Conference on Optical Communications (ECOC)**, paper We2.3.3, Glasgow, Scotland, Sept. 2005.
344. L.-S. Yan, X. Steve Yao, and A.E. Willner, "Enabling "Hinge" Model by Slow Dynamics in a Variable DGD-based PMD Emulator," **European Conference on Optical Communications (ECOC)**, paper We4.P.130, Glasgow, Scotland, Sept. 2005.

**REFEREED PROCEEDINGS: (CONTINUED)**

345. Changyuan Yu, Ting Luo, Lin Zhang and Alan E. Willner, "Distortion Effects on Data Pulses in a Slow Light Tunable Delay Line Due to Stimulated Brillouin Scattering in a Highly Nonlinear Fiber," **European Conference on Optical Communications (ECOC)**, paper Mo4.5.2, Glasgow, Scotland, Sept. 2005.
346. P. Saghari, R. Gholizadeh, P. Kamath, R. Omrani, A.E. Willner, J.A. Bannister\*, J.D. Touch, P.V. Kumar, "Analytical Model of Variable Quality of Service to Increase Number of Users in an O-CDMA Network," **European Conference on Optical Communications(EOC)**, paper Th1.4.7, Glasgow, Scotland, Sept. 2005.
347. J.E. McGeehan, M. Giltrelli, and A.E. Willner, "All-Optical Digital 3-Input AND Gate using Sum- and Difference-Frequency Generation in a PPLN Waveguide" **IEEE Lasers and Electro-Optics Society Summer Topical Meeting on Optical Signal Processing**, Proceedings, paper TuC1.2, San Diego, CA, July 25-27 (IEEE, Piscataway, NJ, 2005).
348. P. Saghari, R. Gholizadeh, H. Abrishami, E. Pakbaznia, J.E. McGeehan, S.M.R. M Nezam, and A.E. Willner, "Experimental Evaluation of the Optimum Decision Threshold for Varying Numbers of Active Users in a 2D t- $\lambda$  Asynchronous O-CDMA System,"**Conference on Lasers and Electro-Optics (CLEO)**, paper CTuFF4, Baltimore, MD, May 2005 (Optical Society of America, Wash., D.C., 2005)
349. J.E. McGeehan, S. Kumar, and A.E. Willner, "All-Optical Digital Half-Subtractor/Adder using Semiconductor Optical Amplifiers and a PPLN Waveguide,"**Conference on Lasers and Electro-Optics (CLEO)**, paper CTuX6, Baltimore, MD, May 2005 (Optical Society of America, Wash., D.C., 2005).
350. P. Saghari, R. Gholizadeh, H. Abrishami, E. Pakbaznia, and A.E. Willner, "Doubling the Number of Active Users in a 2-D Time-Wavelength O-CDMA Network using a Hard Limiting Receiver,"**Conference on Lasers and Electro-Optics (CLEO)**, paper JThE64, Baltimore, MD, May 2005 (Optical Society of America, Wash., D.C., 2005).
351. L. Zhang, T. Luo, L.-S. Yan, Y. Wang, C. Yu, and A.E. Willner, "Periodic Dispersion Compensation Induced by Photo-Sensitivity for Achieving Quasi-Phase Matching in Holey Fibers,"**Conference on Lasers and Electro-Optics (CLEO)**, paper JWB49, Baltimore, MD, May 2005 (Optical Society of America, Wash., D.C., 2005).
352. R.W. Boyd, D.J. Gauthier, A.L. Gaeta, and A.E. Willner, "Limits on the Time Delay Induced by Slow-Light Propagation,"**Quantum Electronics and Laser Science Conference (QELS)**, paper QTuC1, Baltimore, MD, May 2005 (Optical Society of America, Wash., D.C., 2005).
353. C. Yu, T. Luo, B. Zhang, Z. Pan, M. Adler, Y. Wang, J. McGeehan, and A.E. Willner, "3R Regeneration of a 40-Gbit/s Optical Signal by Optical Parametric Amplification in a Highly-Nonlinear Fiber,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) '05**, paper OTuO1, Anaheim, CA, March 2005 (Optical Society of America, Washington, D.C., 2005).
354. T. Luo, Z. Pan, C. Yu, L.-S. Yan, S. Kumar, B. Zhang, M. Adler, A.E. Willner, and S. Yao, "Optical-Fiber-Based Autocorrelation Technique using a Tunable DGD Element and Highly-Nonlinear Fiber,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) '05**, paper OFH6, Anaheim, CA, March 2005 (Optical Society of America, Washington, D.C., 2005).
355. C. Yu, Z. Pan, T. Luo, S. Kumar, L.-S. Yan, B. Zhang, L. Zhang, Y. Wang, M. Adler, and A.E. Willner, "160-GHz Pulse Generator using a 40-GHz Phase Modulator and PM Fiber,"**IEEE/OSA Conference on Optical Fiber Communications (OFC) '05**, paper OThR5, Anaheim, CA, March 2005 (Optical Society of America, Washington, D.C., 2005).
356. L.-S. Yan, T. Lu, B. Zhang, C. Yu, D.O. Yevick, and A.E. Willner, "Fiber Transmission System Application and Limitation of Multicanonical Sampling in PMD Emulation,"**IEEE/OSA Conference on**

**REFEREED PROCEEDINGS: (CONTINUED)**

- Optical Fiber Communications** (OFC) '05, paper OThT4, Anaheim, CA, March 2005 (Optical Society of America, Washington, D.C., 2005).
357. L.-S. Yan, Y. Wang, B. Zhang, C. Yu, J. McGeehan, L. Paraschis, and A.E. Willner, "1,400 km Transmission using a Directly Modulated DFB Laser and Optical Sideband Filtering in an 8x10 Gb/s WDM System," **European Conference on Optical Communications (ECOC)**, paper Mo4.5.7, Stockholm, Sweden, Sept. 2004.
358. C. Yu, Z. Pan, T. Luo, Y. Wang, L.C. Christen, and A.E. Willner, "40-GHz RZ and CS-RZ Pulse Generation using a Phase Modulator and PM Fiber," **European Conference on Optical Communications (ECOC)**, paper We4.p.125, Stockholm, Sweden, Sept. 2004.
359. S. Kumar and A.E. Willner, "All Optical XNOR Gate using Simultaneous Four-Wave Mixing and Cross-Gain Modulation in an SOA," **IEEE Lasers and Electro-Optics Society Annual Meeting 2004**, paper ThU2, Puerto Rico, Nov. (IEEE, Piscataway, NJ, 2004).
360. M. Bagheri, J. R. Cao, W. K. Marshall, Z.-J. Wei, S.-J. Choi, J. D. O'Brien, P. D. Dapkus, and A.E. Willner, "Linewidth Measurement of Sapphire-Bonded 2-D Photonic Crystal Lasers," **IEEE Lasers and Electro-Optics Society Annual Meeting 2004**, paper MC4, Puerto Rico, Nov. (IEEE, Piscataway, NJ, 2004).
361. K. Merchant, J. McGeehan, A. Willner, S. Ovadia, P. Kamath, J. Touch, and J. Bannister, "Performance Evaluation of a Router with Tunable Recirculating Buffers in an Optical Burst Switching Environment," **Broadband Networks 2004**. BroadNets 2004. Proceedings. First International Conference on, San Jose, CA, pp. 102-109, Oct. 2004 (IEEE, Piscataway, NJ, 2004).
362. Kashyap Merchant, John McGeehan, Alan E. Willner, Shlomo Ovadia, Joseph Bannister, and Joe Touch, "Performance Evaluation of Core Router in an Optical Burst Switching Environment," **Broadband Networks 2004 Conference** (IEEE Co-Sponsored), Broadband Optical Networking Symposium, San Jose, CA, Oct. 2004 (IEEE, Piscataway, NJ, 2004).
363. Y. Wang, C. Yu, T. Luo, Z. Pan, L.-S. Yan, A.E. Willner, "Tunable All-Optical Wavelength Conversion and Wavelength Multicasting using Orthogonally-Polarized Fiber FWM," **Conference on Lasers and Electro-Optics (CLEO)**, paper CFA6, San Francisco, CA, May 2004 (Optical Society of America, Wash., D.C., 2004).
364. L.-S. Yan, Y. Wang, B. Zhang, C. Yu, J. McGeehan, L. Paraschis, and A.E. Willner, "Reach Extension in 10-Gb/s Directly Modulated Systems using Narrow-Band Partial Optical Filtering," **Conference on Lasers and Electro-Optics (CLEO)**, paper CWA18, San Francisco, CA, May 2004 (Optical Society of America, Wash., D.C., 2004).
365. C. Yu, L. Christen, T. Luo, Y. Wang, Z. Pan, L.-S. Yan, and A.E. Willner, "All-Optical XOR Gate Based on Kerr Effect in Single Highly-Nonlinear Fiber," **Conference on Lasers and Electro-Optics (CLEO)**, paper CFA4, San Francisco, CA, May 2004 (Optical Society of America, Wash., D.C., 2004).
366. S.M.R. Motaghian Nezam, J.E. McGeehan, R. Gholizadeh, and A.E. Willner, "Measuring the Nonlinear Coefficient of a Fiber Span using Optical and RF Clock Tone Monitoring," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThLL5, San Francisco, CA, May 2004 (Optical Society of America, Wash., D.C., 2004).
367. Y.-W. Song, S.M.R. Motaghian Nezam, Z. Pan, and A.E. Willner, "Accurate DOP Monitoring of Several WDM Channels for Simultaneous PMD Compensation," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThLL1, San Francisco, CA, May 2004 (Optical Society of America, Wash., D.C., 2004).

**REFEREED PROCEEDINGS: (CONTINUED)**

368. S.M.R. Motaghian Nezam, P. Saghari, and A.E. Willner, "XPM-Induced Control Signal Degradation for DOP and RF-Power-Based PMD Monitors in WDM Systems," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThLL2, San Francisco, CA, May 2004 (Optical Society of America, Wash., D.C., 2004).
369. C. Yu, L.-S. Yan, T. Luo, Y. Wang, Z. Pan, and A.E. Willner, "Width-Tunable Optical Pulse Generation Based on Four-Wave Mixing in Highly-Nonlinear Fiber," **Conference on Lasers and Electro-Optics (CLEO)**, paper CTuN4, San Francisco, CA, May 2004 (Optical Society of America, Wash., D.C., 2004).
370. T. Lu, D.O. Yevick, L.-S. Yan, and A.E. Willner, "Experimental Realization of Multicanonical Sampling," **Conference on Lasers and Electro-Optics (CLEO)**, paper CTuEE4, San Francisco, CA, May 2004 (Optical Society of America, Wash., D.C., 2004).
371. S. Kumar, D. Gurkan, A.E. Willner, K. Parameswaran, and M.M. Fejer, "All-Optical Half Adder using a PPLN Waveguide and an SOA," **Conference on Optical Fiber Communications (OFC) '04**, paper WN2, Los Angeles, CA, Feb. 2004 (Optical Society of America, Washington, D.C., 2004).
372. S.M.R. Motaghian Nezam, J.E. McGeehan, and A.E. Willner, "Chromatic Dispersion Monitoring using Partial Optical Filtering and Phase-Shift Detection of Bit Rate and Doubled Half Bit Rate Frequency Components," **Conference on Optical Fiber Communications (OFC) '04**, paper ThU2, Los Angeles, CA, Feb. 2004 (Optical Society of America, Washington, D.C., 2004).
373. P. Saghari, S.M.R. Motaghian Nezam, A.B. Sahin, and A.E. Willner, "Polarization-State-Rotation and Filtering Receiver for Bandwidth-Efficient Tandem Single Sideband Systems," **Conference on Optical Fiber Communications (OFC) '04**, paper FN5, Los Angeles, CA, Feb. 2004 (Optical Society of America, Washington, D.C., 2004).
374. P. Ebrahimi, M. Kargar, M.C. Hauer, A.E. Willner, K. Yu, O. Solgaard, "A 10-ms-Tuning MEMS-Actuated Gires-Tournois Filter for use as a Tunable Wavelength Demultiplexer and a Tunable OCDMA Encoder/Decoder," **Conference on Optical Fiber Communications (OFC) '04**, paper ThQ2, Los Angeles, CA, Feb. 2004 (Optical Society of America, Washington, D.C., 2004).
375. L.-S. Yan, Y. Chang, S. Killmeyer, B. Gomatam, R. Talaga, T. Luo, and A.E. Willner, "Reach Extension in 10-Gb/s Long-Haul Fiber Links with Adaptive Eye Mapping in a Si-CMOS 16-bit Transceiver IC," **Conference on Optical Fiber Communications (OFC) '04**, Los Angeles, CA, paper FN1, Feb. 2004 (Optical Society of America, Washington, D.C., 2004).
376. T. Luo, C. Yu, L.-S. Yan, Z. Pan, Y. Wang, A.E. Willner, "Polarization-Insensitive Single-Pump Optical Parametric Amplifier by Depolarization of the Pump," **Conference on Optical Fiber Communications (OFC) '04**, paper TuC1, Los Angeles, CA, Feb. 2004 (Optical Society of America, Washington, D.C., 2004).
377. J.E. McGeehan, P. Saghari, S.M.R. Motaghian Nezam, T.H. Izadpanah, A.E. Willner, R. Omrani, and P.V. Kumar, "3D Time-Wavelength-Polarization OCDMA Coding for Increasing the Number of Users in OCDMA LANs," **Conference on Optical Fiber Communications (OFC) '04**, paper FE5, Los Angeles, CA, Feb. 2004 (Optical Society of America, Washington, D.C., 2004).
378. P. Saghari, R. Omrani, A.E. Willner, and P.V. Kumar, "Analytical Interference Model for 2-Dimensional (Time-Wavelength) Asynchronous O-CDMA Systems," **Conference on Optical Fiber Communications (OFC) '04**, paper FG7, Los Angeles, CA, Feb. 2004 (Optical Society of America, Washington, D.C., 2004).
379. C. Yu, Y. Wang, T. Luo, Z. Pan, S.M.R. Motaghian Nezam, A.B. Sahin, and A.E. Willner, "Chromatic-Dispersion-Insensitive PMD Monitoring for NRZ Data Based on Clock Power Measurement using a Narrowband FBG Notch Filter," **European Conference on Optical Communications (ECOC)**, Paper Tu4.2.3, Rimini, Italy, Sept. 2003.



**REFEREED PROCEEDINGS: (CONTINUED)**

380. L.-S. Yan, Y.Q. Shi, X.S. Yao, and A.E. Willner, "Simultaneous Monitoring of Both OSNR and PMD using Polarization Techniques," **European Conference on Optical Communications (ECOC)**, Paper We4.P.133, Rimini, Italy, Sept. 2003.
381. Y. Wang, Z. Pan, C. Yu, T. Luo, A.B. Sahin, and A.E. Willner, "A Multi-Wavelength Optical Source Based on Supercontinuum Generation using Phase and Intensity Modulation at the Line-Spacing Rate," **European Conference on Optical Communications (ECOC)**, Paper Th3.2.4, Rimini, Italy, Sept. 2003.
382. P. Ebrahimi, D. Gurkan, A.B. Sahin, D.S. Starodubov, and A.E. Willner, "Experimental Demonstration of Multiple-Wavelength Hard-Limiting Receiver for Reducing MAI Noise in a 2-D Time-Wavelength OCDMA System," **European Conference on Optical Communications (ECOC)**, Paper Th1.5.3, Rimini, Italy, Sept. 2003.
383. S.M.R. Motaghian Nezam, J.E. McGeehan, and A.E. Willner, "Cancellation of Second-Order PMD Effects on First Order DOP-Based DGD Monitors and Measurement of Depolarization Rate," **IEEE Lasers and Electro-Optics Society Annual Meeting 2003**, Paper TuA3, Tucson, AZ, Nov. (IEEE, Piscataway, NJ, 2003).
384. T. Luo, C. Yu, Z. Pan, Y. Wang, Y. Arieli, and A.E. Willner, "Chromatic-Dispersion-Insensitive DGD Monitoring by Adding a Frequency-Shifted Carrier Along the Orthogonal Polarization State," **IEEE Lasers and Electro-Optics Society Annual Meeting 2003**, Paper TuA4, Tucson, AZ, Nov. (IEEE, Piscataway, NJ, 2003).
385. S.M.R. Motaghian Nezam, J.E. McGeehan, and A.E. Willner, "Measuring of Link DGD Without Polarization Scrambling using Degree-of-Polarization and Symmetric/Asymmetric Partial Optical Filtering," **IEEE Lasers and Electro-Optics Society Annual Meeting 2003**, Paper ThQ4, Tucson, AZ, Nov. (IEEE, Piscataway, NJ, 2003).
386. A. Sahin and A.E. Willner, "System Limitations due to Chromatic Dispersion and Receiver Bandwidth for 2-D Time-Wavelength OCDMA Systems," **IEEE Lasers and Electro-Optics Society Annual Meeting 2003**, paper WI5, Tucson, AZ, Nov. (IEEE, Piscataway, NJ, 2003).
387. L.-S. Yan, Y. Shi, X.S. Yao, and A.E. Willner, "All-Order PMD Emulator with Tunable Statistics," **IEEE Lasers and Electro-Optics Society Summer Topical Meeting on Polarization Mode Dispersion**, Proceedings, paper TuB3.2, Vancouver, Canada, July 14-16 (IEEE, Piscataway, NJ, 2003).
388. S.M.R. Motaghian Nezam, J.E. McGeehan, and A.E. Willner, "Measuring Component DGD using Polarized Fixed Frequency Components and Monitoring the DOP," **IEEE Lasers and Electro-Optics Society Summer Topical Meeting on Polarization Mode Dispersion**, Proceedings, paper WB2.3, Vancouver, Canada, July 14-16 (IEEE, Piscataway, NJ, 2003).
389. L.-S. Yan, M.C. Hauer, P. Ebrahimi, Y. Wang, A.E. Willner, Y.Q. Shi, X.S. Yao, and W.L. Kath, "Measurement of Q Degradation due to PMD using Importance Sampling," **Conference on Lasers and Electro-Optics (CLEO)**, Paper CThJ6, Baltimore, MD, June 2003 (Optical Society of America, Wash., D.C., 2003).
390. S.M.R. Motaghian Nezam, T. Luo, and A.E. Willner, "Chromatic Dispersion Monitoring for CSRZ Data using a Chromatic-Dispersion-Biased Clock," **Conference on Lasers and Electro-Optics (CLEO)**, Paper CThJ5, Baltimore, MD, June 2003 (Optical Society of America, Wash., D.C., 2003).
391. Y.W. Song, Z. Pan, Y. Arieli, S.M.R. Motaghian, S.A. Havstad, and A.E. Willner, "Enhanced Suppression of Nonlinearity-Induced Crosstalk in WDM Systems using Optical Polarization-Shift-Keying," **Conference on Lasers and Electro-Optics (CLEO)**, Paper CThQ2, Baltimore, MD, June 2003 (Optical Society of America, Wash., D.C., 2003).

**REFEREED PROCEEDINGS: (CONTINUED)**

392. T. Luo, L.-S. Yan, Y.Q. Shi, Z. Pan, Y.W. Song, A.E. Willner, and S. Yao, "Dynamically Tunable Wavelength Spacing Multi-Wavelength Ring Laser using a Programmable DGD Module as the Intra-Cavity Filter," **Conference on Lasers and Electro-Optics (CLEO)**, Paper CMY1, Baltimore, MD, June 2003 (Optical Society of America, Wash., D.C., 2003).
393. I.T. Lima, Jr., L.-S. Yan, B.S. Marks, C.R. Menyuk, and A.E. Willner, "Experimental Verification of the Penalty Produced by Polarization Effects in Fiber Recirculating Loops," **Conference on Lasers and Electro-Optics (CLEO)**, Paper CThD2, Baltimore, MD, June 2003 (Optical Society of America, Wash., D.C., 2003).
394. J.E. McGeehan, S. Kumar, D. Gurkan, J. Bannister, J. Touch, and A. E. Willner, "Optical Time-to-Live Decrementing and Subsequent Dropping of an Optical Packet," **Conference on Optical Fiber Communications (OFC) '03**, Paper FS6, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
395. L.-S. Yan, M.C. Hauer, Y.Q. Shi, X. Steve Yao, A.E. Willner, and W.L. Kath, "Experimental Importance Sampling using a 3-Section PMD Emulator with Programmable DGD Elements," **Conference on Optical Fiber Communications (OFC) '03**, Paper TuA4, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
396. Z. Pan, Y. Wang, Y.W. Song, S.M.R. Motaghian, S. Havstad, and A. E. Willner, "Monitoring Chromatic Dispersion and PMD Impairments in Optical Differential Phase-Shift-Keyed (DPSK) Systems," **Conference on Optical Fiber Communications (OFC) '03**, Paper WP1, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
397. T. Luo, Z. Pan, S.M.R. Motaghian Nezam, L.S. Yan, A. Sahin and A.E. Willner, "Chromatic-Dispersion-Insensitive PMD Monitoring using Optical Off-Center Bandpass Filtering," **Conference on Optical Fiber Communications (OFC) '03**, Paper ThY3, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
398. S.M.R. Motaghian Nezam, J.E. McGeehan, and A.E. Willner, "Dependence of DOP-Based DGD Monitors on the Optical Power Spectrum of Equal-Pulse-Width Data Formats," **Conference on Optical Fiber Communications (OFC) '03**, Paper MF91, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
399. S.M.R. Motaghian Nezam, A.B. Sahin, J. E. McGeehan, Z. Pan, T. Luo, Y.W. Song, and A.E. Willner, "Polarization State Rotation Filtering for Single Sideband Generation and Carrier Suppression using a Variable DGD Element," **Conference on Optical Fiber Communications (OFC) '03**, Paper FM7, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
400. D. Gurkan, S. Kumar, A.B. Sahin, A. Willner, K. Parameswaran, M. Fejer, D. Starodubov, J. Bannister, P. Kamath, J. Touch, "All-Optical Wavelength and Time 2-D Code Converter for Dynamically-Reconfigurable O-CDMA Networks using a PPLN Waveguide," **Conference on Optical Fiber Communications (OFC) '03**, Paper FD6, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
401. S.M.R. Motaghian Nezam, J.E. McGeehan, and A.E. Willner, "DOP-Based PMD Monitoring in Optical Subcarrier Multiplexed Systems by Carrier/Sideband Equalization," **Conference on Optical Fiber Communications (OFC) '03**, Paper ThY4, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
402. S.M.R. Motaghian Nezam, J.E. McGeehan, and A.E. Willner, "Measuring Component DGD by using Polarized ASE Noise and Monitoring the Degree of Polarization," accepted to the **Conference on Optical**

**REFEREED PROCEEDINGS: (CONTINUED)**

- Fiber Communications** (OFC) '03, Paper TuK2, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
403. A.B. Sahin, P. Saghari, L-S. Yan, D. Gurkan, and A.E. Willner, "Bias-Induced Diversity-Detection (BIDD) Technique for Robust Transmission of Subcarrier-Multiplexed Channels," **Conference on Optical Fiber Communications** (OFC) '03, Paper FD3, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
404. L.-S. Yan, M.C. Hauer, C. Yeh, G. Yang, L. Lin, Z. Chen, Y. Q. Shi, X. Steve Yao, A.E. Willner, and W.L. Kath, "High-Speed, Stable and Repeatable PMD Emulator with Tunable Statistics," **Conference on Optical Fiber Communications** (OFC) '03, Paper MF6, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
405. C. Yu, Z. Pan, Y. Wang, Y.W. Song, D. Gurkan, M.C. Hauer, D. Starodubov, and A.E. Willner, "Polarization-Insensitive Four-Wave Mixing Wavelength Conversion using a Fiber Bragg Grating and a Faraday Rotator Mirror," **Conference on Optical Fiber Communications** (OFC) '03, Paper WG2, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
406. L.-S. Yan, Y. Shi, and A.E. Willner, "Chirp Measurement of Electro-Optic Modulators using Simple Optical Spectrum Analysis," **Conference on Optical Fiber Communications** (OFC) '03, Paper MF58, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
407. Y. Wang, Z. Pan, A.B. Sahin, L.-S. Yan, C. Yu, and A. E. Willner, "In-line Chromatic Dispersion Monitoring using Optically-Added Phase-Modulated In-band Tones for a 10 Gb/s System," **Conference on Optical Fiber Communications** (OFC) '03, Paper WP3, Atlanta, GA, March 2003 (Optical Society of America, Washington, D.C., 2003).
408. D. Gurkan, S. Kumar, A.E. Willner, K.R. Parameswaran, and M.M. Fejer, "Simultaneous and Independent Label Swapping of Multiple WDM Channels in an All-Optical Packet-Switched Network using PPLN Waveguides as Wavelength Converters," **European Conference on Optical Communications (ECOC)**, paper 5.5.7, Copenhagen, Sept. 2002.
409. Y.W. Song, Z. Pan, C. Yu, Y. Wang, J.E. Rothenberg, J. Popelek, H. Li, Y. Li, and A.E. Willner, "Error-Free Tunable Dispersion Slope Compensation for 40-Gb/s WDM Systems using Non-Channelized 3rd-Order Chirped Fiber Bragg Gratings," **European Conference on Optical Communications (ECOC)**, paper 6.1.2, Copenhagen, Sept. 2002.
410. L.-S. Yan, S.M.R. Motaghian Nezam, A.B. Sahin, J.E. McGeehan, T. Luo, Q. Yu, and A.E. Willner, "Enhanced Robustness of RZ WDM Systems using Tunable Pulse-Width Management at the Transmitter," **European Conference on Optical Communications (ECOC)**, paper 10.6.2, Copenhagen, Sept. 2002.
411. L.-S. Yan, Q. Yu, and A.E. Willner, "Simple Measurement of the Chirp Parameter of Optical Modulators using Partial Optical Filtering," **European Conference on Optical Communications (ECOC)**, paper P2.28, Copenhagen, Sept. 2002.
412. Z. Pan, Y. -W. Song, C. Yu, Y. Wang, J. Popelek, H. Li, Y. Li, and A. E. Willner, "Tunable Chromatic Dispersion Compensation in a 4x40-Gbit/s System using Sampled Nonlinearly-Chirped Fiber Bragg Gratings (NC-FBGs)," **European Conference on Optical Communications (ECOC)**, paper 10.3.2, Copenhagen, Sept. 2002.
413. L.-S. Yan, Q. Yu, and A.E. Willner, "Periodic Polarization Scrambling with Uniformly Distributed SOPs on the Poincarè Sphere," **European Conference on Optical Communications (ECOC)**, paper P3.06, Copenhagen, Sept. 2002.

**REFEREED PROCEEDINGS: (CONTINUED)**

414. L.-S. Yan, Q. Yu, T. Luo, and A.E. Willner, "Deleterious Systems Effects due to Polarization Scrambling in the Presence of Polarization Dependent Loss," **IEEE Lasers and Electro-Optics Society Summer Topical Meeting on Dynamic Enablers of Next-Generation Optical Communications Systems**, Proceedings, paper TuB2, Quebec City, Canada, July 15-17 (IEEE, Piscataway, NJ, 2002).
415. S.M.R. Motaghian Nezam, L.-S. Yan, J. McGeehan, Y.Q. Shi, A.E. Willner, S. Yao, "Wide-Dynamic-Range DGD Monitoring by Partial Optical Signal Spectrum DOP Measurement," **Conference on Optical Fiber Communications (OFC) '02**, Post-Deadline Paper PD-28, Anaheim, CA, March 2002 (Optical Society of America, Washington, D.C., 2002).
416. C.H. Lin, E.R. Lyons, A. Au, R. Zaouk, A. Shkel, H.P. Lee, M.C. Hauer, Q. Yu, A.E. Willner, "Design and Fabrication of Thin-Film Microheater Tuned Fiber Array Device," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThO27, Long Beach, CA, May 2002 (Optical Society of America, Wash., D.C., 2002).
417. Z. Pan, Q. Yu, Y. Arieli, and A.E. Willner, "Fast XPM-Induced Polarization-State Fluctuations in WDM Systems and Their Mitigation," **Conference on Optical Fiber Communications (OFC) '02**, paper ThA7, Anaheim, CA, March 2002 (Optical Society of America, Washington, D.C., 2002).
418. M.C. Hauer, Q. Yu, E.R. Lyons, C.H. Lin, A.A. Au, H.P. Lee, and A.E. Willner, "Compact, All-Fiber PMD Emulator using an Integrated Series of Thin-Film Micro-Heaters," **Conference on Optical Fiber Communications (OFC) '02**, paper ThA3, Anaheim, CA, March 2002 (Optical Society of America, Washington, D.C., 2002).
419. M.C. Hauer, J. McGeehan, J. Touch, P. Kamath, J. Bannister, E.R. Lyons, C.H. Lin, A.A. Au, H.P. Lee, D.S. Starodubov, and A.E. Willner, "Dynamically Reconfigurable All-Optical Correlators to Support Ultrafast Internet Routing," **Conference on Optical Fiber Communications (OFC) '02**, paper WM7, Anaheim, CA, March 2002 (Optical Society of America, Washington, D.C., 2002).
420. J. McGeehan, M.C. Hauer, A.B. Sahin, and A.E. Willner, "Reconfigurable Multi-Wavelength Optical Correlator for Header-Based Switching and Routing," **Conference on Optical Fiber Communications (OFC) '02**, paper WM4, Anaheim, CA, March 2002 (Optical Society of America, Washington, D.C., 2002).
421. A.B. Sahin and A.E. Willner, "Dispersion Division Multiplexing for In-Band Subcarrier-Header-Based All-Optical Packet Switching," **Conference on Optical Fiber Communications (OFC) '02**, paper WO1, Anaheim, CA, March 2002 (Optical Society of America, Washington, D.C., 2002).
422. S. M. R. Motaghian Nezam, Y.W. Song, A.B. Sahin, Z. Pan, and A.E. Willner, "PMD Monitoring in WDM Systems for NRZ Data using a Chromatic-Dispersion-Regenerated Clock," **Conference on Optical Fiber Communications (OFC) '02**, paper WE5, Anaheim, CA, March 2002 (Optical Society of America, Washington, D.C., 2002).
423. Y.W. Song, S.M.R. Motaghian, D. Starodubov, J.E. Rothenberg, Z. Pan, H. Li, R. Wilcox, J. Popelek, R. Caldwell, V. Grubsky, and A.E. Willner, "Tunable Dispersion Slope Compensation for WDM Systems using a Single Non-Channelized Third-Order-Chirped FBG," **Conference on Optical Fiber Communications (OFC) '02**, paper ThAA4, Anaheim, CA, March 2002 (Optical Society of America, Washington, D.C., 2002).
424. L.-S. Yan, Q. Yu, T. Luo, A.E. Willner, and S. Yao, "Higher-Order PMD Compensation using a Polarization Controller and Phase Modulator in the Transmitter," **Conference on Optical Fiber Communications (OFC) '02**, paper WQ1, Anaheim, CA, March 2002 (Optical Society of America, Washington, D.C., 2002).

**REFEREED PROCEEDINGS: (CONTINUED)**

425. Z. Pan, Q. Yu, Y.W. Song, and A.E. Willner, "40-Gbit/s RZ 120-km Transmission using a Nonlinearly-Chirped Fiber Bragg Grating (NL-FBG) for Tunable Dispersion Compensation," **Conference on Optical Fiber Communications (OFC) '02**, paper WV7, Anaheim, CA, March 2002 (Optical Society of America, Washington, D.C., 2002).
426. C.Y. Yu, Q. Yu, Z. Pan, A.B. Sahin, and A.E. Willner, "Optical Compensation of PMD-Induced Power Fading for Single-Sideband Subcarrier-Multiplexed Systems," **Conference on Optical Fiber Communications (OFC) '02**, paper WQ5, Anaheim, CA, March 2002 (Optical Society of America, Washington, D.C., 2002).
427. L.-S. Yan, T. Luo, Q. Yu, Y. Xie, K.-M. Feng, R. Khosravani, A.E. Willner, and J. Rothenberg, "System Impact of Group-Delay Ripple in Single and Cascaded Chirped FBGs," **Conference on Optical Fiber Communications (OFC) '02**, paper ThGG63, Anaheim, CA, March 2002 (Optical Society of America, Washington, D.C., 2002).
428. L.-S. Yan, Q. Yu, and A. E. Willner, "Demonstration of In-Line Monitoring and Dynamic Broadband Compensation of Polarization Dependent Loss," **European Conference on Optical Communications (ECOC)**, paper We.P.38, Amsterdam, Oct. 2001.
429. A.B. Sahin, L. -S. Yan, Q. Yu, M. Hauer, Z. Pan, and A.E. Willner, "Dynamic Dispersion Slope Monitoring of Many WDM Channels using Dispersion-Induced RF Clock Regeneration," **European Conference on Optical Communications (ECOC)**, paper We.P.35, Amsterdam, Oct. 2001.
430. L.-S. Yan, Q. Yu, A.B. Sahin, Y. Wang, and A.E. Willner, "Simple Bit-Rate-Independent PMD Monitoring for WDM Systems," **European Conference on Optical Communications (ECOC)**, paper Tu.A.3.2, Amsterdam, Oct. 2001.
431. Z. Pan, Y. Wang, C. Yu, T. Luo, A.B. Sahin, Q. Yu, and A.E. Willner, "Intra-Bit Polarization Diversity Modulation for PMD Mitigation," **European Conference on Optical Communications (ECOC)**, paper We.P.37, Amsterdam, Oct. 2001.
432. A.E. Willner and J.E. Rothenberg, "Nonlinearly-Chirped FBG for Tunable Chromatic Dispersion Compensation of Multiple WDM Channels," **National Fiber Optics Engineers Conference (NFOEC)**, Technical Digest, paper 347, Baltimore, MD, July, 2001.
433. P. Ebrahimi, M. C. Hauer, Q. Yu, R. Khosravani, D. Gurkan, D.W. Kim, D. W. Lee, and A. E. Willner, "Statistics of Polarization Dependant Gain in Raman Fiber Amplifiers due to PMD," **Conference on Lasers and Electro-Optics (CLEO)**, paper CTuJ1, Baltimore, MD, May 2001 (Optical Society of America, Wash., D.C., 2001).
434. Q. Yu, L.-S. Yan, and A.E. Willner, "10-Gb/s PMD Compensation Following a Recirculating Fiber Loop," **Conference on Lasers and Electro-Optics (CLEO)**, paper CFE5, Baltimore, MD, May 2001 (Optical Society of America, Wash., D.C., 2001).
435. S.M.R. Motaghian Nezam, Y. Wang, M. Hauer, S. Lee, and A. E. Willner, "Simultaneous PMD Monitoring of Several WDM Channels using Subcarrier Tones," **Conference on Lasers and Electro-Optics (CLEO)**, paper CFE1, Baltimore, MD, May 2001 (Optical Society of America, Wash., D.C., 2001).
436. Y.W. Song, D. Starodubov, Z. Pan, Y. Xie, A. E. Willner, and J. Feinberg, "A Tunable Dispersion Compensator with Fixed Bandwidth for WDM Systems using a Uniform FBG," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThO1, Baltimore, MD, May 2001 (Optical Society of America, Wash., D.C., 2001).

**REFEREED PROCEEDINGS: (CONTINUED)**

437. D. Gurkan, M. I. Hayee, and A.E. Willner, "Transient Behavior of L-band and C-band EDFAs in an Add/Drop Multiplexed 40-Channel WDM Network," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThH5, Baltimore, MD, May 2001 (Optical Society of America, Wash., D.C., 2001).
438. M.C. Cardakli, A.B. Sahin, O.A. Adamczyk, A.E. Willner, K.R. Parameswaran, and M.M. Fejer, "All-Optical Wavelength Shifting of Subcarrier Channels using Difference-Frequency-Generation in a PPLN," **Conference on Lasers and Electro-Optics (CLEO)**, paper CThB2, Baltimore, MD, May 2001 (Optical Society of America, Wash., D.C., 2001).
439. Z. Pan, Q. Yu, Y. Xie, Y.W. Song, and A. E. Willner, "Clock Regenerating Effect for NRZ Data due to Higher-Order Polarization-Mode-Dispersion," **Conference on Lasers and Electro-Optics (CLEO)**, paper CFE2, Baltimore, MD, May 2001 (Optical Society of America, Wash., D.C., 2001).
440. R. Khosravani, Y. Xie, L.-S. Yan, Y.W. Song, A.E. Willner, and C.R. Menyuk "Limitations to First-Order PMD Compensation in WDM Systems Due to XPM-Induced PSP Changes," **Conference on Optical Fiber Communications '01**, paper WAA5, Anaheim, CA, March 2001 (Optical Society of America, Washington, D.C., 2001).
441. Q. Yu, S. Lee, L. Yan, Y. Xie, O.H. Adamczyk, and A.E. Willner "A Short Recirculating Fiber Loop Testbed with Accurate Reproduction of Maxwellian PMD Statistics," **Conference on Optical Fiber Communications '01**, paper WT2, Anaheim, CA, March 2001 (Optical Society of America, Washington, D.C., 2001).
442. L.-S. Yan, Y. Xie, Q. Yu, A. E. Willner, D. S. Starodubov, and J. Feinberg "Performance Optimization of Chirped Return-to-Zero Format in 10-Gb/s Terrestrial Transmission Systems," **Conference on Optical Fiber Communications '01**, paper MF1, Anaheim, CA, March 2001 (Optical Society of America, Washington, D.C., 2001).
443. Z. Pan, Q. Yu, Y. Xie, S.A. Havstad, A.E. Willner, D.S. Starodubov, and J. Feinberg, "Chromatic Dispersion Monitoring and Automated Compensation for NRZ and RZ Data using Clock Regeneration and Fading Without Adding Signaling," **Conference on Optical Fiber Communications '01**, paper WH5, Anaheim, CA, March 2001 (Optical Society of America, Washington, D.C., 2001).
444. Y. Xie , Q. Yu, L. Yan, O.H. Adamczyk, Z. Pan, S. Lee, A.E. Willner, and C.R. Menyuk "Enhanced PMD Mitigation using Forward-Error-Correction Coding and a First-Order Compensator," **Conference on Optical Fiber Communications '01**, paper WAA2, Anaheim, CA, March 2001 (Optical Society of America, Washington, D.C., 2001).
445. M. C. Cardakli and A. E. Willner "Optical Packet and Bit Synchronization of a Switching Node using FBG Optical Correlators," **Conference on Optical Fiber Communications '01**, paper TuW2, Anaheim, CA, March 2001 (Optical Society of America, Washington, D.C., 2001).
446. L.-S. Yan, Q. Yu, Y. Xie, and A. E. Willner "Statistical Measurement of the Combined Effect of PMD and PDL using a 10-Gb/s Recirculating Loop Testbed," **Conference on Optical Fiber Communications '01**, paper WT5, Anaheim, CA, March 2001 (Optical Society of America, Washington, D.C., 2001).
447. Q. Yu and A. E. Willner "Comparison of Optical PMD Compensation using a Variable and Fixed Differential Group Delays," **Conference on Optical Fiber Communications '01**, paper MO2, Anaheim, CA, March 2001 (Optical Society of America, Washington, D.C., 2001).
448. M.N. Petersen, Z. Pan, S. Lee, S.A. Havstad, and A.E. Willner "Dispersion Monitoring and Compensation using a Single In-Band Subcarrier Tone," **Conference on Optical Fiber Communications '01**, paper WH4, Anaheim, CA, March 2001 (Optical Society of America, Washington, D.C., 2001).

**REFEREED PROCEEDINGS: (CONTINUED)**

449. A.B. Sahin, O.H. Adamczyk, and A.E. Willner, "Dispersion Division Multiplexing Technique for Doubling the Spectral Efficiency of Subcarrier Multiplexed Data Transmission over Fiber Optical Links," **Conference on Optical Fiber Communications '01**, paper WCC4, Anaheim, CA, March 2001 (Optical Society of America, Washington, D.C., 2001).
450. O.H. Adamczyk, A.B. Sahin, Q. Yu, S. Lee, and A.E. Willner, "Statistics of PMD-Induced Power Fading for Double Sideband and Single Sideband Subcarrier-Multiplexed Signals," **Conference on Optical Fiber Communications '01**, paper MO5, Anaheim, CA, March 2001 (Optical Society of America, Washington, D.C., 2001).
451. R. Khosravani, S.A. Havstad, Y.W. Song, P. Ebrahimi, and A.E. Willner, "Simultaneous PMD Compensation of Multiple WDM Channels using a Single Compensator," **European Conference on Optical Communications**, paper 4.2.6, Munich, Germany, Sept. 2000.
452. S. Lee, Y. Xie, O. H. Adamczyk, and A. E. Willner, "Penalty Distribution Comparison for Different Data Formats under High PMD Values," **European Conference on Optical Communications**, paper 5.2.2, Munich, Germany, Sept. 2000.
453. Q. Yu, L.-S. Yan, S. Lee, Y. Xie, M. Hauer, Z. Pan, and A.E. Willner, "Enhanced Higher-Order PMD Compensation using a Variable Time Delay Between Polarizations," **European Conference on Optical Communications**, paper 4.2.7, Munich, Germany, Sept. 2000.
454. M.C. Cardakli, D. Gurkan, S.A. Havstad, A.E. Willner, K.R. Parameswaran, M.M. Fejer, and I. Brenner, "All-Optical Time-Slot-Interchange and Wavelength Conversion using Difference-Frequency-Generation and FBGs," **Conference on Optical Fiber Communications '00, Post-Deadline paper PD-34**, Balt., Md, Feb. 2000 (Optical Society of America, Washington, D.C., 2000).
455. Y.W. Song, S.A. Havstad, D. Starodubov, Y. Xie, A.E. Willner, and J. Feinberg, "A Single-Mode Erbium-Doped Fiber Ring Laser with 40-nm Tuning Range using a Stretchable FBG," **OSA Optical Amplifiers Meeting**, paper OTuD5, Quebec City (Optical Society of America, Washington, D.C., 2000).
456. Y. Xie, Z. Pan, A.E. Willner, E. Salik, V. Grubsky, D. Starodubov, and J. Feinberg, "Spectrally-Efficient L-C Band EDFA Having a Continuous Inter-Band Channel Region using Sampled FBGs" **Conference on Lasers and Electro-Optics (CLEO)**, paper CWJ4, San Francisco, May 2000 (Optical Society of America, Wash., D.C., 2000).
457. Y.W. Song, Z. Pan, D. Starodubov, V. Grubsky, E. Salik, S.A. Havstad, Y. Xie, A. E. Willner, and J. Feinberg, "Efficient WDM Optical Crossconnect using Widely-Tunable FBGs," **Conference on Lasers and Electro-Optics (CLEO)**, paper CWD6, San Francisco, May 2000 (Optical Society of America, Wash., D.C., 2000).
458. S. A. Havstad, Y. Xie, A. B. Sahin, Z. Pan, A. E. Willner, and B. Fischer, "Delayed Self-Heterodyne Interferometer Measurements of Narrow Linewidth Fiber Lasers," **Conference on Lasers and Electro-Optics (CLEO)**, paper CWK30, San Francisco, May 2000 (Optical Society of America, Wash., D.C., 2000).
459. R. Khosravani and A. E. Willner, "Comparison of different modulation formats in terrestrial systems with high polarization mode dispersion," **Conference on Optical Fiber Communications '00**, paper WL5, Balt., Md, Feb. 2000 (Optical Society of America, Washington, D.C., 2000).
460. I.T. Lima, Jr., R. Khosravani, P. Ebrahimi, E. Ibragimov, A.E. Willner, and C.R. Menyuk, "Polarization Mode Dispersion Emulator," **Conference on Optical Fiber Communications '00**, paper ThB4, Balt., Md, Feb. 2000 (Optical Society of America, Washington, D.C., 2000).

**REFEREED PROCEEDINGS: (CONTINUED)**

461. S. Lee and A.E. Willner, "All-optical remote location of high polarization mode dispersion fiber spans using stimulated Brillouin Scattering," **Conference on Optical Fiber Communications '00**, paper TuG2, Balt., Md, Feb. 2000 (Optical Society of America, Washington, D.C., 2000).
462. Y. Xie, S. Lee, Z. Pan, J.-X. Cai, and A.E. Willner, "Tunable Compensation of the Dispersion Slope Mismatch in Dispersion-Managed Systems using a Sampled Nonlinearly-Chirped FBG," **Conference on Optical Fiber Communications '00**, paper ThS2, Balt., Md, Feb. 2000 (Optical Society of America, Washington, D.C., 2000).
463. Z.-Q. Pan, Y. Xie, S. Lee, and A.E. Willner, "Chirp-free tunable PMD compensation using Hi-Bi nonlinearly-chirped FBGs in a dual-pass configuration," **Conference on Optical Fiber Communications '00**, paper ThH2, Balt., Md, Feb. 2000 (Optical Society of America, Washington, D.C., 2000).
464. M.C. Cardakli, D. Gurkan, S.A. Havstad, and A.E. Willner, "Variable-Bit-Rate Header Recognition for Reconfigurable Networks using Fiber-Bragg-Grating Tunable Optical Correlators," **Conference on Optical Fiber Communications '00**, paper TuN2, Balt., Md, Feb. 2000 (Optical Society of America, Washington, D.C., 2000).
465. S.A. Havstad, A.B. Sahin, O.H. Adamczyk, Y. Xie, and A.E. Willner, "Distance-Independent RF Fading Compensation using a Tunable Nonlinearly-Chirped FBG in a Phase Diversity Configuration," **Conference on Optical Fiber Communications '00**, paper WM38, Balt., Md, Feb. 2000 (Optical Society of America, Washington, D.C., 2000).
466. O.H. Adamczyk, S.A. Havstad, A.B. Sahin, M.C. Cardakli, S. Lee, and A.E. Willner, "All-Optical Output-Port Contention Resolution using Subcarrier-Multiplexing," **Conference on Optical Fiber Communications '00**, paper WM41, Balt., Md, Feb. 2000 (Optical Society of America, Washington, D.C., 2000).
467. O.H. Adamczyk, M.C. Cardakli, J.-X. Cai, M.I. Hayee, C. Kim, and A.E. Willner, "Coarse and Fine Bit Synchronization for WDM Interconnections using Two Subcarrier-Multiplexed Control Pilot Tones," **Conference on Lasers and Electro-Optics (CLEO)**, CTuT1, Baltimore, Md., May 1999 (Optical Society of America, Wash., D.C., 1999).
468. H. Sun, J.-X. Cai, K.-M. Feng, H. Long, M. Cardakli, M.I. Hayee, and A.E. Willner, "Tunable Compensation of Dispersion-Induced RF Power Degradation in Multiple-Channel SCM Transmission by nonlinearly-chirped FBGs," **Conference on Lasers and Electro-Optics (CLEO)**, paper CWK2, Baltimore, Md., May 1999 (Optical Society of America, Wash., D.C., 1999).
469. J. Bannister, J. Touch, A.E. Willner, and S. Suryaputra, "How Many Wavelengths Do We Really Need in an Internet Optical Backbone?," in **Protocols for High-Speed Networks VI**, ed. J. Touch and J. Sterbenz, Kluwer, 1999, ISBN 0-7923-8690-6 pp. 43-60 (sponsored by IFIP and IEEE).
470. S. Lee, R. Khosravani, J. Peng, and A.E. Willner, V. Grubsky, D.S. Starodubov, and J. Feinberg, "High-Birefringence Nonlinearly-Chirped Fiber Bragg Grating for Tunable Compensation of Polarization Mode Dispersion," **Conference on Optical Fiber Communications '99**, paper TuS3, San Diego, CA, Feb. 1999 (Optical Society of America, Washington, D.C., 1999).
471. J.-X. Cai, K.-M. Feng, A.E. Willner, V. Grubsky, D.S. Starodubov, and J. Feinberg, "Sampled Nonlinearly-Chirped Fiber-Bragg-Grating for the Tunable Dispersion Compensation of Many WDM Channels Simultaneously," **Conference on Optical Fiber Communications '99**, paper FA7, San Diego, CA, Feb. 1999 (Optical Society of America, Washington, D.C., 1999).
472. M.I. Hayee and A.E. Willner, "Fiber Transmission Penalties due to EDFA Power Transients Resulting from Fiber Nonlinearity and ASE Noise in Add/Drop Multiplexed WDM Networks," **Conference on Optical**



**REFEREED PROCEEDINGS: (CONTINUED)**

- Fiber Communications '99**, paper ThU2, San Diego, CA, Feb. 1999 (Optical Society of America, Washington, D.C., 1999).
473. R. Khosravani, S. Lee, M.I. Hayee, and A.E. Willner, "Soliton Sampling for Subcarrier-Multiplexed Transmission to Eliminate Dispersion-Induced RF Power Degradation," **Conference on Optical Fiber Communications '99**, paper ThW4, San Diego, CA, Feb. 1999 (Optical Society of America, Washington, D.C., 1999).
474. X. Jiang, M. Cardakli, K.-M. Feng J.-X. Cai, A.E. Willner, V. Grubsky, D.S. Starodubov, and J. Feinberg, "Control Monitoring of Routing Bits and Data Packets in WDM Networks using Wavelength-to-Time Mapping," **Conference on Optical Fiber Communications '99**, paper TuJ7, San Diego, CA, Feb. 1999 (Optical Society of America, Washington, D.C., 1999).
475. M.C. Cardakli, S. Lee, A.E. Willner, V. Grubsky, D. Starodubov, and J. Feinberg, "All-Optical Packet Header Recognition and Switching in a Reconfigurable Network using Fiber Bragg Gratings for Time-to-Wavelength Mapping and Decoding," **Conference on Optical Fiber Communications '99**, paper ThM4, San Diego, CA, Feb. 1999 (Optical Society of America, Washington D.C., 1999).
476. S.A. Havstad, B. Fischer, A.E. Willner, and M.G. Wickham, "Dynamic Fiber Loop-Mirror-Filter (LMF) Based on Pump-Induced Saturable Gain or Absorber Gratings," **Conference on Optical Fiber Communications '99**, paper ThA4, San Diego, CA, Feb. 1999 (Optical Society of America, Washington, D.C., 1999).
477. Joe Bannister, Joe Touch, Alan Willner, and Stephen Suryaputra, "How Many Wavelengths Do We Really Need in an Optical Backbone Network?," **IEEE Gigabit Networking Workshop '99**, New York, NY.
478. D.S. Starodubov, V. Grubsky, A. Skorucak, J. Feinberg, K.-M. Feng, J.-X. Cai, and A.E. Willner, "Novel Fiber Amplitude Modulators in Dynamic Channel Power Equalization in WDM Systems," **Conference on Optical Fiber Communications '98, Post-Deadline Session**, paper PD-8, San Jose, CA, Feb. 1998 (Optical Society of America, Washington, D.C., 1998).
479. J. Yoo, J.E. Leight, C. Kim, G. Giarretta, W. Yuen, and A.E. Willner, "Experimental Demonstration of a Multihop Shuffle Network using 622-Mbps Data Relay in a WDM Multiple-Plane Optical Interconnection With VCSEL and MQW/DBR Detector Arrays," **Conference on Lasers and Electro-Optics, Post-Deadline Session**, paper CPD-21, Baltimore, MD, May 1997 (Optical Society of America, Wash., D.C., 1997).
480. J.-X. Cai, K.-M. Feng, A.E. Willner, V. Grubsky, D.S. Starodubov, and J. Feinberg, "Dynamic Dispersion Compensation in a 10-Gb/s Optical System using a Novel Nonlinearly-Chirped Fiber Bragg Grating," **Conference on Optical Fiber Communications '98**, San Jose, CA, Feb. 1998 (Optical Society of America, Washington, D.C., 1998).
481. X. Jiang, X.P. Chen, and A.E. Willner, "Wavelength Independent Packet Header Replacement using a Long CW Region Generated Directly from the Packet Flag," **Conference on Optical Fiber Communications '98**, San Jose, CA, Feb. 1998 (Optical Society of America, Washington, D.C., 1998).
482. M.I. Hayee and A. E. Willner, "NRZ vs. RZ in 10-40 Gb/s Dispersion-Managed WDM Transmission Systems," **Conference on Optical Fiber Communications '98**, San Jose, CA, Feb. 1998 (Optical Society of America, Washington D.C., 1998).
483. K.-M. Feng, V. Grubsky, D.S. Starodubov, J.-X. Cai, A.E. Willner, and J. Feinberg, "Tunable Nonlinearly-Chirped Fiber Bragg Grating for use as a Dispersion Compensator with a Voltage-Controlled Dispersion," **Conference on Optical Fiber Communications '98**, San Jose, CA, Feb. 1998 (Optical Society of America, Washington D.C., 1998).

**REFEREED PROCEEDINGS: (CONTINUED)**

484. T. Sangsiri, S. Havstad, C. Kim, X. Jiang, B. Hoanca, and A.E. Willner, "Bit Synchronization using Subcarriers for Control Signaling in Optical Networks," **Conference on Optical Fiber Communications '98**, San Jose, CA, Feb. 1998 (Optical Society of America, Washington D.C., 1998).
485. J. Touch, J. Bannister, and A.E. Willner, "SWIFT: Smart WDM IP Flow Technology," **IEEE Gigabit Networking Workshop GBN '98**, San Francisco, CA, Mar. 1998.
486. J.X. Cai, K.-M. Feng, and A.E. Willner, "Simultaneous Compensation of Fast Add/Drop Power-Transients and Equalization of Inter-Channel Power Differentials for Robust WDM Systems with Cascaded EDFAs," Topical Meeting on **Optical Amplifiers and Their Applications**, paper MC6, Victoria, Canada, July (Optical Society of America, Washington, D.C., 1997).
487. X.P. Chen, B. Hoanca, K.-M. Feng, J.-X. Cai, and A.E. Willner, "Experimental Demonstration of Fast Simultaneous Wavelength Switching and Time Demultiplexing using a Nonlinear Optical Loop Mirror," **Conference on Lasers and Electro-Optics**, paper CTHP2, Baltimore, MD, May 1997 (Optical Society of America, Wash., D.C., 1997).
488. S. Schröder, R. Teschendorf, and A. E. Willner, "Contention Resolution of High-Speed WDM Packets using a Dynamically- Controlled Multiple-Wavelength Fiber Loop Buffer and Wavelength Shifting," **Conference on Lasers and Electro-Optics**, paper CFI2, Baltimore, MD, May 1997 (Optical Society of America, Wash., D.C., 1997).
489. J. Yoo, J.E. Leight, G. Giaretta, W. Yuen, A.E. Willner, and C.J. Chang-Hasnain, "Experimental Demonstration of a 4-Plane 2-D Multiple-Wavelength Optical Interconnection using Integrated VCSEL Arrays And MQW/DBR Detectors," **Conference on Lasers and Electro-Optics**, paper CME4, Baltimore, MD, May 1997 (Optical Society of America, Wash., D.C., 1997).
490. M.I. Hayee and A.E. Willner, "Effects of Randomness of Dispersion-Zero Wavelength and Relative Channel Location in High-Speed WDM Systems," **Conference on Lasers and Electro-Optics**, paper CTHV6, Baltimore, MD, May 1997 (Optical Society of America, Wash., D.C., 1997).
491. K.-M. Feng, J.-X. Cai, X. P. Chen, A. E. Willner, and D. A. Smith, "Experimental Demonstration of Dynamic High-Speed Equalization of Three Channels using Wavelength Demultiplexers and Acousto-Optic Modulators," **Conference on Optical Fiber Communications '97**, paper ThS4, Dallas, TX, Feb. 1997 (Optical Society of America, Washington D.C., 1997).
492. T. Sangsiri, M. I. Hayee, B. Hoanca, W. Shieh, and A. E. Willner, "Stability and Dynamic Range of a Mach-Zehnder Wavelength Shifter," **Conference on Optical Fiber Communications '97**, paper WL52, Dallas, TX, Feb. 1997 (Optical Society of America, Washington D.C., 1997).
493. J.-X. Cai, K.-M. Feng, X.-P. Chen, and A.E. Willner, "Equalization of Nonuniform EDFA Gain using a Fiber Loop Mirror," **Conference on Optical Fiber Communications '97**, paper WL34, Dallas, TX, Feb. 1997 (Optical Society of America, Washington D.C., 1997).
494. M. I. Hayee and A. E. Willner, "Pre-Compensation of Dispersion and Nonlinearities in 10 and 20 Gb/s WDM Systems," **Conference on Optical Fiber Communications '97**, paper WL39, Dallas, TX, Feb. 1997 (Optical Society of America, Washington D.C., 1997).
495. W. Shieh and A.E. Willner, "Demonstration of Output-Port Contention Resolution in a 2X2 WDM Switching Node Based on All-Optical Wavelength Shifting and Subcarrier-Multiplexed Routing-Control Headers," **Conference on Optical Fiber Communications '96, Post-Deadline paper PD-36**, San Jose, CA, Feb. 1996 (Optical Society of America, Washington D.C., 1996).

**REFEREED PROCEEDINGS: (CONTINUED)**

496. E. Park, D. Norte, and A.E. Willner, "Demonstration of Multiple-Wavelength-Input All-Optical Wavelength-Shifting Spatial and Temporal Techniques with Subcarrier-Multiplexed Control for Self-Routing," **Conference on Optical Fiber Communications '96, Post-Deadline paper PD-34**, San Jose, CA, Feb. 1996 (Optical Society of America, Washington D.C., 1996).
497. W. Shieh and A.E. Willner, "A Wavelength-Routing Node by using Multifunctional Semiconductor Optical Amplifiers and Multiple-Pilot-Tone-Coded Subcarrier Control Headers," **IEEE LEOS Summer Topical Meeting on Broadband Optical Networks**, paper MA5, Keystone, Colorado, Aug. (IEEE, Piscataway, New Jersey, 1996).
498. D. Norte and A.E. Willner, "Demonstrations of All-Optical Conversions Between the RZ and NRZ Data Formats Incorporating Noninverting Wavelength Shifting Leading to Format Transparency," **IEEE LEOS Summer Topical Meeting on Broadband Optical Networks**, paper MB5, Keystone, Colorado, Aug. (IEEE, Piscataway, New Jersey, 1996).
499. J.E. Leight, J. Yoo, and A.E. Willner, "Optical Crosstalk and Signal Power Limitations in Simultaneous 2-D Multiple-Plane WDM Optical Interconnects," **IEEE Lasers and Electro-Optics Society Annual Meeting**, Proceedings, paper TuY2, Nov. 1996, Boston, MA (IEEE/LEOS, Piscataway, NJ, 1996).
500. D.A. Smith, Z. Bao, M.L. Heston, A.E. Willner, S.H. Huang, X.Y. Zou, K. Youden, and K. Li, "Dynamic Power Equalization in WDM Networks using Acousto-Optic Filters," **Topical Meeting on Optical Amplifiers and Their Applications**, paper FA3, Monterey, CA, July (Optical Society of America, Washington D.C., 1996).
501. J.-C. Wu, J.A. Silvester, and A.E. Willner, "Optimal Schedules for WDM Networks using Pipelined Slow Tunable Devices," **Fifth International Conference on Computer Communications and Networks (IC<sup>3</sup>N)**, paper 76, October, Rockville, MD (IEEE, Piscataway, New Jersey, 1996).
502. S.H. Huang, X.Y. Zou, S.-M. Hwang, A.E. Willner, Z. Bao, and D.A. Smith, "Experimental Demonstration of Active Equalization and ASE Suppression of Three 2.5 Gbit/s WDM-Network Channels over 2,500 km using AOTFs as Transmission Filters," **Conference on Lasers and Electro-Optics**, paper CMA4, Anaheim, CA, June 1996 (Optical Society of America, Wash., D.C., 1996).
503. E. Park and A.E. Willner, "Survivability of QPSK-Encoded Subcarrier Signals in an All-Optical Wavelength-Shifting System," **Conference on Lasers and Electro-Optics**, paper CFG7, Anaheim, CA, June 1996 (Optical Society of America, Wash., D.C., 1996).
504. S.-M. Hwang, X.Y. Zou, S.H. Huang, W. Shieh, and A.E. Willner, "Passive Equalization of Four 2.5-Gbit/s WDM Channels over 1,000 km using Notch Filters," **Conference on Lasers and Electro-Optics**, paper CThC21, Anaheim, CA, June 1996 (Optical Society of America, Wash., D.C., 1996).
505. W. Shieh and A.E. Willner, "SNR Improvement of Four-Wave Mixing Wavelength Shifting by Noise Prefiltering in a Semiconductor Optical Amplifier," **Conference on Lasers and Electro-Optics**, paper CThB5, Anaheim, CA, June 1996 (Optical Society of America, Wash., D.C., 1996).
506. S.H. Huang, X.Y. Zou, S.-M. Hwang, A.E. Willner, Z. Bao, and D.A. Smith, "Experimental Demonstration of Dynamic Equalization of Three 2.5 Gbit/s WDM Channels over 1,000 km using Acousto-Optic Tunable Filters," **Conference on Optical Fiber Communications '96**, paper WM6, San Jose, CA, Feb. 1996 (Optical Society of America, Washington D.C., 1996).
507. E. Park and A.E. Willner, "Network Demonstration of Self-Routing Wavelength Packets using an All-Optical Wavelength Shifter and QPSK Subcarrier Routing Control," **Conference on Optical Fiber Communications '96**, paper WD6, San Jose, CA, Feb. 1996 (Optical Society of America, Washington D.C., 1996).

**REFEREED PROCEEDINGS: (CONTINUED)**

508. M.I. Hayee, X.Y. Zou and A.E. Willner, "Degradations Due to Both Dispersion and SPM/CPM on Dispersion-Managed WDM Long-Distance Systems," **Conference on Optical Fiber Communications '96**, paper TuN7, San Jose, CA, Feb. 1996 (Optical Society of America, Washington D.C., 1996).
509. W. Shieh, S.H. Huang, and A.E. Willner, "A Polarization-Independent and Contrast-Ratio-Enhancing Module for All-Optical Wavelength Shifting using SOA's," **Conference on Optical Fiber Communications '96**, paper WG5, San Jose, CA, Feb. 1996 (Optical Society of America, Washington D.C., 1996).
510. W. Shieh, E. Park and A.E. Willner, "All-Optical Wavelength Shifting of Microwave Subcarriers by using Four-Wave Mixing in a Semiconductor Optical Amplifier," **Conference on Optical Fiber Communications '96**, paper WH4, San Jose, CA, Feb. 1996 (Optical Society of America, Washington D.C., 1996).
511. D. Norte and A.E. Willner, "Demonstration of an All-Optical Data Format Transparent WDM-to-TDM Network Node With Extinction Ratio Enhancement for Reconfigurable WDM Networks," **Conference on Optical Fiber Communications '96**, paper WD5, San Jose, CA, Feb. 1996 (Optical Society of America, Washington D.C., 1996).
512. D. Norte and A.E. Willner, "Simultaneous Probe and Pump Extinction Ratio Enhancement Demonstration in All-Optical Noninverted Wavelength Shifting," **Conference on Optical Fiber Communications '96**, paper WM7, San Jose, CA, Feb. 1996 (Optical Society of America, Washington D.C., 1996).
513. M.L. Heston, D.A. Smith, Z. Bao, A. Khaydarov, A.E. Willner, S.-M. Hwang, S.H. Huang, and X.Y. Zou, "Use of the Acousto-Optic Tunable Filter for Optical Spectrum Analysis and EDFA Power Equalization in WDM Systems," **Conference on Optical Fiber Communications '96**, paper ThL3, San Jose, CA, Feb. 1996 (Optical Society of America, Washington D.C., 1996).
514. J.E. Leight, S. Homan, A.E. Willner, G. Giaretta, M. Li, and C.J. Chang-Hasnain, "Demonstration of a Reconfigurable Wavelength-Multiplexed Multiple-Plane Optical Interconnection," **Conf. on Lasers and Electro-Optics, Post-Deadline Session**, paper CPD6, Balt., Md., May 1995 (Optical Society of America, Wash., D.C., 1995).
515. A.D. Norte and A.E. Willner, "Multi-Stage All-Optical WDM-to-TDM-to-WDM and TDM-to-WDM-to-TDM Data Format Conversion and Reconversion Through 80 km of Fiber and 3 EDFAs," **IEEE LEOS Summer Topical Meeting on Technologies for a Global Information Infrastructure**, paper WA5, Keystone, Colorado, Aug. 1995 (IEEE, Piscataway, New Jersey, 1995).
516. X.Y. Zou, S.-M. Hwang, and A.E. Willner, "Limitations in Number of WDM Channels When using Dispersion Management and Mid-Span Phase Conjugation," **IEEE LEOS Summer Topical Meeting on Technologies for a Global Information Infrastructure**, paper MC3, Keystone, Colorado, Aug. 1995 (IEEE, Piscataway, New Jersey, 1995).
517. S.-H. Huang, X.Y. Zou, and A.E. Willner, "9,000-km WDM Transmission of Three 2.5-Gbit/s Channels Covering a 5-nm Wavelength Range", **Topical Meeting on Optical Amplifiers and Their Applications**, Proceedings, paper ThD14, Davos, Switzerland, June, 1995 (Optical Society of America, Wash., D.C., 1995).
518. S. Homan and A.E. Willner, "High-Capacity Optical Storage using Multiple Wavelengths, Multiple Layers, and Volume Holograms," **Society of Photo-Instrumentation Engineers (SPIE) Conference on Optical Data Storage**, Technical Digest, **Post-Deadline Session**, July, 1995, San Diego, CA (SPIE, Bellingham, Wash., 1995).

**REFEREED PROCEEDINGS: (CONTINUED)**

519. S.-M. Hwang and A.E. Willner, "Active Equalization of Non-Uniform EDFA Gain by using Multiple AOTF Passbands for Megameter WDM Transmission," **Conf. on Lasers and Electro-Optics**, paper CTuS3, Balt., Md., May 1995 (Optical Society of America, Wash., D.C., 1995).
520. W. Shieh and A.E. Willner, "Optimal Conditions for High-Speed All-Optical SOA-Based Wavelength Shifting," **Conf. on Lasers and Electro-Optics**, paper CThT4, Balt., Md., May 1995 (Optical Society of America, Wash., D.C., 1995).
521. E. Park and A.E. Willner, "Simultaneous All-Optical Header Replacement and Wavelength Shifting for a Dynamically-Reconfigurable WDM," **Conference on Optical Fiber Communication**, paper TuQ4, San Diego, CA, Feb. 1995 (Optical Society of America, Wash., D.C., 1995).
522. A.D. Norte and A.E. Willner, "All-Optical TDM-to-WDM Data-Format Conversion in a Dynamically-Reconfigurable WDM Network," **Conference on Optical Fiber Communication**, paper WJ6, San Diego, CA, Feb. 1995 (Optical Society of America, Wash., D.C., 1995).
523. X.-Y. Zou, S.-M. Hwang, and A.E. Willner, "Compensation of Non-Uniform Gain Induced by Raman Scattering and EDFA's in Ultra-Long-Distance WDM Links," **Conference on Optical Fiber Communication**, paper WL6, San Diego, CA, Feb. 1995 (Optical Society of America, Wash., D.C., 1995).
524. J.E. Leight and A.E. Willner, "Reduced Switching Delay in 2-D WDM Multiple-Plane Optical Interconnections using Multiple-Wavelength VCSEL Arrays," **IEEE/LEOS Topical Meeting on Smart Pixels**, paper W1.6, Lake Tahoe, Nevada, July 1994 (IEEE/LEOS, Piscataway, NJ, 1994).
525. A.E. Willner and W. Shieh, "Optimal Spectral and Power Parameters for All-Optical Wavelength Shifting: Single Stage, Fanout, and Cascadability," **Conference on Optical Fiber Communication**, paper ThC3, San Jose, CA, Feb. 1994 (Optical Society of America, Wash., D.C., 1994).
526. A.E. Willner and S.-M. Hwang, "Optically-Amplified WDM Ring Network Incorporating Channel-Dropping Filters," **Conference on Optical Fiber Communication**, paper WI2, San Jose, CA, Feb. 1994 (Optical Society of America, Wash., D.C., 1994).
527. A.E. Willner and S.-M. Hwang, "Passive Equalization of Non-Uniform EDFA Gain by Optical Filtering for Megameter Transmission of 20 WDM Channels through a Cascade of EDFA's," **Conference on Optical Amplifiers and Their Applications**, Proceedings, Yokohama, Japan, July, 1993 (Optical Society of America, Wash., D.C., 1993).
528. S.-M. Hwang and A.E. Willner, "Guidelines for Optimizing System Performance for 20 WDM Channels Propagating through a Cascade of EDFA's," **Conference of the IEEE Lasers and Electro-Optics Society**, Proceedings, paper OC5.3, Nov. 1993, San Jose, CA (IEEE/LEOS, Piscataway, New Jersey, 1993).
529. A.E. Willner, C.J. Chang-Hasnain, and J.E. Leight, "2-D WDM Optical Interconnects using Multiple-Wavelength VCSEL's for Simultaneous and Reconfigurable Communication Between Many Planes," Topical Meeting on **Photonics in Switching**, Proceedings, pp. 172-175, Palm Springs, CA, March 15, 1993 (Optical Society of America, Wash., D.C., 1993).
530. A.D. Norte, A.E. Willner, W. Shieh, and A.R. Tanguay, Jr., "Multiple-Plane Optical Interconnections using Through-Wafer Hollow Dielectric Waveguide Vias," Topical Meeting on **Optical Design for Photonics**, Proceedings, paper OWA15, pp. 175-178, Palm Springs, CA, March 15, 1993 (Optical Society of America, Wash., D.C., 1993).
531. A.R. Cisneros, S.F. Habiby, and A.E. Willner, "Photonic Contention Resolution Devices, A Laboratory Demonstration," **Conf. on Optical Fiber Communication**, Technical Digest, pp. 94-95, San Jose, CA, Feb. (Optical Society of America, Wash., D.C., 1993).

**REFEREED PROCEEDINGS: (CONTINUED)**

532. A.E. Willner, M.W. Maeda, and J.R. Wullert II, "Comparison of Central and Distributed Control in a WDMA Optical Star Network," **Int'l Conf. on Communication**, Proceedings, pp. 824-828, Chicago, Ill., June 1992 (IEEE, Piscataway, N.J., 1992).
533. A.E. Willner, "SNR Analysis of Crosstalk and Filtering Effects in an Amplified Multi-Channel Direct-Detection Dense-WDM System," **Conf. on Optical Fiber Communication**, Technical Digest, pp. 171-172, San Jose, CA, Feb. (Optical Society of America, Wash., D.C., 1992).
534. M.W. Maeda, J.R. Wullert II, A.E. Willner, and J. Patel, "Wavelength-Division Multiple-Access Network Based on Centralized Common-Wavelength Control," **Conf. on Optical Fiber Communication**, Technical Digest, pp. 85-86, San Jose, CA, Feb. (Optical Society of America, Wash., D.C., 1992).
535. E.L. Goldstein, L. Eskildsen, T.H. Wu, M. Andrejco, A.E. Willner, V. Shah, L. Curtis, D. Mahoney, W.C. Young, A. Yi-Yan, H. Izadpanah, C.E. Zah, N. Andreadakis, F. Favire, B. Pathak, T.P. Lee, and C. Lin, "Application of Quasi-Distributed Optical Amplification to SONET Self-Healing Inter-Exchange Networks," **Conf. on Optical Fiber Communication**, Technical Digest, pp. 254-255, San Jose, CA, Feb. 1992 (Optical Society of America, Wash., D.C., 1992).
536. L. Eskildsen, E.L. Goldstein, M. Andrejco, V. Shah, L. Curtis, D. Mahoney, H. Johnson, C.E. Zah, N. Andreadakis, F. Favire, B. Pathak, A.E. Willner, H. Izadpanah, A. Yi-Yan, T.H. Wu, T.P. Lee, W.C. Young, and C. Lin, "Properties of Spontaneous Emission and Signal Power in Saturated Fiber-Amplifier Cascades," **Conf. on Lasers and Electro-Optics**, Technical Digest, pp. 352-354, Anaheim, CA, May 1992 (Optical Society of America, Wash., D.C., 1992).
537. A.E. Willner, A.A.M. Saleh, H.M. Presby, D.J. DiGiovanni, and C.A. Edwards, "Star Couplers with Gain using Multiple Erbium-Doped Fibers Pumped with a Single Laser," **Conf. on Lasers and Electro-Optics**, Technical Digest, pp. 108-110, Balt., Md., May 1991 (Optical Society of America, Wash., D.C., 1991).
538. A.E. Willner and E. Desurvire, "Effect of Gain Saturation on Receiver Sensitivity in 1 Gb/s Multichannel FSK Direct-Detection Systems using Erbium-Doped Fiber Preamplifiers," **Conf. on Optical Fiber Communication**, Technical Digest, pp. 163-164, San Diego, CA, Jan. 1991 (Optical Society of America, Wash., D.C., 1991).
539. A.E. Willner, E. Desurvire, H.M. Presby and C.A. Edwards, "FDMA-FSK 1 Gb/s Star Network using LD-Pumped Erbium-Doped Fiber Preamplifiers with Optimal Noise Filtering", **Topical Meeting on Optical Amplifiers and Their Applications**, Proceedings, pp. 248-251, Monterey, CA, Aug. 6, 1990 (Optical Society of America, Wash., D.C., 1990).
540. A.E. Willner, I.P. Kaminow, M. Kuznetsov, J. Stone, and L.W. Stulz, "1.2 Gb/s Closely Spaced FDMA-FSK Direct-Detection Star Network using Two-Electrode DFB Lasers," **Conf. on Lasers and Electro-Optics**, Technical Digest, pp. 310-312, Anaheim, CA, May 1990 (Optical Society of America, Wash., D.C., 1990).
541. A.E. Willner, "Analytical Model for Performance Optimization of a FSK-to-ASK System using a Fabry-Perot Demodulator," **Conf. on Lasers and Electro-Optics**, Technical Digest, pp. 416-418, Anaheim, CA, May 1990 (Optical Society of America, Wash., D.C., 1990).
542. A.E. Willner, M. Kuznetsov, D. Marcuse, I.P. Kaminow, J. Stone, L.W. Stulz, and C. A. Burrus, "FM/FSK Characterization of Tunable Two-Electrode DFB Lasers and Their Performance with Noncoherent Detection," **Conf. on Optical Fiber Communication**, Technical Digest, pp. 184-185, San Francisco, CA, Jan. 1990 (Optical Society of America, Wash., D.C., 1990).
543. M.N. Ruberto, R. Scarmozzino, A.E. Willner, D.V. Podlesnik, and R.M. Osgood, Jr., "The Maskless Photochemical Etching of Optical Components on GaAs/AlGaAs Heterostructures," **Conference of the**

**REFEREED PROCEEDINGS: (CONTINUED)**

- IEEE Lasers and Electro-Optics Society**, Technical Digest, pp. 185-188, Oct. 1989 (IEEE, Wash., D.C., 1989).
544. M.N. Ruberto, A.E. Willner, D.V. Podlesnik, and R.M. Osgood, Jr., "Laser Direct Writing of Integrated Optical Components," **Conf. on Lasers and Electro-Optics**, Technical Digest, pp. 394-396, April 1989 (Optical Society of America, Wash., D.C., 1989).
545. A.E. Willner, D.J. Blumenthal, M.N. Ruberto, D.V. Podlesnik, and R.M. Osgood, Jr., "Laser Fabricated GaAs Waveguiding Structures," **Conference of the IEEE Lasers and Electro-Optics Society**, Technical Digest, pp. 90-93, Nov. 1988 (IEEE, Wash., D.C., 1988).
546. M.N. Ruberto, A.E. Willner, D.V. Podlesnik, and R.M. Osgood, Jr., "Photogenerated Carrier Confinement During the Laser-Controlled Aqueous Etching of GaAs/AlGaAs Multilayers," in **Laser and Particle Beam Chemical Processes on Surfaces**, A. W. Johnson, G. L. Loper, and T. W. Sigmon, eds., Materials Research Society Proceedings, Symp. **B**, pp. 279-284, Fall 1988 (North-Holland, Amsterdam, 1989).
547. A.E. Willner, D.V. Podlesnik, H.H. Gilgen, and R.M. Osgood, Jr., "Ultrafast Aqueous Etching of Gallium Arsenide," in **Photon, Beam and Plasma Stimulated Chemical Processes at Surfaces**, V.M. Donnelly, I.P. Herman, and M. Hirose, eds., Materials Research Society Proceedings, pp. 75-83, Fall 1986 (North-Holland, Amsterdam, 1987).
548. A.E. Willner, D.V. Podlesnik, H.H. Gilgen, and R.M. Osgood, Jr., "Inhibition of Laser-Induced Photochemical Reactions in Semiconductors by Background Illumination," **Conf. on Laser Electro-Optics**, Technical Digest, pp. 271-273, April 1987 (Optical Society of America, Wash. D.C., 1987).
549. R.W. Ade, A.E. Willner, E.R. Fossum, and R.M. Osgood, Jr., "GaAs Detector Structure for Vertically Coupled Fiber Optic Interconnects," **Conf. on Laser Electro-Optics**, Technical Digest, pp. 164-166, April 1987 (Optical Society of America, Wash. D.C., 1987).
550. A.E. Willner, D.V. Podlesnik, H.H. Gilgen, and R.M. Osgood, Jr., "Laser Induced High-Aspect Etching of InP: Experiment and Theory," **Conf. on Laser Electro-Optics**, Technical Digest, pp. 112-114, June 1986 (Optical Society of America, Wash. D.C., 1986).
551. D.V. Podlesnik, A.E. Willner, R. Beach, H.H. Gilgen, and R.M. Osgood, Jr., "Spontaneous Ripple Formation Due to Ultraviolet Surface Oxidation of Semiconductors," **International Quantum Electronics Conference**, Technical Digest, pp. 156-158, June 1986 (Optical Society of America, Wash. D.C., 1986).

**NON-REFEREED PAPERS:**

1. Alan Eli Willner, "Editorial: Optics Letters' 40th Anniversary Retrospective 2008–2013," **Optics Letters**, vol. **42**, no. 15, pp. ED5-ED5, 2017.
2. Alan E. Willner. "Celebrating a century of optics innovation." **GUEST EDITORIAL, Optic & Photonik**, vol. **11**, no. 5, pp. 1-1, Dec. 2016.
3. Bishara Shamee, Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Ahmed Almaman, Yinwen Cao, Steven R. Wilkinson and Alan E. Willner, "Modified raised cosine waveform shaping with reduced peak to average power ratio," **Society of Photo-Instrumentation Engineers (SPIE) Optics and Photonics, Laser Communication and Propagation through the Atmosphere and Oceans V, FSO Comms**, paper 9979-15, San Diego, CA, Aug. 2016 (SPIE, Bellingham, Wash., 2016).
4. D. Starodubov, K. McCormick, M. Dellosa, L. Volfson, A. Fallahpour and A. Willner, "Precision optical navigation guidance system," **Proc. of Society of Photo-Instrumentation Engineers**

**NON-REFEREED PAPERS: (CONTINUED)**

- (SPIE) 9828, Airborne Intelligence, Surveillance, Reconnaissance (ISR) Systems and Applications XIII, paper. 98280C, Jun. 2016 (SPIE, Bellingham, Wash., 2016).
5. Alan E. Willner, "Public/private partnerships drive National Photonics Initiative," **GUEST EDITORIAL, Chip Scale Review**, pp. 8, March/April 2016.
  6. Asher J. Willner, Yongxiong Ren, Guodong Xie, Zhe Zhao, Yinwen Cao, Long Li, Nisar Ahmed, Zhe Wang, Yan Yan, Peicheng Liao, Cong Liu, Mohammad Mirhosseini, Robert W. Boyd, Moshe Tur, and Alan E. Willner, "Free-space Optical Communications using Encoding of Data on Different Orbital-Angular-Momentum Modes," **Society of Photo-Instrumentation Engineers (SPIE), Free-Space Laser Communication and Atmospheric Propagation XXVIII**, paper 9739-43, San Francisco, CA, Feb. 2016 (SPIE, Bellingham, Wash., 2016).
  7. Nisar Ahmed, Zhe Zhao, Yan Yan, Peicheng Liao, Guodong Xie, Zhe Wang, Martin P. J. Lavery, Yongxiong Ren, Ahmed S. Almaiman, Hao Huang, Long Li, Changjing Bao, Nima Ashrafi, Solyman Ashrafi, Moshe Tur, Andreas F. Molisch, and Alan E. Willner, "Demonstration of an Obstruction-Tolerant Millimeter-wave Free-space Communications Link of two 1-Gbaud 16-QAM Channels using Bessel Beams Containing Orbital Angular Momentum," **Society of Photo-Instrumentation Engineers (SPIE), Third International Conference on Optical Angular Momentum**, paper OAM01-68, San Francisco, CA, Aug. 2015 (SPIE, Bellingham, Wash., 2015).
  8. Bishara Shamee, Nisar Ahmed, Morteza Ziyadi, Amirhossein Mohajerin-Ariaei, Ahmed S. Almaiman, Yinwen Cao, Steven R. Wilkinson, Alan E. Willner, "OAM based Analog to Digital Converter (ADC)," **Society of Photo-Instrumentation Engineers (SPIE), Third International Conference on Optical Angular Momentum**, paper OAM01-102, San Francisco, CA, Aug. 2015 (SPIE, Bellingham, Wash., 2015).
  9. Giovanni Milione, Martin P. J. Lavery, Hao Huang, YongxiongRen, Yan Yan, EbrahimKarimi, Thien An Nguyen, Ming-Jun Li, Dan A. Nolan, Robert R. Alfano, Alan E. Willner, "Mode-division Multiplexing using the Basis of Vector Modes over Free Space and Optical Fibers," **Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 9379-18, San Francisco, CA, Feb. 2015 (SPIE, Bellingham, Wash., 2015).
  10. Ahmed Almaiman, Mohamed R. Chitgarha, Wajih A. Daab, Morteza Ziyadi, Amirhossein M. Ariaei, Wendy X. Zhao, Vijay Vusirikala, and Alan E. Willner, "Experimental Validation of a Delay-Line Interferometer Based in-Band OSNR Monitor using a Multivariable Control System," **Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 9007-23, San Francisco, CA, Feb. 2014 (SPIE, Bellingham, Wash., 2014).
  11. Hao Huang, Yongxiong Ren, Yang Yue, Yan Yan, Nisar Ahmed, Amanda Bozovich, Samuel J. Dolinar, Jr., and Alan E. Willner, "Performance Analysis of Spectrally Efficient Free-Space Data Link using Spatially Multiplexed Orbital Angular Momentum Beams," **Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 8647-6, San Francisco, CA, Feb. 2013 (SPIE, Bellingham, Wash., 2013).
  12. Wajih A. Daab, Salman Khaleghi, Mohamed R. Chitgarha, Morteza Ziyadi, and Alan E. Willner, "Simulation and Experimental Validation of OSNR Monitoring for Different Modulation Formats using Delay-Line-Interferometer," **Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 8646-25, San Francisco, CA, Feb. 2013 (SPIE, Bellingham, Wash., 2013).
  13. James E. Ferrara, Jr., Weijian Yang, Anthony Yeh, Karen Grutter, Christopher Chase, Vadim Karagodsky, Devang Parekh, Yang Yue, Alan E. Willner, Ming C. Wu, and Connie Chang-Hasnain, "Low-Loss Hollow-Core Waveguide using High-Contrast Sub-wavelength Grating," **Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 8270-17, San Francisco, CA, Jan. 2012 (SPIE, Bellingham, Wash., 2012).



**NON-REFEREED PAPERS: (CONTINUED)**

14. Kevin M. Birnbaum, Baris I. Erkmen, JNisar Ahmed, Irfan M. Fazal, Jian Wang, Jeng-Yuan Yang, Yan Yang, Bishara Shamee, Alan E. Willner, and Samuel J. Dolinar, Jr., "Efficient Multiplexing and Demultiplexing of Orbital Angular Momentum Beams," **Society of Photo-Instrumentation Engineers (SPIE) Photonics West**, paper 8282-6, San Francisco, CA, Jan. 2012 (SPIE, Bellingham, Wash., 2012).
15. Alan E. Willner, "RMO Etchings: How Integrated Optical Components Enhance Optical Communication Systems," **Columbia University Symposium on Pure and Applied Science: Honoring 40 Years of Contributions by Richard M. Osgood, Jr.**, Jan. 2009.
16. Lin Zhang, J.-Y. Yang, M. Song, R.G. Beausoleil, and Alan Willner, "Advanced Modulation Formats in On-Chip Photonic Interconnects," **HP Photonic Interconnect Forum**, Hewlett-Packard Laboratories, Poster Presentation, Palo Alto, CA, May 2008.
17. "Celebrating 25 Years of the IEEE/OSA Journal of Lightwave Technology": R.C. Alferness, C.J. Chang-Hasnain, T. Giallorenzi, D. Keck, and A.E. Willner, **IEEE/OSA Journal of Lightwave Technology**, vol. **26**, pp. 990-993, 2008; A.E. Willner and C.J. Chang-Hasnain, **IEEE Communications Magazine**, vol. **46**, no. 4, pp. 16-18, 2008; **IEEE Instrumentation & Measurement Magazine**, vol. **11**, no. 3, pp. 49-50, 2008.
18. Y.K. Lize, L. Christen, X. Wu, J-Y Yang, S. Nuccio, A. E. Willner, and R. Kashyap, "Partial Bit Delay Differential Phase Shift Keyed Demodulation," **Society of Photo-Instrumentation Engineers (SPIE) Photonics North 2007**, paper 95-Q4Cq-262, Ottawa, Canada (SPIE, Bellingham, WA, 2007).
19. Y.K. Lize, M. Faucher, E. Jarry, P. Ouellette, A. Wetter, R. Kashyap, and A.E. Willner, "All-Fiber DPSK and DQPSK Demodulator with 180 nm of Spectral Bandwidth," **Society of Photo-Instrumentation Engineers (SPIE) Photonics North 2007**, paper 95-p1jj-262, Ottawa, Canada (SPIE, Bellingham, WA, 2007).
20. Y.K. Lize, L. Christen, S. Nuccio, J.-Y. Yang, A.E. Willner, and R. Kashyap, "Optical Error Correction Device for Differential Modulation Formats Demodulation," **Society of Photo-Instrumentation Engineers (SPIE) Photonics North 2007**, paper 95- DkKX-262, Ottawa, Canada (SPIE, Bellingham, WA, 2007).
21. Y.K. Lize, L.C. Christen, S. Nuccio, A.E. Willner, and R. Kashyap, "Improving Bit Error Rate Through Multipath Differential Demodulation," **Society of Photo-Instrumentation Engineers (SPIE) Photonics West, Symposium on Free-Space Laser Communication Technologies XIX**, paper 6457A-14, San Jose, CA, Jan. 2007 (SPIE, Bellingham, Wash., 2007).
22. Yannick Keith Lize, Louis Christen, Robert Gomma, Scott Nuccio, Alan E. Willner, and Raman Kashyap, "Multi-Bit Differential Phase Shift Keyed Optical Demodulation," **Society of Photo-Instrumentation Engineers (SPIE) Photonics North 2006**, paper 71-HsLe-53, June 2006, Quebec City, Canada (SPIE, Bellingham, Wash., 2006).
23. L.-S. Yan, X. Steve Yao, and A.E. Willner, "Programmable Differential-Group-Delay (DGD) Elements Based Polarization-Mode-Dispersion (PMD) Emulator with Tunable Statistics," **Newsletter of the IEEE Lasers and Electro-Optics Society**, University Research Highlights, vol. **19**, pp. 4-9, Dec. 2005 (IEEE/LEOS, Piscataway, New Jersey, 2005).
24. A.E. Willner, "All-Optical Processing for Efficient Data-Packet Routing in a Secure Optical Network," **Workshop on Optical and Protocol Vulnerability Assessment**, Sponsored by the Defense Information Systems Agency, the National Security Agency, and the Naval Research Laboratory, McLean, VA, June, 2001.
25. A.E. Willner and E. Park, "WDM for the Evolving Optical Access Network," **Fiberoptic Product News Magazine**, March, 2001.

**NON-REFEREED PAPERS: (CONTINUED)**

26. J. Bannister, J. Touch, A.E. Willner, and S. Suryaputra, "How Many Wavelengths Do We Really Need? A Study of the Performance Limits of Packet over Wavelengths," **Optical Networks Magazine**, vol. 1, April, pp. 11-22, 2000.
27. J. Yoo, J. Leight, and A.E. Willner, "Power and Crosstalk Limitations in 2-D Multiple-Plane WDM Interconnections," **Society of Photo-Instrumentation Engineers (SPIE) Photonics East Conference on Emerging Components and Technologies for All-Optical Photonic Systems**, Technical Digest, Nov., 1996, Boston, MA (SPIE, Bellingham, Wash., 1996).
28. J.E. Leight, S. Homan, A.E. Willner, G. Giaretta, M. Li, and C.J. Chang-Hasnain, "Demonstration of a Reconfigurable Wavelength-Multiplexed Multiple-Plane Optical Interconnection," **Society of Photo-Instrumentation Engineers (SPIE) Photonics East Conference on Emerging Technologies for All-Optical Networks**, Technical Digest, paper 2613-11, Oct., 1995, Philadelphia, PA (SPIE, Bellingham, Wash., 1995).
29. W. Shieh and A.E. Willner, "Optimal Conditions for All-Optical SOA-Based High-Speed Wavelength Shifting," **Society of Photo-Instrumentation Engineers (SPIE) Photonics West Conference on Components for Wavelength Division Multiplexing**, Technical Digest, paper 2402-14, Feb., 1995, San Jose, CA (SPIE, Bellingham, Wash., 1995).
30. A.E. Willner, C.J. Chang-Hasnain, and J.E. Leight, "2-D WDM Optical Interconnects using Multiple-Wavelength VCSEL's for Simultaneous and Reconfigurable Communication Between Many Planes," **Optics and Photonics News**, vol. 4, no. 12, pp. 20-21, 1993.
31. A.E. Willner and S.-M. Hwang, "SNR Equalization of 20 WDM Channels Propagating Through a Cascade of EDFA's," **Annual Meeting of the Optical Society of America**, Technical Digest, paper MFF4, Oct. 1993 (Optical Society of America, Wash., D.C., 1993).
32. A.E. Willner, "Book Review of Fiber-Optic Communication Systems authored by G.P. Agrawal," **IEEE Journal of Quantum Electronics**, vol. 30, p. 347, 1994.
33. A.E. Willner, M. Kuznetsov, I.P. Kaminow, U. Koren, T.L. Koch, C.A. Burrus, and G. Raybon, "Multi-Gigahertz Bandwidth FM Response of Two-Electrode DFB Lasers," **Annual Meeting of the Optical Society of America**, Technical Digest, paper TuP3, Oct. 1989 (Optical Society of America, Wash., D.C., 1989).
34. M.N. Ruberto, R. Scarmozzino, A.E. Willner, D.V. Podlesnik and R.M. Osgood, Jr., "Graded-Effective-Index Waveguiding Structures Fabricated with Laser Processing", **Society of Photo-Optical Instrumentation Engineers (SPIE)**, Proceedings, vol. 1215, pp. 538-549, Anaheim, CA, Jan. 1990 (SPIE, Bellingham, Wash., 1990).
35. A.E. Willner, O.J. Glembocki, D.V. Podlesnik, E.D. Palik, and R.M. Osgood, Jr., "Surface Potential Characterization of the Photoelectrochemical Etching System by Photorefectance and Electroreflectance Techniques," **Society of Photo-Optical Instrumentation Engineers (SPIE)**, vol. 946, pp. 48-56 (SPIE, Bellingham, Wash., 1988).

**TECHNICAL REPORTS:**

1. A.E. Willner, "Electrical Fields and Capacitances of Submicron Devices in Silicon and GaAs," Technical Report, **David Sarnoff Research Center**, RCA Laboratories, Summer 1984.
2. A.E. Willner, "Automatic Data Acquisition of Resistance and Capacitance on a Processed Semiconductor Wafer," Technical Report, **David Sarnoff Research Center**, RCA Laboratories, Summer 1983.