

Paolo Ghelfi - List of Publications

JOURNALS

1. Potì L., Bogoni A., and **Ghelfi P.**, “Experimental validation of an extended ABCD model for actively mode-locked fiber lasers”, IEEE Photon. Technol. Lett., Vol. 13, N. 6 , pp. 562-564, June 2001.
2. **Ghelfi P.**, Bogoni A., and Potì L., “Numerical model of the dynamic absorption variation in QW-EAM for ultrafast all optical signal processing”, in IEE Proc. - Circuit, Devices and Systems, vol. 150, N.6, pp-512-515, Dec. 2003.
3. Bogoni A., Bizzi A., Potì L., and **Ghelfi P.**, “Impact evaluation of the SOA spontaneous emission in ultrafast all-optical processing schemes”, in IEE Proc. - Circuit, Devices and Systems, vol. 150, N.6, pp 548-551, Dec. 2003.
4. Bogoni A., **Ghelfi P.**, Scaffardi M., and Potì L., "All-Optical Regeneration and Demultiplexing for 160 Gbit/s Transmission Systems Using a NOLM-Based 3-Stage Scheme," IEEE J. of Select. Topics in Quantum Electron., Jan/Feb 2004.
5. Bogoni A., Ponzini F., Scaffardi M., **Ghelfi P.**, and Potì L., "New Optical Sampler Based on TOAD and Data Post-Processing with Sub-Picosecond Resolution," IEEE J. of Select. Topics in Quantum Electron., Jan/Feb 2004.
6. Bogoni A., Potì L., Porzi C., Scaffardi M., **Ghelfi P.**, and Ponzini F., "Modelling and Measurement of Noisy SOA Dynamics for Ultra-Fast Applications," IEEE J. of Select. Topics in Quantum Electron., Jan/Feb 2004.
7. Bogoni A., Scaffardi M., **Ghelfi P.**, and Potì L., " Nonlinear Optical Loop Mirrors: investigation solution and experimental validation for undesirable counter-propagating effects in all-optical signal processing", IEEE J. of Select. Topics in Quantum Electron, vol. 10, n. 5, pp. 1115-1123, Sept./Oct. 2004
8. Bogoni A., Potì L., Proietti R., Meloni G., Ponzini F., and **Ghelfi P.**, “Regenerative and Reconfigurable All-Optical Logic Gates for Ultra-Fast Applications,” Electron. Letters, V. 41, No. 7, pp. 435 – 436, March 2005.
9. Meloni G., Scaffardi M., **Ghelfi P.**, Bogoni A., Potì L., and Calabretta N., “Ultra-fast all-optical ADD/DROP Multiplexer Based on 1-Meter-Long Bismuth Oxide-Based Highly-Nonlinear Fiber,” IEEE Photon Technol. vol. 17, n. 12, December 2005.
10. Bogoni A., Potì L., Ponzini F., and **Ghelfi P.**, “Electrical Equivalent Model for an optical VCO in a PLL synchronization scheme for ultra-short optical pulse sources,” IEEE J. of Lightwave. Technol., vo. 24, n. 1, January 2006.
11. Bogoni A., **Ghelfi P.**, Scaffardi M., Porzi C., Ponzini F., and Potì L., “Demonstration of feasibility of a complete 160 Gbit/s OTDM system including all-optical 3R”, Optics Communications, v.260, n.1, pp. 136-139, April 2006.
12. Bogoni A., Potì L., **Ghelfi P.**, Scaffardi M., Porzi C., Ponzini F., Meloni G., Berrettini G., Malacarne A., and Prati G., “OTDM-based optical communications networks at 160 Gbit/s and beyond” **invited paper**, Optical Fiber Technology, v.13, n.1, January 2007.
13. **Ghelfi P.**, Secondini M., Scaffardi M., Fresi F., Bogoni A., and Potì L. "Impact of an Additional All-Optical Decision Element in Band-Limited Receivers for RZ Systems", IEEE J. of Lightwave Technol., 25, 7, July 2007.
14. Scaffardi M., **Ghelfi P.**, Lazzeri E., Potì L., and Bogoni A. "Photonic processing for digital comparison and full addition based on semiconductor optical amplifiers", IEEE J. of Select. Topics in Quantum Electron., 14, 3, 826-833, May/June 2008.
15. Wu X., Bogoni A., Scaffardi M., Berrettini G., **Ghelfi P.**, Potì L., Meloni G., and Willner A. "Multiplexing Two 40-Gb/s WDM Signals into an 80-Gb/s Signal Using XPM in a 0.8-meter Bi-HNLF", Electron. Letters , 45, 5, 281-282, February 26 2009.

16. Laghezza F., Berizzi F., Capria A., Cacciavano A., Serafino G., **Ghelfi P.**, and Bogoni A., “Reconfigurable radar transmitter based on photonic microwave signal generation”, *International Journal of Microwave and Wireless Technologies*, Vol.3, Special Issue 03, pp.383-389, March 2011, DOI:10.1017/S1759078711000262
17. **Ghelfi P.**; Scotti, F.; An Truong Nguyen; Serafino, G.; Bogoni, A., “Novel Architecture for a Photonics-Assisted Radar Transceiver Based on a Single Mode-Locking Laser” *IEEE PTL*, Vol.23, no. 10, pp.639-641, May 2011
18. Ma L., **Ghelfi P.**, Yao M., Berizzi F., Bogoni A., “Demonstration of an optical sample parallelization exploiting FWM in HNLF for high speed photonic assisted ADCs”, *Electronics Letters*, v.47, n.5, pp.333-335, March 2011.
19. Mangal S., **Ghelfi P.**, Bogoni A., Banerji P., “Barrier height dependence of Fano factor and 1/f noise effect on InGaP based Schottky barrier diode”, *J. Applied Physics*, vol.110, n.3, 033721 (2011)
20. Bogoni A., Potì L., Willner A., **Ghelfi P.**, Porzi C., Scaffardi M., Meloni G., Berrettini G., Fresi F., Lazzeri A., and Wu X., “Optical logic elementary circuits”, **invited paper**, *IET Circuits Devices Syst*, v.5, n.2, 76-83, March 2011.
21. Serafino G., **Ghelfi P.**, Perez-Millan P, Villanueva G.E., Palaci J, Cruz J.L., and Bogoni, A., “Phase and Amplitude Stability of EHF-Band Radar Carriers Generated From an Active Mode-Locked Laser”, *IEEE J. of Lightwave Technol.*, v.29, n.23, pp.: 3551-3559, Dec. 2011.
22. **Ghelfi P.**, Scotti F., Laghezza L., and Bogoni A., “Photonic Generation of Phase-Modulated RF Signals for Pulse Compression Techniques in Coherent Radars”, *IEEE J.Lightwave Technol.*, vol. 30, n. 11, pp. 1638-1644, June 2012.
23. **Ghelfi P.**, Scotti F., Laghezza F., and Bogoni A., “Phase Coding of RF Pulses in Photonics-Aided Frequency-Agile Coherent Radar Systems”, *IEEE J. Quantum Electron.*, vol. 48, n. 9, pp. 1151-1157, Sept. 2012
24. Lee K., Lim S. D., Jhon Y. M., Kim C. H., **Ghelfi P.**, Nguyen A., and Potì L., “*Broadcasting in colorless WDM-PON using spectrum-sliced wavelength conversion*”, *Elsevier Optical Fiber Technology*, V.18, n.2, pp. 112–116, March 2012
25. **Ghelfi P.**, Serafino G., Scotti F., Laghezza F., and Bogoni A., “Flexible Receiver for Multi-Band OFDM Signals at Millimeter-Waveband based on Optical Down-Conversion”, *Optics Letters*, v.37, n.18, pp. 3924-3926, Sept. 2012.
26. **Ghelfi P.**, Laghezza F., Scotti F., Serafino G., Pinna S., Bogoni A., “Photonic generation and independent steering of multiple RF signals”, **invited paper**, *Optics Express*, v.21, n.19, September 2013
27. Porzi C., Chin S., Trita A., Fresi F., Berrettini ., Mezosi ., **Ghelfi P.**, Giuliani G., Potì L., Sorel M., Thévenaz L., and Bogoni A., “Application of Brillouin-based Continuously Tunable Optical Delay Line to Contention Resolution Between Asynchronous Optical Packets”, *J. Lightwave Technol.*, v.31, n.17, Sept. 2013

CONFERENCES

- [1] Bogoni A., Potì L., **Ghelfi P.**, Scaffardi M., and Prati G., “*Analisi e realizzazione sperimentale di un sistema OTDM per trasmissioni fino a 100 Gbit/s*”, in *Proc. Fotonica 2001*.
- [2] Potì L., Bogoni A., **Ghelfi P.**, and Prati G., “*Dimostrazione sperimentale di un compensatore di PMD con un algoritmo di controllo iterativo*”, in *Proc. Fotonica 2001*.
- [3] Potì L., Bogoni A., and **Ghelfi P.**, “*Experimental validation of an extended ABCD model for actively mode-locked fiber lasers*”, in *Proc. OFC 2001*, vol. 3, WA1/1 -WA1/3.
- [4] Bogoni A., Potì L., **Ghelfi P.**, and Scaffardi M., “*Characterization and experimental verification of a three-section scheme for high order PMD mitigation*”, in *Proc. WOC2002*.
- [5] Bogoni A., Potì L., Ponzini F., and **Ghelfi P.**, “*All-electrical equivalent model for mode locked fiber sources synchronization schemes based on electro-optical PLLs*”, in *Proc. LEOS 2002*, vol. 1, pp. 177-178.

- [6] **Ghelfi P.**, Bogoni A., and Potì L., “*Dynamic analysis of the QW-EAM absorption for ultra-fast all-optical signal processing*”, in Proc. Photonics 2002, Omd 4.4, p. 246.
- [7] Bogoni A., Potì L., Ponzini F., and **Ghelfi P.**, “*RF synchronization of a fiber regenerative mode-locking laser source modeled as a voltage controlled oscillator*”, in Proc. Photonics 2002, Ltw P2, p. 141.
- [8] **Ghelfi P.**, Bogoni A., Potì L., “*Verifica dell'utilizzabilità di un modulatore ad elettro-assorbimento commerciale in applicazioni di rigenerazione 3r di segnali ad altissimo bit rate*”, in Proc. Fotonica 2003, P1.2.
- [9] Bogoni A., Potì L., **Ghelfi P.**, Bizzi A., and Scaffardi M., “*Investigation of the SOA fast-dynamics for 160Gbit/s applications*”, in Proc. CLEO 2003, CThC.
- [10] Bogoni A., **Ghelfi P.**, Scaffardi M., and Potì L., “*NOLM-based 3-stage regenerator for 160 Gbit/s transmission systems*”, in Proc. ECOC 2003.
- [11] Bogoni A., Ponzini F., Scaffardi M., **Ghelfi P.**, and Potì L., “*New technique of TOAD-based optical sampling with sub-picosecond resolution*”, in proc. ECOC 2003.
- [12] Porzi C., **Ghelfi P.**, Ponzini F., Bogoni A., and Potì L., “*Ultra-Fast Clock Recovery by All-Optical PLL*”, in Proc. LEOS 2003, TuY 4.
- [13] Scaffardi M., **Ghelfi P.**, Bogoni A., and Potì L., “*Investigation and solution for undesirable counter-propagating effects in Nonlinear Optical Loop Mirrors*” in Proc. CLEO 2004, CTuW.
- [14] **Ghelfi P.**, Bogoni A., Scaffardi M., Ponzini F., Porzi C., and Potì L., “*Performance Computation of a 160 Gbit/s NOLM-Based 3-Stage All-optical Regenerator*” in Proc. CLEO 2004, CThEE.
- [15] Bogoni A., **Ghelfi P.**, Scaffardi M., Porzi C., Ponzini F., and Potì L., “*Full 160 Gbit/s Single-Channel OTDM System Experiment Including All-Optical Transmitter, 3R, and Receiver*”, in Proc. ECOC 2004.
- [16] Scaffardi M., Andersen P. A., Oxenløwe L.K., Larsson D., Yvind K., Jeppesen P., Bogoni A., **Ghelfi P.**, and Potì L., “*Experimental characterisation of a highly non-linear fibre based 3-stage NOLM scheme for regeneration at 160 Gb/s*”, in Proc. ECOC 2004.
- [17] Proietti R., Meloni G., Ponzini F., **Ghelfi P.**, Potì L., and Bogoni A., “*Ultra-Fast Regenerative All-Optical Logic Gates Based On Nonlinear Optical Loop Mirrors*” in Proc. ECOC 2004.
- [18] **Ghelfi P.**, Bogoni A., Scaffardi M., Ponzini F., Porzi C., and Potì L., “*320 Gbit/s all-optical regeneration for OTDM signals*”, in Proc. ECOC 2004.
- [19] Scaffardi M., Andersen P.A., Oxenløwe L.K., Galili M., Larsson D., Yvind K., Jeppesen P., Bogoni A., **Ghelfi P.**, and Potì L., “*Performance evaluation of a highly non-linear fibre based NOLM for regeneration up to 160 Gb/s*”, in Proc. LEOS 2004.
- [20] **Ghelfi P.**, Bogoni A., Potì L., Meloni G., Scaffardi M., and Abedin K.S., “*Compressore solitonico basato su fibre ultra-corte a cristalli fotonici e ad alta nonlinearity per la generazione di impulsi ottici di durata inferiore a 400 fs*”, in Proc. FOTONICA 2005, P1.9, pag. 415.
- [21] Berrettini G., **Ghelfi P.**, Bogoni A., and Potì L., “*Implementazione di una sorgente “mode locking” di impulsi ottici ultracorti in configurazione sigma*”, in Proc. FOTONICA 2005, P1.11, pag. 423.
- [22] Bogoni A., Potì L., **Ghelfi P.**, Sacchi G., Magri R., and Beccatelli R., “*Modello per il progetto di reti ad anello basate su EDFA con ricircolo di ASE: funzionamento a regime, in caso di guasto e successivo ripristino*”, in Proc. FOTONICA 2005, A8.4, pag. 345.
- [23] **Ghelfi P.**, Sacchi G., and Ennser K., “*Investigazione e dimostrazione di auto-stabilizzazione di una rete trasparente WDM ad anello tramite azione laser*”, in Proc. FOTONICA 2005, pag. 497.
- [24] Ennser K., **Ghelfi P.**, Sacchi G., Magri R., and Quargnolo O., “*Transients suppression in transparent WDM ring network self-stabilized by laser action*”, in Proc. CLEO 2005, CtuX5, pag. 109.
- [25] Prati G., Potì L., Bogoni A., **Ghelfi P.**, Scaffardi M., Porzi C., and Ponzini F., “*Fiber-Optics-Based Techniques for All-Optical Processing beyond 160 Gbit/s*”, **invited paper**, in Proc. OECC 2005.
- [26] Prati G., Scaffardi M., Porzi C., Ponzini F., Bogoni A., **Ghelfi P.**, Potì L., “*Evolution of high-capacity long-haul systems towards OTDM*”, **invited paper** Optical Networking, Padova 2005.

- [27] **Ghelfi P.**, Scaffardi M., Secondini M., Fresi F., Matchouani M.F., Bogoni A., Potì L., “*Additional All-Optical Decision Element Improving the Performance of Band-Limited Receivers in RZ Systems*”, in Proc. ECOC 2005.
- [28] Cugini F., **Ghelfi P.**, Giorgetti A., Valcarenghi L., Castoldi P., “*Partial Cross-Connection Capability OXCs for Ring Interconnection*”, Workshop on Optical Cross-Connects, Globecom 2005.
- [29] Meloni G., Scaffardi M., **Ghelfi P.**, Bogoni A., Potì L., “*Optical ADD/DROP Multiplexer Based on 1-Meter-Long Bismuth Oxide-Based Highly-Nonlinear Fiber*”, in Proc. ECOC 2005.
- [30] Berrettini G., Malacarne A., **Ghelfi P.**, Bogoni A., and Potì L., “*Ultra-fast and reconfigurable photonic logical gates*”, 2005 Israeli-Italian workshop on Optronics, Beer Sheva, Israel, December 2005.
- [31] **Ghelfi P.**, Secondini M., Scaffardi M., Fresi F., Bogoni A., and Potì L., “*Performance Improvement Of Band-Limited Receivers By Means Of An All-Optical Soft Limiter*”, 2005 Israeli-Italian workshop on Optronics, Beer Sheva, Israel, December 2005.
- [32] Ferianis M., Banchi L., Bogoni A., **Ghelfi P.**, and Potì L. "Preliminary Phase Noise Measurements on the PicoSource Fiber Laser", Workshop EuroFEL, France, Paris, November, 2005.
- [33] Berrettini G., Malacarne A., **Ghelfi P.**, Bogoni A., and Potì L., “*Reconfigurable all-optical logic gate based on a single SOA with improved dynamics*”, in Proc. OFC 2006.
- [34] Berrettini G., Meloni G., **Ghelfi P.**, Bogoni A., and Potì L., “*All-optical ultra-fast 2x2 switch based on XPM-induced polarization rotation in highly nonlinear fiber*”, in Proc. OFC 2006.
- [35] Enns K., Rogowski T., **Ghelfi P.**, Cugini F., Castoldi P., “*Reconfigurable Add/Drop Multiplexer Design to Implement Flexibility in Optical Networks*”, **invited paper**, in proc. ICTON 2006, Tu.A3.1.
- [36] Berrettini G., Lauri E., **Ghelfi P.**, Bogoni A., and Potì L. “*Ultra-Fast Integrable 2x2 All-Optical Switch for Optical Packet Routing*”, in Proc. ECOC 2006.
- [37] Malacarne A., Berrettini G., Meloni G., Ponzini F., Porzi C., Scaffardi M., **Ghelfi P.**, Bogoni A., and Potì L. "All-Optical Signal Processing Techniques for Future Optical Networks up to 160 Gbit/s", Summer School e-Photon /One, Italy, Cesenatico, September, 2005
- [38] Bogoni A., Lauri E., Berrettini G., Scaffardi M., Fresi F., **Ghelfi P.**, Bae J. K., Lee S. B., and Potì L., “*Asynchronous optical sampler for monitoring of 40 Gbit/s signals in C-band*”, in Proc. COIN 2006, WeB3-6, Hyatt Regency Jeju, Korea, July 9 - 13, 2006
- [39] Bogoni A., Lauri E., Berrettini G., Scaffardi M., Fresi F., **Ghelfi P.**, and Potì L. "Novel Asynchronous THz-Bandwidth Optical Sampling Oscilloscope for C-Band Signals", **invited paper**, 2006 Bilateral China-Italy Workshop on Photonics for Communication and Sensing, China, Xi'An, October, 2006
- [40] **Ghelfi P.**, Cugini F., Potì L., Bogoni A., Castoldi P., Di Muro R., Nayar B., “*Optical Cross Connects Architecture with per-Node Add&Drop Functionality*”, in Proc. OFC 2007.
- [41] Castoldi P., Cugini F., **Ghelfi P.**, Valcarenghi L., Franzl G., Gravey P., Morvan M., Rea L., Matera F., Wajda K., “*Design of Reliable Metro Core Networks*”, **invited paper**, in Proc. ICTON 2007, Tu.C3.3.
- [42] Scaffardi M., Fresi F., **Ghelfi P.**, Secondini M., Bogoni A., and Potì L. "Characterisation of an optically enhanced conventional 10 GHz receiver", SPIE Microtechnologies for the New Millennium 2007, Spain, Maspalomas, Gran Canaria, 2–4 May, 2007
- [43] **Ghelfi P.**, Cugini F., Potì L., Bogoni A., Castoldi P., Di Muro R., and Nayar B. "Architettura di nodo ottico trasparente con funzionalità di ADD&DROP condivisa", Fotonica 2007, Italy, Mantova, May 21-23, 2007

- [44] Bogoni A., **Ghelfi P.**, Potì L., Berrettini G., Meloni G., Scaffardi M., and Fresi F. "*Analisi delle prestazioni di un oscilloscopio a campionamento ottico asincrono a larga banda e basso rumore di fase*", Fotonica 2007, Italy, Mantova, May 21-23, 2007
- [45] Berrettini G., **Ghelfi P.**, Bogoni A., and Potì L. "*All-Optical Packet Routing based on Integrable 2x2 Switch for Data Packets up to 160 Gbit/s*", Photonics in Switching, USA, San Francisco, 19 – 22 August, 2007
- [46] **Ghelfi P.**, Cugini F., Di Muro R., Nayar B., Bogoni A., Potì L., and Castoldi P. "*Effective Strategy for Extending the Transparent Domain of Optical Mesh Networks*", International Symposium on Microwave and Optical Technology, Italy, Roma, December, 2007
- [47] Bogoni A., Potì L., Scaffardi M., Porzi C., **Ghelfi P.**, Meloni G., Berrettini G., Malacarne A., Fresi F., and Lazzeri E. "*Implementation of photonic digital signal processing subsystems based on discrete devices*", **invited paper**, Photonics in Switching, Workshop on "Digital photonics for signal processing in broad-band all-optical communications", California, San Francisco, 19th August, 2007
- [48] Cugini F., **Ghelfi P.**, Bogoni A., Valcarengi L., Castoldi P., Di Muro R., and Nayar B. "*RWA for Mitigating Power Excursion Effects in EDFA-based all-Optical Metro Networks*", ECOC 2007, Germany, Berlin, September, 2007
- [49] Banchi L., Ferianis M., Rossi F., Bogoni A., **Ghelfi P.**, and Potì L. "*Synchronization of a 3GHz Repetition Rate Harmonically Mode-Locked Fiber Laser for Optical Timing Applications*", DIPAC 2007, Italy, Mestre, May, 2007
- [50] **Ghelfi P.**, Scaffardi M., Porzi C., Potì L., and Bogoni A. "*Ultra-stable 12x10 GHz pulsed comb generation based on supercontinuum in a highly nonlinear fibre*", SPIE Microtechnologies for the New Millennium 2007, Spain, Maspalomas, Gran Canaria, 2–4 May, 2007
- [51] **Ghelfi P.**, Lazzeri E., Scaffardi M., Potì L., and Bogoni A. "*All-Optical Full Adder Exploiting Cascade of Semiconductor Optical Amplifier-Based Modular Blocks*", OFC 2008, USA, San Diego, CA, February, 2008
- [52] Lazzeri E., Fresi F., Malacarne A., Berrettini G., Meloni G., Porzi C., Scaffardi M., **Ghelfi P.**, Bogoni A., and Potì L. "*All-optical digital processing through semiconductor optical amplifiers: state of the art and perspectives*", **invited paper**, Photonic in Switching 2008, Japan, Sapporo, August, 2008
- [53] Lazzeri E., Fresi F., Malacarne A., Berrettini G., Meloni G., Porzi C., Scaffardi M., **Ghelfi P.**, Bogoni A., and Potì L. "*All-optical digital processing through semiconductor optical amplifiers: state of the art and perspectives*", **invited paper**, Korea-Italy Workshop 2008, Korea, Seoul, October, 2008
- [54] Pierno L., Dispenza M., Tonelli G., Bogoni A., **Ghelfi P.**, Potì L., "A photonic ADC for radar and EW applications based on modelocked laser", Microwave Photonics, 2008, MWP/APMP 2008, pp 236-239
- [55] Porzi C., Fresi F., Guina M., **Ghelfi P.**, Potì L., and Bogoni A. "*Wavelength Transparent and Power Level Tolerant All-Optical Packet Envelope Detection Circuit for Packet Switched Networks Applications*", CLEO 2009, USA, Baltimore, June, 2009, Digital Photonics Subsystems
- [56] Nguyen A., Lazzeri E., **Ghelfi P.**, Bogoni A., and Potì L. "*Precise Low-Cost Optical Time Multiplexer Based on the Birefringence of Polarization Maintaining Fibers*", ECOC 2009, Austria, Vienna, 12, 2009, Ultra-Fast Optical Subsystems
- [57] Cancelliere F., Fresi F., Lazzeri E., Nguyen A., Secondini M., **Ghelfi P.**, and Potì L. "*Power Optimization for Intensity and Time Jitter Characterization in Optical Frequency*

Multiplication and Time Multiplexing", Photonic in Switching 2009, Italy, Pisa, September 2009, 2009, Ultra-Fast Optical Subsystems

- [58] Scaffardi M., **Ghelfi P.**, Porzi C., Meloni G., Berrettini G., Malacarne A., Fresi F., Lazzeri E., Wang J., Wu X., Fazal I., Willner A., Potì L., and Bogoni A. "*Photonic Digital Processing for Enabling Next Generation Optical Networks*", **invited paper**, Photonics in Switching 2009, Italy, Pisa, September 15-19, 2009, Digital Photonics Subsystems, Ultra-Fast Optical Subsystems
- [59] **Ghelfi P.**, Berrettini G., Potì L., and Bogoni A. "*Performance Analysis of a Multiwavelength CW Laser Based on Supercontinuum Generation for WDM-PONs*", CLEO 2009, USA, Baltimore, June, 2009, Digital Photonics Subsystems
- [60] **Ghelfi P.**, Ma L., Wu X., Yao M., Willner A., and Bogoni A. "*All-optical parallelization for high sampling rate photonic ADC in fully digital radar systems*", Optical Fiber Communications, California, San Diego, 2010, Digital Photonics Subsystems, Ultra-Fast Optical Subsystems
- [61] **Ghelfi P.**, Serafino G., Berizzi F., Bogoni A., "Generation of Highly Stable Microwave Signals Based on Regenerative Fiber Mode Locking Laser", CLEO 2010, JWA47, San José, CA, USA
- [62] Trita A., Mezosi G., Latorre Vidal M.J., Zanola M., Cristiani I., Sorel M., **Ghelfi P.**, Bogoni A., Giuliani G., "10 Gb/s operation of Monolithic All-Optical Set-Reset Flip-Flop based on Semiconductor Ring Laser", CLEO2010, CThN3, San José, CA, USA
- [63] Ma L., **Ghelfi P.**, Yao M., Berizzi F., Bogoni A., "Effective Sample Parallelization in a Single Nonlinear Device for High Sampling Rate Photonic Assisted ADC", Photonics in Switching 2010, PWD1, Monterey, CA, USA
- [64] Fresi F., Nguyen A.T., **Ghelfi P.**, Potì L., Bogoni A., "640 GHz Real Time Optical Sampling of Microwave Signals", Photonics in Switching 2010, JTUB44, Monterey, CA, USA
- [65] Trita A., Mezosi, Latorre Vidal M.J., Zanola M., Sorel M., Cristiani I., **Ghelfi P.**, Bogoni A., Giuliani G., "Monolithic All-Optical Set-Reset Flip-Flop operating at 10 Gb/s", Photonics in Switching 2010, PWD5, Monterey, CA, USA
- [66] Lee K., Lee S.B., **Ghelfi P.**, Nguyen A., Potì L., and Prati G. "Multicasting in WDM-PON Using Cross-Gain Modulation in Semiconductor Optical Amplifier", ECOC 2010, Italy, Torino, September, 2010,
- [67] Laghezza F., Berizzi F., Capria A., Cacciavano A., **Ghelfi P.**, Serafino G., Bogoni A., "Reconfigurable Radar Transmitter Based on Photonic Microwave Signal Generation", EuRAD 2010, EuRAD19, Paris, France.
- [68] Bogoni A., **Ghelfi P.**, Andriolli N., Secondini M., D'Errico A., Grasso G., "Unbundling in WDM-PON Based on All-optical Switching", ONS05, GlobeCom 2010
- [69] Serafino G., **Ghelfi P.**, Villanueva G.E., Palacé J., Pérez-Millán P., Cruz J.L., Porzi C., Bogoni A., "Stable Optically Generated RF Signals from a Fibre Mode-Locked Laser", IEEE Photonics Society Annual Meeting 2010, TuK4, Denver, Co, USA
- [70] **Ghelfi P.**, Serafino G., Fresi F., Villanueva G.E., Pérez-Millán P., Cruz J.L., Berizzi F., Bogoni A., "Photonic generation of RF multiple carriers using a mode-locked laser and a single photodiode", Photonics West 2011, 7960-27, San Francisco, USA
- [71] **Ghelfi P.**, Scotti F., Nguyen A. T., Serafino G., Bogoni A., "Ultra-Stable Radar Signal from a Photonics-Assisted Transceiver Based on Single Mode-Locking Laser", OFC 2011, Los Angeles 2011.
- [72] Porzi C., Chin S., Trita A., Fresi F., Berrettini G., Mezosi G., **Ghelfi P.**, Giuliani G., Potì L., Sorel M., Thevenaz L., and Bogoni A. "All-Optical Self-Synchronizing Scheme for

Contention Resolution in Asynchronous Optical Packet Switched Networks Using Continuously Tunable Optical Delay Line", OFC 2011, USA, Los Angeles, March 6-10, 2011

- [73] Laghezza F., Scotti F., **Ghelfi P.**, Bogoni A., "Flexible Photonic Generation of Low-Phase-Noise Phase-Coded Radar Pulses", OPTR0-2012-093, OPTR0 2012 Symposium, Paris, Feb. 2012, **keynote talk**
- [74] **Ghelfi P.**, Scotti F., Laghezza F., Bogoni A., "Photonics Generation of Phase-Modulated RF Pulses with Carrier Frequency Agility for Software-Defined Coherent Radars", OW4H.6, OFC-NFOEC Conference, Los Angeles, CA, USA, March 2012
- [75] Scotti F., Laghezza F., **Ghelfi P.**, Bogoni A., "High-Stability Phase-Coded RF Pulses for Coherent Radars from a Mode-Locking Laser", OW4H.7, OFC-NFOEC Conference, Los Angeles, CA, USA, March 2012
- [76] Laghezza F., Scotti F., **Ghelfi P.**, Berizzi F., Bogoni A., "Photonic generation of microwave phase coded radar signal", International Conference on Radar System 2012, Glasgow, UK (2012)
- [77] **Ghelfi P.**, Serafino G., Scotti F., Laghezza F., Bogoni A., "Flexible Multi-Band OFDM Receiver Based on Optical Down-Conversion for Millimeter Waveband Wireless Base Stations", P6.06, ECOC 2012, Amsterdam, The Netherlands, 2012.
- [78] Bogoni A., **Ghelfi P.**, Serafino G., Laghezza F., and Scotti F., "Photonics Techniques for the Flexible Generation of Ultra-Stable Microwave and Millimeterwave Radar Signals" – POEM 2012, **invited talk**, Wuhan, China – 2012
- [79] **Ghelfi P.**, Bogoni A., "Design of Flexible Photonics-Based RF Transmitter and Receiver for Future Mobile Networks", Codec 2012, T2-A-OLT-22-476, Kolkata, India, 2012.
- [80] Laghezza F., Scotti F., Pinna S., **Ghelfi P.**, Bogoni A., "Jitter-Limited Photonic Analog-to-Digital Converter with 7 Effective Bits for Wideband Radar Applications", 5210, IEEE International Radar Conference 2013, Ottawa, Canada.
- [81] Scotti F., Laghezza F., Pinna S., **Ghelfi P.**, and Bogoni A., "High Precision Photonic ADC with Four Time-Domain-Demultiplexed Interleaved Channels", Photonics in Switching 2013, TuO1-3, Osaka.
- [82] **Ghelfi P.**, Laghezza F., Scotti F., Serafino G., S. Pinna, Bogoni A. "Photonic-assisted RF transceiver", **invited paper**, ECOC 2013, We.4.F.3, London, UK, 2013
- [83] Scotti F., **Ghelfi P.**, Laghezza F., Serafino G., Pinna S., Bogoni A., "Flexible True-Time-Delay Beamforming in a Photonics-Based RF Broadband Signals Generator", ECOC 2013, Th.2.B.5, London, UK, 2013
- [84] **Ghelfi P.**, Laghezza F., Scotti F., Serafino G., S. Pinna, Bogoni A. "PHODIR: Photonics-based fully digital radar system", **invited paper**, 2013 IEEE International Topical Meeting on Microwave Photonics (MWP), Alexandria, Virginia, USA.
- [85] Pierno L, Fiorello A.M., Bogoni A., **Ghelfi P.**, Laghezza F., Scotti F., Pinna S., "Optical switching matrix as Time Domain Demultiplexer in photonic ADC", European Microwave Integrated Circuits Conference 2013, EuMIC03.3, Nurberg, Germany, 2013

PATENTS

- [1] Patent with Marconi Communications: "*Polarization maintaining optical VCO based on active mode locking fiber technique in regenerative configuration*", Bogoni A., Potì L., and **Ghelfi P.**, Italy, 2002
- [2] Patent with Marconi Communications: "*Rigeneratore di impulso ottico per sistemi di trasmissione con bit rate elevati*", Bogoni A., **Ghelfi P.**, Scaffardi M., and Potì L., Italy, 2003

- [3] Patent with Marconi Communications: "*Ultra-fast reconfigurable regenerative all-optical logic gates*", Bogoni A., Potì L., **Ghelfi P.**, and Ponzini F., Italy, 2005
- [4] Patent with Marconi Communications: "*Reconfigurable Optical Cross Connect (OXC) based on Wavelength Selective Switches (WSS)*", **Ghelfi P.**, Cugini F., Rogowski T., Enns K., Castoldi P., Di Muro R., Nayar B., 2006
- [5] Patent with Marconi Communications: "*Additional All-Optical Decision Element in order to Improve the Performance of Band-Limited Receivers in RZ Systems*", **Ghelfi P.**, Scaffardi M., Bogoni A., and Potì L., 2007
- [6] Patent with Marconi Communications: "*All-Optical Full Adder Exploiting Cascade of Semiconductor Optical Amplifier-Based Modular Blocks*", Bogoni A., Potì L., Scaffardi M., **Ghelfi P.**, and Lazzeri E., Italy, 2007
- [7] Patent with Marconi Communications: "*Low Bit Rate Ultra Short and Tunable Width Pulse Generation by means of Steep Edge Control of a Mach Zehnder Modulator*", Bogoni A., Potì L., **Ghelfi P.**, and Lazzeri E., Italy, 2007
- [8] Patent with Marconi Communications: "*Polarization Maintaining Optical Short Pulsed Comb Generator in the Whole C-Band*", Bogoni A., Potì L., **Ghelfi P.**, and Scaffardi M., Italy, 2007
- [9] Patent with Ericsson - Marconi: "*Optical integrable label extractor based on Semiconductor Optical Amplifiers*", Bogoni A., Potì L., Scaffardi M., and **Ghelfi P.**, Italy, 2008
- [10] Bogoni A., Andriolli N., Potì L., **Ghelfi P.**, and D'Errico A., "*Unbundling in WDM-PON Based on All-optical Switching*", -, Italy, 2009
- [11] **Ghelfi P.**, Bogoni A., and Potì L., "Schema e metodo per la parallelizzazione dei campioni di un segnale a radiofrequenza ottenuti per campionamento ottico ad elevata frequenza di campionamento, basata sull'effetto di four wave mixing ", Italy, 2009 PI2009A000162
- [12] **Ghelfi P.**, Bogoni A., and Potì L., "All-optical demultiplexer for unbundling solving in WDM PONs", , Italy, 2009
- [13] **Ghelfi P.**, Bogoni A., "METODO E APPARATO PER LA GENERAZIONE OTTICA DI SEGNALI A RADIOFREQUENZA PER RADAR CON RICEVITORE A CAMPIONAMENTO OTTICO", Italy, 2010, PI2010A000108
- [14] **Ghelfi P.**, Scotti F., Laghezza F., and Bogoni A., "*PHOTONIC RF GENERATOR*", P35908, Italy, 2012

BOOK CHAPTERS

- [1] Bogoni A., **Ghelfi P.**, Lazzeri E., Potì L., Scaffardi M., and Fresi F. - Optical Fibre, New Developments, "Fibre Based Schemes for Ultrafast Subsystems: Nonlinear Optical Loop Mirrors Traditional Design and Novel Applications.", I-Tech Education and Publishing KG, Austria - Vienna, 2009
- [2] Bogoni A., Berrettini G., **Ghelfi P.**, Malacarne A., Meloni G., and Potì L. - Semiconductor Technologies, "*All-optical flip-flops based on semiconductor technologies*", In-Tech, Austria - Vienna, 2009