

EDUCATION

- Feb. 2012 – Feb. 2015 **PhD Elect. & Telecomm. Engineering** Politecnico di Torino, Italy
- Mar. 2009 – Jan. 2011 **MSc Electrical Engineering** University of Engineering and Technology, Taxila
(3.79 / 4.00 CGPA)
- Oct. 2004 – Sept. 2008 **BSc Electrical Engineering** University of Engineering and Technology, Taxila
(A+ Grade, 84.7%)

PhD THESIS

- Design of Ad-Hoc Algorithms for Performance Optimization of High-Order Modulation Formats in Coherent Optical Transmission Systems
Focused on **Carrier Phase Estimation (CPE)** and Compensation algorithms, **Blind Modulation Format Identification (MFI)** for coherent optical systems and **Automatic Bias Control** of Mach-Zehnder Modulators.

MSc THESIS

- Simulation of EDFA/RAMAN Hybrid Amplifier achieving Gain Flattening for Long Haul DWDM Systems.

FINAL YEAR BSc ENGINEERING PROJECT

- Implementation of AM, FM and OFDM modules of Software Defined Radio (SDR) on USRP Board.

SELECTED PUBLICATIONS

- **S. M. Bilal**, G. Bosco, Z. Dong, A. P. T. Lau, C. Lu, "Blind Modulation Format Identification for Digital Coherent Receivers," *Optics Express*, September 2015 (accepted), .
- S. Abrate, A. Nespola, L. Bertignono, G. Bosco, A. Carena, Y. Jiang, **S. M. Bilal**, P. Poggioilni, F. Forghieri, "Experimental Demonstration of Fiber Nonlinearity Mitigation in a WDM Multi-Subcarrier Coherent Optical System," in *Proc. of ECOC 2015, Valencia (Spain)*, September 2015 (accepted).
- J. Cheng, M. Tang, A. P. T. Lau, C. Lu, L. Wang, Z. Dong, **S. M. Bilal**, S. Fu, P. P. Shum, D. Liu "Pump RIN-induced impairments in unrepeated transmission systems using distributed Raman amplifier," *Optics Express*, vol. 23, no. 9, pp. 11838 – 11854.
- **S. M. Bilal**, G. Bosco, J. Cheng, A. P. T. Lau, C. Lu, "Carrier Phase Estimation through the Rotation Algorithm for 64-QAM Optical Signals," *Lightwave Technology, Journal of*, vol. 33, no. 9, pp. 1766 – 1773.
- **S. M. Bilal**, G. Bosco, J. Cheng, A. P. T. Lau, C. Lu, "Performance and Complexity Comparison of CPE Algorithms for 256-QAM Optical Signals," in *Proc. of OFC/NFOEC 2015, Los Angeles*, paper W1E.6, March 2015.
- **S. M. Bilal**, K. P. Zhong, J. Cheng, A. P. T. Lau, G. Bosco, C. Lu, "Performance and Complexity Comparison of Carrier Phase Estimation Algorithms for DP-64-QAM Optical Signals," in *Proc. of ECOC 2014, Cannes (France)*, paper P.3.11, September 2014.
- **S. M. Bilal**, G. Bosco, A. P. T. Lau, C. Lu, "Linewidth-tolerant Feed-forward Dual-stage CPE Algorithm Based on 64-QAM Constellation Partitioning," in *Proc. of ECOC 2014, Cannes (France)*, paper P.3.24, September 2014.
- **S. M. Bilal**, C. R. Fludger, G. Bosco, "Multi-Stage CPE Algorithms for 64-QAM Constellations," in *Proc. of OFC/NFOEC 2014, San Francisco*, paper M2A.8, March 2014.
- **S. M. Bilal**, V. Curri, C. Fludger and G. Bosco, "Multi-stage CPE algorithms for phase noise mitigation in 64-QAM optical systems," *Lightwave Technology, Journal of*, vol. 32, no. 17, pp. 2973 – 2980.

SYED MUHAMMAD BILAL

AWARDS AND ACHIEVEMENTS

- Won Higher Education Commission **scholarship** for PhD (2012).
- **Certificate of Merit** in MSc Electrical Engineering (2011).
- Among the **Top Five** Students of BSc Electrical Engineering and have done it with Honors (2008).
- Distinction in College Board Exams (**Shield Awarded By College**) in 2004.
- Distinction and **2nd Position** in School in Matriculation Exams (2002).
- Remain on Top Position from **1st Grade** to **9th Grade**.
- **2nd Position** in All Pakistan Debates at Secondary Level (1998)
- Member of **Young Speakers Society** at School.

PROFESSIONAL MEMBERSHIPS

- Member Pakistan Engineering Council (PEC).
- Member IEEE.