CURRICULUM VITAE

Name	**Gabriella**
Surname	**BOSCO**
Date of birth	1 November 1973
Place of birth	Ivrea, Italy
Address	Dipartimento di Elettronica e Telecomunicazioni Politecnico di Torino C.so Duca Degli Abruzzi 24 10129 Torino, Italy
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EDUCATION

May 1998
Master of Science degree in "Telecommunication Engineering" from Politecnico di Torino (summa cum laude).
MSc thesis title: "Nonlinear propagation effects in WDM fiber optical transmission systems".

February 2002
PhD in "Electronic and Communication Engineering" from Politecnico di Torino.
PhD thesis title: "Performance analysis of optical communication systems"

PROFESSIONAL AND RESEARCH EXPERIENCE

1st October 2014 – Present
Associate Professor
Department of Electronics and Telecommunications, Politecnico di Torino.

1st August 2011 – 30th September 2014
Assistant Professor
Department of Electronics and Telecommunications, Politecnico di Torino.

1st November 2001 – 31st July 2011
Post-doc researcher
Optical Communications Group, Politecnico di Torino.

March – December 2000
Visiting researcher
Optical Communications and Photonic Networks Group, University of California, Santa Barbara

AWARDS AND HONORS

2015
Co-author of the paper winner of the **"2012 JLT Best Paper Award"**:
A. Carena, V. Curri, G. Bosco, P. Poggiolini, F. Forghieri, "Modeling of the Impact of Non-Linear Propagation Effects in Uncompensated Optical Coherent Transmission Links," Journal of Lightwave Technology, vol. 30, no. 10, pp. 1524-1539, May. 15, 2012.

2014
Elevation to the **OSA Senior Member** grade

First author of the paper winner of the **"2011 JLT Best Paper Award"**:
G. Bosco, V. Curri, A. Carena, P. Poggiolini, F. Forghieri "On the Performance of Nyquist-WDM Terabit Superchannels Based on PM-BPSK, PM-QPSK, PM-8QAM or PM-16QAM Subcarriers", Journal of Lightwave Technology, vol. 29, no. 1, pp. 53-61, Jan. 1, 2011.

2013
Elevation to the **IEEE Senior Member** grade

PARTICIPATION IN THE EDITORIAL BOARD OF MAJOR INTERNATIONAL JOURNALS

January 2014-Present
Associate Editor for **IEEE/OSA Journal of Lightwave Technology**

PARTICIPATION IN TECHNICAL COMMITTEES OF NATIONAL AND INTERNATIONAL CONFERENCES

OFC 2017
Program Chair

IPC 2017 (the IEEE Photonics Society Conference)
Technical committee member
Subcommittee: “Optical communications”

OFC 2016
Technical committee member
S4: “Digital electronic subsystems and transceivers”

OFC 2015
Subcommittee Chair
S4: “Digital electronic subsystems and transceivers”

ACP 2015 (Asia Communications and Photonics Conference)
Subcommittee Co-chair
Track 3 “Optical Transmission Systems, Subsystems and Technologies”

FOTONICA 2015
Technical Program Chair
Italian National Conference on Photonic Technologies (www.fotonica2015.it/ENG/)

Tyrrhenian Workshop on Digital Communications 2015
Technical committee member

OFC 2013, OFC 2014
Technical committee member
Subcommittee 10 “Transmission Subsystems and Network Elements”

CLEO 2012, CLEO 2103, CLEO 2014 (CLEO - Science & Innovations)
Technical committee member
Subcommittee S&I 12 “Lightwave Communications and Optical Networks”

ORGANIZATION OF INTERNATIONAL WORKSHOPS

2016
Organization, together with Han Henry Sun from Infinera, of a workshop entitled “To serialize or not to serialize? Practical approaches for coherent transmission at and beyond 400G”,that was held in March 2016 in Anaheim (USA), during the international conference OFC 2016.

2013
Organization, together with Chris Fludger from Cisco and Ezra Ip from NEC Labs, of a workshop entitled “Paths to additional capacity/performance gain: How far can we go and is it worth the price?”, that was held in March 2013 in Anaheim (USA), during the international conference OFC 2013.

2005
Organization, in the framework of the Network of Excellence “e-photon/One” (http://www.e-photon-one.org/), of a workshop entitled “Applying communications theory advanced techniques to the future generation of optical transmission systems”, held in February 2005 in Aveiro (Portugal), during the Plenary Meeting.

PUBLICATIONS IN INTERNATIONAL JOURNALS AND CONFERENCES

Since 1999, I’ve co-authored more than 170 papers in major international journals and conferences. The complete list of publications until 2015 can be found in:

http://porto.polito.it/view/creators/Bosco=3AGabriella=3A009761=3A.html

Recent publications:

- P. Poggiolini; A. Nespola; Y. Jiang; G. Bosco; A. Carena; L. Bertignono; S. M. Bilal; S. Abrate; F. Forghieri , “Analytical and Experimental Results on System Maximum Reach Increase Through Symbol Rate Optimization”, Journal of Lightwave Technology, Year: 2016, Volume: 34, Issue: 8, Pages: 1872 – 1885.

- A. Nespola, Y Jiang, L Bertignono, G Bosco, A Carena, SM Bilal, “Effectiveness of digital back-propagation and symbol-rate optimization in coherent WDM optical systems,”.Optical Fiber Communication Conference, Anaheim, March 2016, paper Th3D. 2

- Impact of the transmitter IQ-Skew in multi-subcarrier coherent optical systems G Bosco, SM Bilal, A Nespola, P Poggiolini, F Forghieri Optical Fiber Communication Conference, Anaheim, March 2016, paper W4A. 5

- G. Bosco, “Spectrally Efficient Multiplexing: Nyquist-WDM, Chapter 4 in book Enabling Technologies for High Spectral-efficiency Coherent Optical Communication Networks, edited by Xiang Zhou and Chongjin Xie, Wiley, 2016.

Google scholar profile:

http://scholar.google.it/citations?hl=en&user=pXn01rsAAAAJ

INVITED TALKS/PAPERS IN INTERNATIONAL CONFERENCES/JOURNALS

2016

- P. Poggiolini, A. Nespola, Y. Jiang, G. Bosco, A. Carena, L. Bertignono, S. M. Bilal; S. Abrate; F. Forghieri, "Analytical and Experimental Results on System Maximum Reach Increase Through Symbol Rate Optimization", J. Lightw. Technol., vol. 34, no. 8, Apr, 2016, p.1872.

2015

- R. Pastorelli, G. Bosco, S. Piciaccia, F. Forghieri, "Network Planning Strategies for Next-Generation Flexible Optical Networks", Journal of Optical Communications and Networking, vol. 7, no. 3, pp. A511-A525, (2015)
- F.P. Guiomar, S.B. Amado, A. Carena, G. Bosco, A. Nespola, A.L. Teixeira, A.N. Pinto, "Fully Blind Linear and Nonlinear Equalization for 100G PM-64QAM Optical Systems", Journal of Lightwave Technology, vol. 33, no. 7, pp. 1265- 1274, Apr. 1, 2015.
- P. Poggiolini, G. Bosco, A. Carena, V. Curri, Y. Jiang, S. M. Bilal, A. Nespola, L. Bertignono, S. Abrate, F. Forghieri "Theoretical and Experimental Assessment of Nonlinearity Mitigation through Symbol Rate Optimization", Tyrrhenian International Workshop on Digital Communications, Florence (Italy), 22 Sep. 2015, paper P3.1.

2014

- P. Poggiolini, G. Bosco, A. Carena, V. Curri, Y. Jiang, F. Forghieri, "The GN-Model of Fiber Non-Linear Propagation and its Applications," IEEE Journal of Lightwave Technology, vol. 32 , no. 4, Feb. 2014,pp. 694 – 721.

2013

- Nespola, S. Straullu, G. Bosco, A. Carena, Y. Jiang , P. Poggiolini, F. Forghieri, Y. Yamamoto, M. Hirano, T. Sasaki, J. Bauwelinck, K. Verheyen, "1306-km 20×124.8-Gb/s PM-64QAM transmission over PSCF with net SEDP 11,300 (bkm)/s/Hz using 1.15 samp/symb DAC," proc. of ECOC 2013, paper Th.2.D.1, London, Sep. 2013.

2012

- G. Bosco, "Spectral Shaping: Optical vs. Electrical Approaches", Optical Fiber Conference (OFC) 2012, Los Angeles (USA), March 2012, Invited Paper OM3H.1.
- G. Bosco, "Spectrally Efficient Transmission: a Comparison between Nyquist-WDM and CO-OFDM Approaches", SPPCom 2012, Colorado Springs (USA), June 2012, SPW3B.1.

2011

- G. Bosco, A. Carena, "Performance Evaluation of Coherent PS-QPSK (HEXA) Modulation", Signal Processing in Photonic Communications (SPPCom) 2011, Toronto (Canada), June 2011, Invited Paper SPTuB2

2010

- G. Bosco, "Is Nyquist WDM the Optimum Format for Spectrally Efficient Terabit Superchannel Transmission?", ECOC 2010, Torino, Sep. 2010, invited talk in the Workshop on "Single and Multi-Carrier Techniques to Build Terabit/s per Channel Optical Transmission Systems"
- Carena, G. Bosco, V. Curri, "Coherent polarization-multiplexed formats: receiver requirements and mitigation of fiber non-linear effects", in Proc. of ECOC 2010, Torino (Italy), Invited Paper, paper Mo.2.C.1, Sep. 2010.

PEER AND EXTERNAL REVIEW ACTIVITIES

2016

- **Jury member for the PhD thesis defense** of Rafael Rios Müller at Télécom ParisSud / Nokia Bell Labs (France). Title of the thesis: " Advanced modulation formats and signal processing for high speed spectrally efficient optical communications".
- Member of the "**IEEE Photonics Society Distinguished Lecturer Committee**"

2015

- **External reviewer** for the evaluation of research projects funded by the Hong-Kong "Research Grants Council" (RGC).
- Member of the "**IEEE Photonics Society Distinguished Lecturer Committee**"
- **Jury member for the PhD thesis defense** of Elie Awwad at Telecom ParisTech in Paris. Title of the thesis: "Emerging Space-Time Coding Techniques for Optical Fiber Transmission Systems".
- **Jury member for the PhD thesis defense** of Milen Paskov at University College London. Title of the thesis: Algorithms and subsystems for next generation optical networks.".

2014

- **External reviewer** for the evaluation of research projects funded by the Hong-Kong "Research Grants Council" (RGC).
- **External reviewer** for the evaluation of research projects funded by the "Fund for Scientific Research-FNRS" (Belgium), in the framework of the "Credits & Projects 2014" call.
- Member of the "**IEEE Photonics Society Distinguished Lecturer Committee**"

2013

- **External reviewer** for the evaluation of research projects funded by the "Fund for Scientific Research-FNRS" (Belgium), in the framework of the "Credits & Projects 2013" call.

2010

- **Jury member for the PhD thesis defense** of Oriol Bertran-Pardo at Telecom ParisTech in Paris. Title of the thesis: "On coherent detection for optical transmissions at 40 Gb/s and 100 Gb/s". The thesis was developed in the research laboratories of Alcatel-Lucent in Paris.

2000-Present

Reviewer for major international journals, among which:

- IEEE Photonics Technology Letters (~40 reviewed papers since 2000)
- IEEE Journal of Lightwave Technology (~30 reviewed papers since 2000)
- OSA Optics Express (~20 reviewed papers since 2009)
- IEEE Communication Letters, IEEE Transactions on Communications, OSA Optics Letters,
- IEE Electronics Letters, IET Optoelectronics

SCIENTIFIC PARTICIPATION IN NATIONAL AND INTERNATIONAL RESEARCH PROJECTS, BASED ON CALLS THAT INVOLVED COMPETITIVE PEER REVIEW

May 2008-April 2012
Network of Excellence of 7th ICT-Framework Programme: **Euro-FOS**
(http://www.euro-fos.eu/)

October 2010-March 2011
Network of Excellence of 7th ICT-Framework Programme: **ALPHA**
(http://www.ict-alpha.eu/)

February 2008-February 2011
Network of Excellence of 7th ICT-Framework Programme: **BONE**
Euro-FOS (http://www.euro-fos.eu/)

March 2006-February 2008
Integrated Project of 6th ICT-Framework Programme: **Nobel2**
(http://www.ist-nobel.org/Nobel2/)

March 2006-February 2008
Network of Excellence of 6th ICT-Framework Programme: **E-Photon/One+**
(http://www.e-photon-one.org/ephotonplus/)

January 2004-December 2005
Network of Excellence of 6th ICT-Framework Programme: **E-Photon/One**
(http://www.e-photon-one.org/)

December 2005 – November 2006
PRIN 2004: "Transmission of Optical Signals exploiting Competitive Amplification techniques **(TOSCA)",** funded by the Italian Ministry of University and Research.

PARTICIPATION IN RESEARCH PROJECTS FUNDED BY NATIONAL AND INTERNATIONAL INDUSTRIES

CISCO Systems (January 2009 – Present)
Research activity on long-haul coherent optical transmission systems.

Telecom Italia (2010 – 2013)
Research activity on technological solutions for NG-PON access networks.

HUAWEI (2008 –2009)
Research activity on analysis and development of MLSE algorithms for the compensation of chromatic dispersion and polarization mode dispersion in high bit-rate optical systems.

ESA – European Space Agency (2003 – 2005).
Research activity on multi-level modulation schemes using LDPC forward error correction codes.

ACADEMIC ACTIVITY

Since 2004, I've been teaching several classes in "Signal Theory", "Digital Communications" and "Optical Communications" in the framework of the Bachelor and Master (1st and 2nd level) degrees in Electronic Engineering, Telecommunication Engineering and Optical Communications at Politecnico di Torino (see list below for details).

I am member of the Academic Senate of Politecnico diTorino and of the "Giunta del Collegio" of Electronic, Telecommunication and Physic Engineering.

Since 2007, I've been supervising the activity of several Master and PhD students.

TEACHING HISTORY AS LECTURER

A.Y. 2012-2013, 2013-2014, 2014-2015, 2015-2016
- **Signal theory and signal processing**, Politecnico di Torino, Bachelor program in Computer Engineering.

A.Y. 2011-2012
- **Introduction to Digital Transmission**, Politecnico di Torino, Second Level Specializing Master in "Optical Communication and Photonic Technologies".
- **Digital Transmission**, Politecnico di Torino, Second Level Specializing Master in "Network innovations and services for ICTs".

A.Y. 2009-2010
- **Foundations of Digital Transmission**, Politecnico di Torino, Second Level Specializing Master in "Optical Communication and Photonic Technologies".

A.Y. 2006-2007 , 2007-2008
- **Telecommunications: introduction**, Politecnico di Torino, Master of Science program in Nanotechnologies for ICTs (Torino/Grenoble/Losanna).
- **Foundations of communication theory**, Politecnico di Torino, Bachelor program in Information Engineering.

TEACHING HISTORY AS ASSISTANT

A.Y. 2011-2012, 2012-2013, 2013-2014
- **Computer Aided Design of Communication Systems**, Politecnico di Torino, Master of Science program in Electronic and Telecommunication Engineering.

A.Y.2006-2007, 2007-2008, 2008-2009, 2009-2010
- **Elements of Communication Theory**, Politecnico di Torino, Bachelor program in Electronic Engineering.

A.Y. 2008-2009
- **Signal theory**, Politecnico di Torino, Bachelor program in Electronic and Computer Engineering.

A.Y. 2007-2008
- **Optical Transmission I** and **Optical Transmission II**, Politecnico di Torino , Second Level Specializing Master in "Optical Communication and Photonic Technologies".

A.Y. 2004-2005, 2006-2007
- **Optical fiber transmission II**, Politecnico di Torino, Master of Science program in Telecommunication Engineering.