

*Antonio Mecozzi* was born in Rome, on March 19, 1959. He obtained the “laurea” degree cum laude in Chemical Engineering from the University of Rome on November 28, 1983, with a thesis entitled “Stochastic models of chemical reactive systems: fluctuations and stability of thermodynamic systems far from equilibrium,” advisor Prof. Ferdinando de Pasquale of the Physics Department of the University.

After serving the Italian Army, he earned a one-year fellowship at the Fondazione Ugo Bordoni from November 1985. On December 1986 he joined the Optical Communication Division of the Fondazione Ugo Bordoni as a research scientist.

From February 1991 through June 1992 he was a visiting scientist at the Research Laboratory of Electronics and with the Department of Electrical Engineering and Computer Science of Massachusetts Institute of Technology, Cambridge, MA. He worked in the group of Prof. Hermann Haus on soliton transmission control and noise theory of passively mode-locked lasers. The financial support was from February 1991 through December 1991 a NATO fellowship, and a visiting research fellowship from MIT, January 1992 through June 1992.

On June 1992 he returned to the Optical Communication Division of the Fondazione Ugo Bordoni. He became on August 1993 a Senior Research Scientist of the same Division.

From the summer of 1994, he visited the Department of Electrical Engineering of Northwestern University, Evanston, Illinois, performing research on quantum optics and nonlinear optics.

On October 22, 1998, after passing a nationwide competition, with a dissertation on “Bunching and anti-bunching of light,” he has been appointed as an Associate Professor of Structure of Matter by the Italian Ministry for University and Research, and a Professor on September 2001. Until 2012 he was a Professor with the Electrical Engineering Department of the University of L’Aquila, Italy, and was from 2012 to 2018 the Director of the Department of Physical and Chemical Sciences of the University of L’Aquila. He is the coordinator of the PhD studies in Chemistry and Physics of the same University.

From 1999 to 2001, he was a consultant with the Advanced Lightwave Systems group of the AT&T Laboratory Research, Red Bank, New Jersey, USA.

From 2001 to 2003, he was consultant with Celion Networks, Tinton Falls, New Jersey, USA.

From 1995 to 1998, he was the Chairman of Working Group 3, “Optical Nonlinearity of Photonic Devices,” of the European collaboration COST 240.

From March 1996 to February 2002, he has been a Topical Editor of the Journal published by the Optical Society of America Optics Letters (topic: Nonlinear Optics). He has been the first European Topical Editor of the Journal.

From April 2002 to June 2007 he has been an Associate Editor of the Journal published by the IEEE Photonics Technology Letters.

From October 2002–October 2004 he has been the Technical Group Chair of the Optical Amplifier Technical Group (within the Photonics Division) of the Optical Society of America. Member of the Optics Letters Review Committee (2007-2008).

Optics Letters Deputy Editor (2008 – 2013)

Associate Editor Optics Express (August 2014-August 2020)

Associate Editor of Optica (August 2020-present)

Member of the John Tyndall award (jointly sponsored by IEEE and OSA) review committee (2008 and 2009).

Member of the 2019, 2020 and 2021 Photonics Society Joint Awards Committee.

Member of the 2021 OSA Fellow Members Committee.

He was a guest Editor (together with Stephen G. Evangelides Jr., Tyco Submarine Systems, Ltd., Curtis R. Menyuk, University of Maryland, and Ping-Kong (Alex) Wai, Hong Kong Polytechnic University) of the Special issue on Modeling of High Data Rate Optical Fiber Communication Systems of the March/April 2000 issue of IEEE Journal of Selected Topics in Quantum Electronics.

On February 4, 1999, he has been elected to the grade of Fellow of the Optical Society of America (OSA). The motivation reads “for his significant contributions in the theory of long-haul soliton transmission control and wavelength conversion using semiconductor optical amplifiers.” On November 17, 2002 he was elected by the IEEE Board of Directors an IEEE Fellow with the following citation: “for contributions to the theory of nonlinear transmission in optical fibers.”

Program committee of:

OSA topical meeting Nonlinear Guided Waves and their applications, Subcommittee I, Nonlinear Fiber effects and temporal solitons, Victoria, British Columbia, Canada, March 30-April 3, 1998

OSA topical meeting Optical Amplifiers and their Applications '98, Subcommittee Semiconductor Devices and Functional Circuits, Vail, Colorado, July 27-29 1998.

OSA topical meeting Optical Amplifiers and their Applications '99, Subcommittee Semiconductor Devices and Functional Circuits, Nara, Japan, June 9-11, 1999.

OSA Conference Optical Fiber Communications Conference OFC 2000, Baltimore, Maryland. Subcommittee: Transmission systems (attendance: 16,000)

OSA Conference Optical Fiber Communications Conference OFC 2002, Anaheim, CA. Subcommittee 6: Subsystems, Network Elements, and Analog Systems., March 17-22 2002. IEEE-LEOS 2002 Annual Meeting, Nonlinear Optics organizing committee, Glasgow, Scotland, November 11-14, 2002.

OSA Conference Optical Fiber Communications Conference OFC 2003, Atlanta, Georgia. Subcommittee G, “Subsystems, Network elements and analog systems.” March 25-27 2003. IEEE-LEOS 2003 Summer Topical Meeting, 14 – 16 July 2003, Vancouver, British Columbia, CANADA.

ECOC, member of the technical program committee (2013, 2014)

Chair of the Subcommittee “Semiconductor device and functional circuits” of the OSA Topical meeting Optical Amplifiers and Their Applications 2000, July 9-12, 2000 in Quebec City, Quebec, Canada (attendance: about 500).

Program co-Chair, together with Makoto Shimizu, NTT Photonic Laboratory, Japan, and John Zykind, Sycamore Networks, USA, of the OSA Topical meeting Optical Amplifiers and Their Applications 2001, July 1-4, 2001, Stresa, Italy.

General co-Chair, together with Makoto Shimizu, NTT Photonic Laboratory, Japan, and John Zykind, Sycamore Networks, USA, of the OSA Topical meeting Optical Amplifiers and Their Applications 2002, Hotel Fairmont Vancouver, Vancouver, Canada, July 14-17, 2002.

Program Co-Chair della 44th EUROPEAN CONFERENCE ON OPTICAL COMMUNICATION (ECOC 2018) Roma, September 23-27, 2018.

Short course at OFC 2002 and 2004, together with Mark Shtaif, “Fundamentals in fiber optics communication systems.”

Short course at ECOC 2005, 2006 “Fundamentals in fiber optics communication systems.”

He is was in the International Advisory board of the 4th International Conference on Quantum Communications Measurement and Computing, Evanston, Illinois, USA, August 22-27 1999, and of the 5th International Conference on Quantum Communications Measurement and Computing, Capri, July 2000.

Coauthor of the book:

E. Iannone, F. Matera, A. Mecozzi, M. Settembre "Nonlinear Optical Communication Networks" Wiley Series in Microwave and Optical Engineering Series, Kai Chang, Series Editor, Wiley Interscience, New York, April 1998.

Teaching

Antonio Mecozzi teaches undergraduate and graduate level courses to Physics and Electrical Engineers major students at the University of L'Aquila

Main Research Activities

- 1) Stochastic theory of the transient of chemical reactions.
- 2) Quantum Optics, and in particular, theory of the interference between macroscopic quantum states and the theory of squeezed states.
- 3) Phase noise in semiconductor lasers.
- 4) Stochastic theory of the transient in mono- and multi-mode semiconductor lasers.
- 5) Erbium doped fiber amplifiers.
- 6) Nonlinear Optics in fibers.
- 7) Injection locking of semiconductor lasers.
- 8) Four wave mixing in semiconductor lasers.
- 9) Noise theory of passively mode-locked lasers..
- 10) Theory of soliton propagation in fiber and soliton transmission control.
- 11) Noise theory of non-return-to-zero long-haul optical transmission.
- 12) Theory of squeezing of optical solitons.
- 13) Theory of optical nonlinearities in semiconductor optical amplifiers.
- 14) Theory of polarization-mode dispersion in fiber transmission systems
- 15) Theory of highly dispersed short pulse transmission.
- 16) Theory of capacity of optical transmission systems
- 17) Theory of polarization dependent loss.
- 18) Theory of linear and nonlinear transmission in few mode fibers.

Patents

He holds 2 Italian Patents (IT1293090, 1999-02-11 and IT12888385, 1998-09-22), both on mid-span spectral inversion and frequency conversion using FWM in SOAs, with FUB; 4 US patents (with AT&T labs research) and 1 WO with Ramot (Israel)

1. Methods and systems for polarization mode dispersion compensation (Antonio Mecozzi, Jonathan A. Nagel, Mark Shtaif and Moshe Tur) [filed on August 29, 2000, issued January 6, 2004, US Patent 6,674,972.]

2. Method and system for reducing intra-channel nonlinear effects in highly dispersed optical pulse transmission. (Carl B. Clausen, Antonio Mecozzi, and Mark Shtaif) [provisional application No. 60/219,355 filed on July 19, 2000, patent application No. 60/267,724 filed on February 2, 2001, with AT&T]

3. Modulation Scheme for Tedons, [Optimization of the pre-compensation in a high bit-rate transmission using highly dispersed optical pulses (tedons).] (Antonio Mecozzi, Mark Shtaif, Alan H. Gnauck, and Jay M. Wiesenfeld) [filed on September 12, 2002, US Patent Application 200020126359, with AT&T].

4. Mikhail Brodsky, Peter Magill, Mikhail Borodistsky, Antonelli Cristian, and Antonio Mecozzi, Method and Apparatus for measuring the birefringence correlation length in optical fiber, [filed on Dec. 10, 2007, published on June 11, 2009 US Patent Pub. No.: US 2009/0147244 A1, with AT&T]

5. M. Shtaif, A. Mecozzi, C. Antonelli, Kramers-Kronig receiver WO2017212492A1 (with Ramot, Israel)

Citation metrics: ISI 6300 citations, H-index di 44 (Researcher ID: D-8464-2011, <http://www.researcherid.com/rid/D-8464-2011>), Scopus: 7947 citations, H-index 48, Google Scholar 10725 citations, H-index 57 (<http://scholar.google.it/citations?user=EziOhpcAAAAJ&hl=it>)