

Francesco Morichetti

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Education

2008 PhD in Information Technology (*with honours*), Politecnico di Milano
2001 Laurea (100/100 *with honours*) Telecommunications Engineering, Politecnico di Milano

Research areas: Integrated photonics, more specifically:

- electromagnetic analysis and design optical waveguides and photonic integrated circuits;
- advanced characterization techniques for waveguides and photonic integrated circuits;
- monitoring and control of photonic integrated circuits;

Current professional position

2019 – 2021 Associate Professor (SSD ING-INF/02 Electromagnetic fields), Politecnico di Milano (PoliMi), Dep. Elettronica, Informatica e Bioingegneria (DEIB)
2008 – present Head of the Photonics Devices Lab, DEIB, PoliMi, Italy
<https://photonics.deib.polimi.it/laboratories/>

Previous positions

2017 – 2019 Assistant Professor, Politecnico di Milano (PoliMi), Dep. Elettronica, Informatica e Bioingegneria (DEIB)
2012 – 2017 PostDoctoral Researcher, DEIB, PoliMi, Italy
2009 – 2011 Senior Researcher at Politecnico di Milano Foundation, Italy
2005 – 2009 Senior Researcher in the Integrated Optics Lab of CORECOM (Consortium For Research in Optical Switching, Milano), a research consortium between Politecnico di Milano e Pirelli SpA.
2001 – 2005 Junior Researcher in the Integrated Optics Lab of CORECOM

Academic roles

2009 – Head of the Photonics Devices Lab of PoliMi
2003 – (Co)supervisor of >40 master thesis students (Telecommunication Engineer, PoliMi)
2009 – (Co)supervisor of 8 PhD students (Telecommunication Engineer, PoliMi)

Teaching (SSD ING-INF/02 Electromagnetic Fields, Politecnico di Milano)

2019 - “Data transmission devices”, (undergraduate course, 5 ECTS)
2017- “Electromagnetic waves and transmission media” (undergraduate course, 5 ECTS)
2006 – 2007 “Integrated Optics” (master course, 5 ECTS, contract professor)
2014 – 2017 “Electromagnetic waves and Optics” (undergraduate course, 5 ECTS, assistant)
2013 – 2014 Fundamentals of electromagnetic fields” (mater course, 5 ECTS, assistant)
2004 – 2010 Practice, seminars and lectures within undergraduate/graduate courses (SSD ING-INF/02 Electromagnetic Fields, PoliMi).

Research projects & Grants

- 2019 - 2022** “Superpixels: Redefining the way we sense the world”, (FET, H2020), WP Leader
- 2020- 2022** NEBULA “Neuro-augmented 112Gbaud CMOS plasmonic transceiver platform for Intra- and Inter-DCI, (RIA, H2020), WP contributor
- 2016 – 2017** ACTIO “Advanced Control Technologies for Integrated Optics,” Fondazione Cariplo, Principal investigator
- 2016 – 2019** STREAMS “Silicon Photonics Transceiver and Routing technologies for High-End Multi-Socket Server Blades” (H2020 - ICT 27 – 2015: Photonics KET), WP contributor
- 2013 – 2016** BBOI “Breaking the barriers of optical integration” (FET, FP7), Co-investigator
- 2010 – 2015** PARADIGM "Photonic Advanced Research And Development for Integrated Generic Manufacturing", (IP, FP7), Responsible for PoliMi activity in WP3
- 2013 -2015** BIOTYPE “BIOsensors for point detection based on nanostructured optical components”, European Defence Agency (EDA), WP contributor
- 2011- 2013** SAPPHIRE, “Shared Access Platform to Photonic Integrated Resources”, PRIN 2009, WP Leader & Co-investigator
- 2012- 2013** CHIRPED "Chalcogenide based Integrated Reconfigurable Photonics for Energy-Saving Devices"), European Office of Aerospace Research and Development (EOARD), Principal investigator
- 2009- 2012** EUROPIC, "European manufacturing platform for Photonic Integrated Circuits", (STREP, FP7), WP contributor
- 2010 – 2012** NANOCAP “Novel nanostructure optical components for CRBN detection and opto-microwave links” European Defence Agency (EDA), WP contributor
- 2010** "Chalcogenide Glass micro-resonators for advanced low power non linear optics", Rocca Project, Co-investigator
- 2007- 2010** SPLASH , "Slow Photon Light Activated Switch", (FET, FP6) WP contributor
- 2005 – 2007** Coordinator of Work Group 2 (task "slow-wave structures"), European COST Action P11, "Physics of linear, nonlinear and active photonic crystals".

Organization of conferences and scientific events

- 2006** Co-organizer 15th International Workshop on Optical Waveguide Theory and Numerical Modelling (OWTNM), Varese, Italy, 2006
- 2008** Member of Technical Committee of the OSA Topical Meeting on "Slow and Fast Light
- 2014 -** Member of Technical Committee of national conference “Fotonica”
- 2015** Co-organizer and speaker of the workshop, "Envisioning the horizons of photonic integration," Politecnico di Milano, Milano, Nov. 2015
- 2017** Co-organizer and speaker of the workshop, "Silicon Photonics: from academic clean rooms to commercial foundries", Politecnico di Milano, Feb. 2017
- 2021** Co-organizer of the IEEE Summer Topical Meeting on "Reconfigurable Optics and Photonics", Virtual Conference, July 2021

Participation in editorial boards of scientific journals

- 2006** Guest Editor, Special Issue of Optical and Quantum Electronics (**38**, 2006), Springer
- 2010 -** Member of OSA Scientific Panel of Spotlight on Optics (OSA), , <http://www.opticsinfobase.org/spotlight/default.cfm?panelist=morichetti>
- 2011 - 2014** Member of Editorial Board of ISRN Optics (International Scholarly Research Network).
- 2013 - 2016** Member of the Editorial Board of The Scientific World Journal (Optics area).

Scientific production

3 international book chapters (among which 1 single author)

86 peer-reviewed publications in international journals,

1 seminal paper on slow-light propagation (> 200 citations);

2 papers selected by the Optical Society of America among the 30 most significant contributions emerged in optics in 2105 and 2017;

10 papers published in journals with impact factor IF > 8

6 papers with > 100 citations, **23** papers with > 50 citations

190 publications on proceedings of international conferences (**15** invited talks, **35** regular speaker);

20 publications on proceedings of national conferences (**1** invited talk, **8** as regular speaker);

Impact of the scientific production: **3590** citations, h-index **32** (source "SCOPUS", Oct. 2021).

Technology Transfer & Patents

- **8** international patents , **1** national patent.