

DARIO POLLI – CURRICULUM VITAE



PERSONAL INFORMATION

Family name, First name: Polli Dario

Professional web site: <http://polli.faculty.polimi.it>

• ACADEMIC CARREER

- 2014 – present **Associate Professor of Physics** at the Physics Department of the Politecnico di Milano.
- 2020 – present **Associated** with the Italian CNR (National Research Council) with research assignment (Type “A”).
- 2010 – 2020 **Affiliated** with the Center for Nano Science and Technology (<http://cnst.iit.it/>) of the Italian Institute of Technology in Milan, Italy.
- 2005 – 2014 **“Ricercatore di Ruolo”** (full-time permanent position equivalent to Assistant Professor) at the Physics Department of the Politecnico di Milano.
- 2002 – 2005 **PhD** in Physics at the Physics Department of the Politecnico di Milano (Italy). During this period, he was supported by a scholarship from the Italian government.
- 2001 **Master’s degree** (Final mark: 100/100 *cum laude*) in Electronics Engineering at the Politecnico di Milano (Italy)
- 2001 **Master’s degree** in Physical Engineering at the École Centrale de Paris (France) within the framework of the “TIME - Top Industrial Managers for Europe” project (double degree program). Two academic years spent abroad.

• CURRENT RESEARCH ACTIVITY

Dario Polli is heading a research group at Politecnico di Milano made of 12 people (8 PhD students, 1 post-doc researchers and 3 diploma students) devoted to: (1) the development of innovative label-free nonlinear optical microscopy systems for biological applications (see www.vibra.polimi.it) and (2) Fourier Transform spectroscopy and hyperspectral imaging with a patented ultra-stable interferometer.

• RESEARCH GRANTS (AS PRINCIPAL INVESTIGATOR)

- 2022 – 2024 European Innovation Council EIC Transition project “HYPERIA” (1.5 M€ budget, 24 months, see www.hyperia-project.eu).
- 2020 – 2024 H2020 “Disruptive Photonics Technologies” (ICT-36) project entitled “CRIMSON - Coherent Raman Imaging for the Molecular Study of the Origin of diseases”. Main coordinator of a consortium made of 10 partners (5.1M€ budget, 42 months, see <http://crimson-project.eu/>).
- 2020 – 2022 Regione Lombardia “NEWMED” project (3,3 M€, 30 months, see <https://www.progetto-newmed.it/>). Main coordinator of the consortium.
- 2018 – 2021 “CH2ROME – Coherent H2 Raman Metrology” by Ministero dell’Istruzione, dell’Università e della Ricerca (MIUR, Italy) (150k€, duration 3 years).
- 2018 – 2020 European Research Council “**ERC- Proof of concept**” grant (150 k€, 18 months) on the development of an innovative fluorimeter for the market.
- 2015 – 2020 European Research Council “**ERC-Consolidator**” grant (1,8 M€, 5 years) on coherent Raman microscopy (see www.vibra.polimi.it).
- 2017 – 2018 European Research Council “**ERC- Proof of concept**” grant (150 k€, 18 months) on the development of a circular dichroism instrument for the market.
- 2009 – 2013 Human Frontiers Science Program (\$ 350,000) – Multidisciplinary project, involving biologists, synthetic chemists and physicists.
- 2009 – 2013 Politecnico di Milano “5 per mille junior” (aimed at supporting innovative research proposals from young researchers, € 55,000).

• PUBLICATIONS AND H-INDEX

Dario Polli has published more than 120 scientific papers in international peer-reviewed high-impact journals (including Nature, Science, Nature Materials, Nature Physics, Physical Review Letters, Angewandte Chemie). Overall his papers have received **more than 6600 citations**. His **h-index is 32** (Scopus, see www.scopus.com/authid/detail.uri?authorId=6603259331) - **39** (Google Scholar, see <https://scholar.google.it/citations?user=w0Je4fQAAAAJ&hl=it&oi=ao>). He presented his research results at more than 100 international conferences, including 1 invited keynote, **40 invited talks**, 1 Keynote and 3 tutorials at international schools. He co-edited “Stimulated Raman Scattering Microscopy - Techniques and Applications” book with Elsevier, see <https://doi.org/10.1016/C2020-0-01880-3>.

• PATENTS AND TECHNOLOGY TRANSFER

- 2018 – now Co-founder and chief innovation officer of the start-up “NIREOS” (www.nireos.com) for commercializing spectrometers and related products, also accredited as a spin-off of Politecnico di Milano and incubated in PoliHUB. The business idea won three start-up competitions and received funding from a Business Angel. After just 5 years, NIREOS is now a successful and profit-making start-up, with several products on the market, including spectrometers and spectral imagers, with a worldwide network of distributors, a ≈1Mk€ turnover, 10 employees, involved in European and regional Research&Innovation projects and customers such as M.I.T., ICFO, EPFL and the Universities of Cambridge, Chicago, Tokyo, Colorado, Michigan and Herriot Watt.
- 2018 – now Co-founder of the start-up “SPECTO Photonics” (www.spectophotonics.com), whose mission is to deliver to the market an innovative patented spectrometer based on integrated photonics circuits for Brilloiun microscopy for remote label-free non-destructive material characterization. SPECTO won several start-up competitions, including the first absolute prize at the “Premio Nazionale Innovazione 2019” (the most prestigious Italian prize for start-ups), the “Start Cup Lombardia 2019”, the 1st prize of Digital Pitch '21 from the Digital Innovation Hub Photonics and the Seal of Excellence by the European Commission as part of the competitive Horizon2020 SME Instrument program. In 2022 SPECTO received an investment round by LIFTT and Progress Tech Transfer.
- 2023 Co-founder of SunCubes.
- 2017 – 2023 Five international patents have been filed on a hyperspectral camera, on a technique for measuring circular dichroism of molecules, on a method for measuring excitation-emission fluorescence maps, on a compact filter for Brillouin spectroscopy and on a laser device.

• INTERNATIONAL MOBILITY

- 2003 – 2006 **Visiting researcher** at the Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy (Berlin, Germany) for a total of about 6 months within the framework of two different research projects: one on time-resolved microscopy (under the supervision of Prof. Christoph Lienau) and another on short pulse generation (under the supervision of Dr. Frank Noack).

• FELLOWSHIPS/PRIZES

- 2023 Elected Senior member of SPIE, the International Society for Optics and Photonics.
- 2022 Elected OPTICA Fellow “For pioneering contributions to ultrafast spectroscopy and nonlinear label-free microscopy”
- 2019 SPIE Community Champion for active contribution to the Community and volunteerism with the Society.

- 2002 – 2005 Ph. D. fellowship at the Physics Department, Politecnico di Milano
- 1998 – 1999 Scholarships from the “Famiglia Legnanese” foundation to attend the second year of study at École Centrale de Paris (France).
- 1997 – 1998 “Erasmus” scholarship to attend the first year of study at École Centrale de Paris (France).

• SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Direct supervision of >13 Ph.D. students, Co-supervision of 7 Ph.D. students and several post-doc researchers. Among them: Daniele Brida, now Full Professor at Luxembourg University; Giovanni Cirmi, now Research Scientist at the Center for Free-Electron Laser Science CFEL-DESY in Hamburg-Germany; Giulia Grancini, now Associate Professor at Università di Pavia; Francesco Crisafi, now laser scientist at Bright Solutions; Dr. Vikas Kumar, now Senior Post-doc Researcher at Universität Duisburg-Essen; Dr. Daniele Viola, now Laser Engineer at Bios S.r.l., a Lumenis company.

• TEACHING ACTIVITIES

- 2014 Teacher of Physics-Mechanics for a MOOC (Massive Open Online Course) of the Politecnico di Milano (see <https://www.pok.polimi.it/>)
- 2019 – present Lecturer of “Physics and Applications of Ultrafast Processes” at the Politecnico di Milano.
- 2005 – present Lecturer of “Experimental Physics” at the Politecnico di Milano for a total of 18 annual courses and more than 4000 students examined.
- 2001 – 2014 Problem solving (teaching assistant) in “Experimental Physics” and “Physical Optics” at the Politecnico di Milano for a total of approx. 650 teaching hours.
- 2001 – 2014 Experimental laboratories in “Experimental Physics” and “Physical Optics” at the Politecnico di Milano for a total of approx. 140 half-a-day tutorial experiments.

• ORGANISATION OF SCIENTIFIC MEETINGS AND CONGRESSES

- 2018 – present Program Committee of “High-Speed Biomedical Imaging and Spectroscopy”, “Advanced Chemical Microscopy for Life Science and Translational Medicine”, “Real-time Measurements, Rogue Phenomena, and Single-Shot Applications” conferences (part of SPIE Photonics West)
- 2022 – present Program Committee of the “Next-Generation Spectroscopic Technologies” conference at the “SPIE Defense + Commercial Sensing” conference.
- 2023 Program Committee of the CLEO Europe conference – topic “CL-Photonic Applications in Biology and Medicine”
- 2022 Technical Program Committee member of the IEEE Photonics Conference (IPC).
- 2017-2018 Main organizer/chair of the “European Conference on Nonlinear Optical Spectroscopy (ECONOS) 2018” conference in Milan (Italy).
- 2022 Program committee of the 2022 IEEE Photonics Conference (IPC)
- 2021 Program committee of the Optoelectronics and Communications Conference (OECC 2021)
- 2013 Italian National Conference on Condensed Matter Physics “FisMat2013” (09-13 September 2013) – member of the Local Committee

• INSTITUTIONAL RESPONSIBILITIES

- 2005 – present Member of the Physics Department board at the Politecnico di Milano.
- 2013 – present Member of the Teaching Committee of the Physics Department of the Politecnico di Milano.

• COMMISSIONS OF TRUST

- 2017-2023 Member of the final evaluation board for several PhD exams, including: Università

dell'Aquila (Italy), Università La Sapienza in Rome (Italy), the University of Genoa/IIT (Italy), the University of Hannover (Germany)

2022 Reviewer for two ERC projects.

2017 Reviewer for a research project of the French National Research Agency (ANR).

2016 Reviewer for the VQR 2011-2014 ("Valutazione della Qualità della Ricerca").

2016-2018 Reviewer of two research proposal for the Swiss National Science Foundation.

2015 Reviewer of a research proposal for the National Research, Development and Innovation Office (NKFIH) in Hungary.

2013 Reviewer for the "Futuro in Ricerca 2013" Program of the Italian Ministry of Education and Research, funding fundamental research projects, for young postdoc researchers.

2011 Reviewer for the "MOBILITAS" Postdoctoral Research Grant 2011 of Estonian Science Foundation.

2010 – present Reviewer for several scientific journals (Light: Science and Applications, Optics Letters, Optics Express, Applied Physics Letters, Journal of the Optical Society of America, Laser & Photonics Reviews, Nanoscale Research Letters, Journal of Nanomaterials, Journal of Raman Spectroscopy, ...).

• MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2019 Senior Member, Optical Society of America (OSA)

2010 – 2018 Member, Optical Society of America (OSA)

2017 – present Member, the international society for optics and photonics (SPIE)

• LANGUAGE SKILLS

Italian	Mother tongue			
English	<i>Writing</i>	<i>Reading</i>	<i>Listening</i>	<i>Speaking</i>
	Excellent	Excellent	Good	Good
French	<i>Writing</i>	<i>Reading</i>	<i>Listening</i>	<i>Speaking</i>
	Intermediate	Good	Good	Good

• SCIENTIFIC DIVULGATION

Dario Polli is passionate about Science and Science divulgation to the public. From 2012 to 2015, he has been collaborating with the "Collegio San Carlo" High School in Milan, teaching Experimental Physics (in English) to teenagers through practical demonstrations in a scientific laboratory. He held several interventions in high schools and scientific events for the general public, including: two lessons in collaboration with focus Junior for children (7-13 years), a talk at the Wired Next Fest 2015 (www.wired.it/tv/slow-motion-per-atomi-molecole), several meetings in the MeetMeTonight (<http://www.meetmetonight.it/>) and two TEDx conferences in Vicenza (www.tedxvicenza.com) and Politecnico di Milano (<http://www.tedxpolicodimilano.it/>). Recently, he was a speaker at "Pint of Science" (<https://pintofscience.it/event/luce-colore-visione-dalla-fisica-alla-tecnologia>), Bergamo Scienza (<https://www.bergamoscienza.it/it/calendario/33855/la-fisica-di-star-wars>) and MeetMeTonight (<https://youtu.be/5hJTkO9Gn4c>). He has been invited in Luxembourg and Spain to give speeches at an international convention of Ferrero and at the Allianz K-Forum, respectively. He is publishing a textbook of General Physics for the first-year students of Bachelor. He has delivered a series of physics-divulgation courses to Bocconi University students.

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