

Curriculum vitae di **Margherita Maiuri**

Sottosettori ERC primari (max 3):

PE4_2 *Spectroscopic and spectrometric techniques*

PE2_12 *Optics, non-linear optics and nano-optics*

PE4_1 *Physical Chemistry*

PERSONAL DETAILS



Margherita, Maiuri

July 18th 1987

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• **Education**

- 13/04/2014 **PhD with note of merit**
Physics Department, Politecnico di Milano, Milano, Italy
Supervisor: Giulio Cerullo
- 2008 – 2010 **Master *cum laude* in Engineering Physics - Optics and Photonics**
Physics Department, Politecnico di Milano, Milano, Italy

• **Current positions**

- 2023 – present **Associate Professor**
Physics Department, Politecnico di Milano, Milano, Italy
- 2022 – present **Visiting Professor**
Chemistry Department, Princeton University, Princeton (NJ), United States

• **Previous positions**

- 2020 – 2023 **Assistant Professor (RTDb)**
Physics Department, Politecnico di Milano, Milano, Italy
- 2018 – 2020 **Research Fellow - L'Oréal UNESCO For Women in Science Fellow**
Physics Department, Politecnico di Milano, Milano, Italy
- 2015 – 2018 **Research Fellow – Marie Skłodowska Curie Global Fellow**
Chemistry Department, Princeton University, Princeton (NJ), United States
- 2014 – 2015 **Postdoctoral Researcher**
Chemistry Department, Princeton University, Princeton (NJ), United States

RESEARCH ACHIEVEMENTS AND PEER RECOGNITION

Research achievements

I have published more than 80 peer-reviewed articles and received more than 5,500 citations (h-index 27, Google Scholar). Many of my papers have appeared in top-ranked journals, among which *Science*, *Nature Materials*, *Nature Photonics*, *Nature Communications*, *Nature Chemistry*. My research activities focus on ultrafast light-matter interactions for light-energy conversion in various systems, including molecular compounds (papers 1-2-4), biological systems (paper 5) optical metasurfaces (papers 6,7,9), plasmonic nanostructures (paper 10) and hybrid organic-photonic structures (papers 3, 8).

- **List of relevant papers**

1. G. Grancini, **M. Maiuri**, et al., “Hot exciton dissociation in polymer solar cells”, Nature Materials 12, 29–33 (2013). *First direct evidence of ultrafast dissociation of hot excitons in semiconducting polymers*. (cit. 818)
2. S.M. Falke, C. A. Rozzi, D. Brida, **M. Maiuri**, et al., “Coherent ultrafast charge transfer in an organic photovoltaic blend”, Science 344, 1001–1005 (2014). *Pioneering study of coherent charge transfer in organic photovoltaic materials*. (cit. 684)
3. P. Vasa, W. Wang, R. Pomraenke, M. Lammers, **M. Maiuri**, et al., “Real-time observation of ultrafast Rabi oscillations between excitons and plasmons in metal nanostructures”, Nature Photonics 7, 28–32 (2013). *First experimental observation of Rabi oscillations between excitons and plasmons*. (cit. 528)
4. **M. Maiuri**, M. Garavelli, G. Cerullo, “Ultrafast spectroscopy: State of the art and challenges”, J. Am. Chem. Soc. 142, 3–15 (2019). *Invited review article summarizing the main developments in ultrafast spectroscopy*. (cit. 548)
5. **M. Maiuri**, E.E. Ostroumov, R.G. Saer, G.D. Scholes, “Coherent wavepackets in the Fenna–Matthews–Olson complex are robust to excitonic-structure perturbations caused by mutagenesis”, Nature Chemistry 10, 177–183 (2018). *First evidence of the persistence of vibronic coherences in natural photosynthetic complexes*. (cit. 148)
6. A. Schirato*, **M. Maiuri***, et al., “Transient optical symmetry breaking for ultrafast broadband dichroism in plasmonic metasurfaces”, Nature Photonics 14, 723–727 (2020). *Observation of optical symmetry breaking on the femtosecond timescale in plasmonic metasurfaces*. (cit. 101)
7. G. Crotti, M. Akturk, , ..., **M. Maiuri**, G. Della Valle, “Giant ultrafast dichroism and birefringence with active nonlocal metasurfaces”, Light: Science & Applications, 13, 1 204, (2024). *Experimental demonstration of optically controlled birefringence on the femtosecond timescale*. (cit. 24)
8. M. Russo, ..., **M. Maiuri***, T. Virgili*, “Direct evidence of ultrafast energy delocalization between optically hybridized J-aggregates in a strongly coupled microcavity”, Adv. Opt. Mater. 12, 25, 2470079 (2024). *Experimental demonstration of ultrafast energy transfer in an organic microcavity in the strong coupling regime*. (cit. 15)
9. **M. Maiuri**, et al.; “Ultrafast all-optical metasurfaces: challenges and new frontiers”, ACS Photon. 11, 8 (2024). *Invited perspective article analyzing challenges and new frontiers of ultrafast metasurfaces for nanophotonics* (cit. 27)
10. A. Schirato,, **M. Maiuri**, “Ultrabroadband Excitation of Hot Carriers in Plasmonic Nanorods Revealed by Two-Dimensional Electronic Spectroscopy”, Adv. Opt. Mater. e03283 (2026). *Study of plasmonic dynamics using 2D spectroscopy*.

Peer recognition

My results have been presented at over 40 international conferences, with more than 30 invitations as a speaker and keynote speaker at leading institutions, including MIT, Harvard, the City University of New York (CUNY), Columbia University, and Princeton.

- **Grants**

Leadership roles within scientific consortia under the framework of national and EU-funded research initiatives, gained experience in project management (€3.5M of funding secured since 2015).

2026: ERC Proof of Concept (Project META-SENSE/Coordinator)
 2022: ERC Starting Grant (Project ULYSSES/Coordinator)
 2022: EIC Pathfinder (Project PLANKT-ON/Partner)
 2022: PRIN PNRR (Project SCI-FI MYSTERY / Partner)
 2022: PRIN 2022 (Project PHOTOCONTROL/ Coordinator)
 2021: Lombardia è ricerca – Regione Lombardia (Project Enhancing Photosynthesis)
 2021: PRIN - MIUR (Project qLIMA/Partner)
 2020: MSCA-ITN Horizon2020 (Project MUSIQ/Partner)
 2017: Balzan Prize Foundation (Project Q-EX/Coordinator)
 2015: Marie Skłodowska Curie Fellowship Horizon 2020 (Project PHOEBUS/Coordinator)

- **Awards**

2024: Women in Ultrafast Science Global Award by the Nature Light: Science & Application Editorial Board
 2023: Women in Science Award by the European Optical Society
 2021: Fresnel Prize by the European Physical Society
 2020: Note of merit for “Premio Giovani Ricercatori Gruppo 2003”
 2018: National Academic Qualification as Associate Professor in Physics of Matter
 2018: L’Oréal-UNESCO for Women in Science
 2015: ENI Award Debut in Research

Template CV Soci Accademia di Ingegneria e Tecnologia

- **Highlighted Talks (last two years)**

- 14/04/2026: Invited Speaker at Frontiers of Cavity Quantum Electrodynamics Workshop (Paris)
Ultrafast Dynamics in Mirco and Metacavities
- 19/08/2025: Plenary Speaker at the ACS Global Virtual Symposium (virtual)
Ultrafast Dynamics of Electronic Excited States in the Condensed Phase
- 13/02/2025: Invited Colloquium Speaker at the Harvard SEAS Lecture Series
Harnessing Light and Manipulating Matter with Femtosecond Multidimensional Spectroscopies
- 22/05/2025: Invited Speaker at the META4D Waves in Time-varying Media (Madrid)
All-optical control of light with ultrafast metasurfaces
- 07/07/2024: Invited Lecturer at international workshop Quantum Materials and Structured Light
(Ettore Majorana Foundation and Center, Erice)
Ultrafast all-optical metasurfaces: controlling light and manipulating matter

ADDITIONAL INFORMATION

Other contributions to the research community

- **Student Supervision and Collaborations**

I have supervised over 15 people among master students, PhDs and post-doctoral researchers. I have been involved and currently participate in collaborative research as PI or partner with leading international research groups, with the support of national and international funding agencies. To list a the most recent ones:

Prof. Gregory Scholes, Princeton University: natural photosynthesis
Prof. Maurizio Prato, Università di Trento: artificial photosynthesis
Prof. Marcella Bonchio: artificial photosynthesis
Prof. Benedetta Mennucci, Università di Pisa: natural photosynthesis
Prof. Nanfang Yu, Columbia University : optical metasurfaces
Prof. Vinod Menon, CUNY : optical microcavities

- **Editorial Activity**

Peer Reviewer for: *Nature*, *Nature Communication*, *Chem*; ACS Journals (JACS, JPC A, B, C , Letters), J. of Optical Society B. Guest Editorial Board for: *Frontiers in Chemistry* *Vibrationally-Mediated Chemical Dynamics* (2017) *Photonics Time-Resolved Spectroscopy and Imaging for Biophotonics* (2018)

- **Grant Reviewer**

External Grant Reviewer for: ERC Starting (3), ERC Consolidator (1), ERC SYNERGY (1) , H2020MSCA(4)

- **Scientific Conference Organizers**

Scientific Member for Ultrafast dynamics Symposia at Materials Research Society Meetings (MRS Spring 2025 Seattle; MRS Spring 2021)

Member of the Novel Optical Materials and Applications Technical Program Committee (since 2024)

- **Career Talks and Interviews (last two years)**

- 17/07/2025: Career Series Talks at Bayreuth University
Controlling Light and Matter with Lasers: a Journey in Ultrafast Science
- 14/03/2024: Women in STEM at Politecnico di Milano
Ultrafast spectroscopy from molecules to nanostructures
- 13/02/2024: Mind the STEM Gap Event at Politecnico di Milano (round table with Rector Prof. Sciuto)

Frontiere : [Margherita Maiuri 2026](#)

Frontiere : [Margherita Maiuri 2022](#)

- **Career breaks**

- 05/08/2020 – 05/12/2020 Maternity leave (5 months)
- 10/01/2023 – 10/06/2023 Maternity leave (5 months)
- 15/09/2025 – 15/02/2026 Maternity leave (5 months)

