

MAURIZIO ARTONI,

Department of Information Engineering, Brescia University.

BRIEF PROFILE

He received his Ph.D. degree from the City University of New York (1990). He was a National Academy of Science Fellow from 1991 to 1993 working at the Photonics Division of The Goddard Space Flight Center (NASA) in Washington. From 1993 to 1999 he was a Research Officer at the City University of New York (US), the University of Essex (UK) and at Consejo Superior de Investigaciones Cientificas (CSIC-Madrid). He spent the years 2000-2002 at the European Laboratory for Non-Linear Spectroscopy (LENS). He is now professor at the University of Brescia (Italy). Following his Ph.D. he has received awards from the United States National Academy of Science, the Weizmann Institute of Science and the European Community.

His interests up to date include electromagnetism, quantum coherence effects in low-dimensional semiconductors and photonic structures, successful research activities that have carried out in cooperation with both national and international teams and, in particular, with [REDACTED] (Scuola Normale Superiore, Pisa), [REDACTED] (LENS, Firenze) and [REDACTED] (Essex University, UK), [REDACTED] (Universitat Autònoma de Barcelona), [REDACTED] (St. Andrews & Exeter University, UK), [REDACTED] (Center for Quantum Sciences, Northeast Normal University, China) and [REDACTED] (Beijing Computational Science Research Center, China).

Over the past two decades, “national cooperations” have been funded by (3) three PRIN projects from the Italian Ministry of Education, University and Research (MIUR), for one of which he has served as Principal Investigator (P.I.) and by the PAISS advanced research program of the Italian Institute for the Physics of Matter (INFN) for which he has also served as P.I..

“International cooperations”, on the other hand, have been funded by projects from within the MIUR Italy-Spain Actione Integrada Program, within the CRUI-British Council Partnership Programs and from the Ministerio De Ciencias Y Innovación of Spain. He has served as P.I. in all of them. He has also served as Project Member (P.M.) in recent COST-action and QUROPE programs, both from within the European Community framework, while being supported earlier by the European Community HCM Programme.

He's currently the National Coordinator of a project (progetto di grande rilevanza) involving the National Science Foundation of China and the Italian Ministry of Foreign Affairs & International Cooperations (MAECI), while joining in as Project Member (P.M.) in a number of top-notch projects, including the FET-Open project (Metafast) and the EMIMEO project, both within the EU framework and the “Joint Laboratories Program”, a cooperative project with the Université Paris Diderot. [REDACTED].

He has published over hundred and twenty original papers (*h-index*: 28), including several review articles, mostly on prestigious physics, optics and photonics international journals with large impact factor (*IF*: 1.5-38), such as e.g. *Nature Series* (x3), *Physical Review Letters* (x14), *Physical Reviews of the American Physics Society* (x45), *Journals of the American Optical Society* (x6) and *Proceedings of the Royal Society of London* (1). Most papers score three-to-four authors on average, nearly 40% of the times as first author and largely (>80%) with an international co-authorship. Most conferences and workshops proceedings (x18) appear in prominent editorial Science & Engineering Societies.

In addition to his extensive teaching experience abroad (14 years) at prominent universities and research centres both at the graduate and undergraduate level, I have been teaching at the University of Brescia “Foundations of Nanotechnology” (in English - 8 years) while I am currently (2020-) in charge of a newly opened course on “Quantum Technologies”. Along the same line I’ll be also in charge of a Ph.D. course on “Quantum Computing”.

All courses deal with Information Communication Technology (ICT) of the future, the so-called quantum info-communications, a field that has surged in the last two decades with a booming global market. The courses above mostly address an audience of international students enrolled within the M.Sc./Ph.D. program in Communication Technologies & Multimedia at the University of Brescia.

He has served as a member of Ph.D. Advisory Committees at over a dozen of university campuses (> 40 PhD Theses examined) and has served as member of Faculty Advisory Committees of the Italian Ministry of Education. He has been member of the Organizing Committee and Technical Program Committee of international workshops.

Over the past two decades, he has been the external evaluator in the research assessment for major national and international science and technology initiatives, including the Comissió d’Avaluació de la Recerca a AQU Catalunya (Spain), the John D. and Catherine T. MacArthur Foundation (US), the NASA-Goddard Space Flight Center (US), the Université Pierre et Marie Curie-Sorbonne Université (Paris), the National Science Centre (NCN) of the Poland Ministry of Science and Higher Education, the National Institute of Science Education and Research (NISER) of the Government of India, the Italian Ministry of Education, University and Research (MIUR) and the Strategic Monitoring Research Office of the Italian Ministry of Defense (Cemiss).

Some details are herewith enclosed while others are available upon request.

Recent events

“Nature Photonics” paper con relativa cover page

<https://www.unibs.it/news-delle-strutture/metamateriali-unibs-su-nature-photonics—prof-maurizio-artoni>

“Progetto di grande rilevanza” (NSFC-MAECI)

<https://www.unibs.it/news-delle-strutture/prof-m-artoni-finanziato-un-progetto-quantum-technology>

“Platinum Sole 24 Ore/Aziende & Protagonisti”. Cina 2021 (July 2021, p. 77)

<https://platinum-online.com>

More...from the UNIBS.

3^o classificato sull’intera II fascia dell’Ateneo in entrambe le valutazioni per l’impegno didattico, di ricerca e gestionale dei professori e ricercatori a tempo indeterminato (Una Tantum n. 240/2010) (Details follow below).

Projects.

(x1) National Science Foundation of China and the Italian Ministry of Foreign Affairs & International Cooperations (MAECI).

“Harnessing Color Entanglement For Information & Communication Technology”:

Progetto di grande rilevanza: National Coordinator.

(x1) Italy-China International Cooperation for the Scientific and Technological Development - The Italian Ministry of Foreign Affairs (MAE-ST).

“Electromagnetic Induced Transparency and its Applications”:

Project Local Coordinator

(x4) PRIN-Italian Ministry of Education, University and Research (MIUR),

“Toward all-optical information processing in time-dependent photonic band-gap materials”:

Principal Investigator

“Quantum Communications with Slow Light“:

Project Member

“Quantum coherence and interference in nonlinear optics”:

Project Member

“Nonlinear photonics in metal-less metasurfaces”

[REDACTED], ***Project Member***

(x4) projects from within European Community Frameworks.

“Metasurfaces Ultrafast Light Structuring” METAFAST, within a FET-Open framework:

[REDACTED], ***Project Member***

“Nonclassical Light” within the European Community Human Capital and Mobility Programme:

Project Member

“Nanoscale Quantum Optics” (COST-action):

Project Member

“Quantum Nanophotonics” within the Quantum Information Processing and Communication program of QUROPE:

Project Member

(x2) “Accion Integrada Italia-Espana” within the MIUR framework.

“All Optically Controlled Photonic Band Gaps”:

Principal Investigator

“Dispersive properties of atomic vapours driven by standing-wave laser fields”:

Project Local Coordinator

(x2) CRUI-British Council Partnership Projects.

“Interaction of Atoms and Molecules with Nanostructures”:

Principal Investigator

“Light Propagation and Interactions in Moving Metamaterials”:

Principal Investigator

(x1) “Científicos y Tecnólogos Extranjeros” within the Ministerio De Ciencias Y Innovación of Spain.

“Phonons Squeezing: generation, detection schemes and applications”:

Principal Investigator

(x1) EMIMEO program of the European Union.

“Innovative Microwave Electronics and Optics”

Project Member

(x1) “Joint Laboratories Program” between Unibs-Italian National Research Council (CNR) and the Université Paris Diderot (France)

“Nonlinear photonics with metal-less nanoantennas and metasurfaces (NOMEN):

Project Member

(x1) PAISS Advanced Research Program of the Italian Institute for the Physics of Matter (INFM)

“Photon-Matter”:

Principal Investigator

Fellowships & Awards.

"Fondazione Angelo Della Riccia", Italy:

Research Prize (Micro-Physics).

"Societa' Italiana Vetro (SIV) - Pilkington Glass", Italy:

Research Project Award.

"The Graduate School of the City University of New York (CUNY)", US:

Research Fellowship Award.

"Ministry of Education, University Scientifica and Technological Research (MURST)", Italy:

Research Award (Physical Sciences) [2nd classified over 105 eligible candidates].

"US National Academy of Science/National Research Council", US:

Research Project Award.

"The Weizmann Institute of Science", Israel:

Feinberg Fellowship Award.

European Commission:

"Human Capital Mobility (HCM)" Research Fellowship Award.

"Ministerio De Ciencias y Innovacion"/"Consejo Superior Investigaciones Cientificas (CSIC-MADRID):

"Científicos y Tecnólogos Extranjeros en España" Research Project Award.

"Carlo Marchi Foundation", Italy:

Research Prize (Physics).

10 Publications:

1. Zavatta, A., Artoni, Maurizio., La Rocca, G. (2019). Engineering of heralded narrowband color-entangled states, *PHYSICAL REVIEW A RAPID COMMUNICATIONS*, 99(3), 031802

2. ARTONI, Maurizio, Zavatta, A. (2015). Large Phase-by-Phase Modulations in Atomic Interfaces. *PHYSICAL REVIEW LETTERS*, vol. 115, p. 113005-113009, ISSN: 0031-9007.

3. Horsley S.A. R., ARTONI, Maurizio, La Rocca G. C. (2015). Spatial Kramers–Kronig relations and the reflection of waves. *NATURE PHOTONICS*, vol. 9, p. 436-439, ISSN: 1749-4885

4. S. A. R. Horsley, J. H. Wu, ARTONI, Maurizio, G. C. La Rocca (2013). Optical Nonreciprocity of Atomic Bragg Mirrors in Motion. *PHYSICAL REVIEW LETTERS*, vol. 110, p. 223602-223606

5. Wu, Jin Hui, ARTONI, Maurizio, La Rocca, G. C. (2014). Non-Hermitian Degeneracies and Unidirectional Reflectionless in Atomic Lattices. *PHYSICAL REVIEW LETTERS*, vol. 113, p. 123004-123009

6. J. H. Wu, S. A. R. Horsley, ARTONI, Maurizio, G. C. La Rocca (2013). Radiation damping optical enhancement. *LIGHT, SCIENCE & APPLICATIONS*, vol. 2, ISSN: 2047-7538

7. Ivanov, V., Alberti, A., Schioppo, M. Ferrari, G., Artoni, M et al. (2008). Coherent delocalization of wave packets in driven lattice potentials, *PHYSICAL REVIEW LETTERS* Vol. 100 p. 043602

8. J. Hui Wu, J. Yue Gao, J. Xu, L. Silvestri, Artoni, M., G. C. La Rocca, F. Bassani (2005). Ultrafast All Optical Switching via Tunable Fano Interference. *PHYSICAL REVIEW LETTERS*, vol. 95, p. 57401-57405

9. C. Ottaviani, D. Vltali, M. Artoni, F. Cataliotti, P. Tombesi (2003). Polarisation qubit phase gate in driven atomic media. *PHYSICAL REVIEW LETTERS*, vol. 90, p. 197902-197906

10. ARTONI, Maurizio, G. LA ROCCA (2006). Optically Tunable Photonic Stop Bands in Homogeneous Absorbing Media. *PHYSICAL REVIEW LETTERS*, vol. 96, p. 073905-073909.

Publications Scores.

- Over hundred and twenty original papers with an Avg. Citation/Count of ~2700 and a Scopus h-index 28.
 - Several review articles appear in prestigious physics, optics and photonics international journals such as e.g. *Nature Series* (x3), *Physical Review Letters* (x14), *Physical Reviews of the American Physics Society* (X46), *Journals of the American Optical Society* (x6), *Proceedings of the Royal Society of London* (1) etc.
 - Publications in very high impact journals:
 - (1) *Nature Photonics* [with cover page, see Recent Events below] (IF:38),
 - (1) *Physics Reports* (IF:26),
 - (1) *Nature Light Science and Applications* (IF: 15),
 - (x14) *Physical Review Letters* (IF: 10)
- etc.
- Most papers score three-to-four authors on average, nearly 40% of the times as first author, and largely (>80%) with an international co-authorship.
 - Most conferences and workshops proceedings (x18) appear in prominent editorial Science & Engineering Societies including e.g. the American Institute of Physics (AIP), the Varenna International “Enrico Fermi” School of Physics, the Material Research Society (MRS), the Institute of Electrical and Electronics Engineers (IEEE), the NASA Conference Publication Series, the European Conference on Optical Communication (ECOC), the Annals of the New York Academy of Sciences, etc.

Full Professor National Scientific Qualification (Abilitazione ASN).

1. “Theoretical Physics of Matter (SC Fis/02/B2)”

2. “Campi Elettromagnetici (SC Ing/09/F1)”.

Guest Professorships offered at various International Institutes, including

The City University of New York (US),

Universitat Autònoma de Barcelona (UAB), (SPAIN)

The University of York, (UK)

Center for Quantum Sciences School of Physics Northeast Normal University (CHINA),

Jilin University/China's Ministry of Education (CHINA),

Beijing Computational Science Research Center, Beijing, (CHINA).

etc.