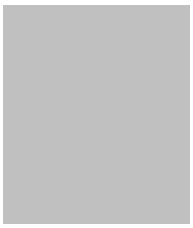
PERSONAL INFORMATION

Enrico Prati



SMS

Sex | Date of birth | Nationality

WORK EXPERIENCE

2/2022 – now — **Associate Professor**

Università Statale degli Studi di Milano, ITALY

- Teaching quantum computing and artificial intelligence
- Responsible of the Quantum Team of CNR as Associate "B" to CNR-IFN
- Research Line 1: Modelling and experimental characterization of silicon quantum devices and single atom nanoelectronics
- Research Line 2: Quantum compiling by artificial intelligence
- Research Line 3: Quantum machine learning algorithms
- Research Line 4: Silicon neuromorphic systems
- Research Line 5: Silicon photonic devices for quantum communications

Business or sector Education and Research

11/2019 – 1/2022 — **Senior Research Scientist**

ISTITUTO DI FOTONICA E NANOTECNOLOGIE - CONSIGLIO NAZIONALE DELLE RICERCHE MILANO, ITALY

- Responsible of the Quantum Team at the I3N Laboratory at Polifab
- Research Line 1: Modelling and experimental characterization of silicon quantum devices and single atom nanoelectronics
- Research Line 2: Quantum compiling by artificial intelligence
- Research Line 3: Quantum machine learning algorithms
- Research Line 4: Silicon neuromorphic systems
- Research Line 5: Silicon photonic devices for quantum communications

Business or sector Research on condensed matter physics

9/2009 – 11/2019 — **Research Scientist**

ISTITUTO MICROELETTRONICA E MICROSISTEMI AND ISTITUTO DI FOTONICA E NANOTECNOLOGIE - CONSIGLIO NAZIONALE DELLE RICERCHE MILANO, ITALY

- Responsible of the cryomagnet laboratory (since 09/2013)
- Responsible of the Quantum Team at the I3N Laboratory (from 09/2013)
- Research Line 1: Modelling and experimental characterization of silicon quantum devices and single atom nanoelectronics
- Research Line 2: Modelling and experimental characterization of metamaterials
- Research Line 3: Quantum compiling by artificial intelligence
- Research Line 4: Quantum machine learning algorithms
- Research Line 5: Silicon neuromorphic systems
- Research Line 6: Silicon photoni c devices for quantum communications

Business or sector Research on condensed matter physics

10/2006 – 9/2009 — **Research Scientist**

ISTITUTO MICROELETTRONICA E MICROSISTEMI - CONSIGLIO NAZIONALE DELLE RICERCHE MILANO, ITALY

- Responsible of the cryomagnet laboratory. Modelling and experimental characterization of silicon quantum devices and metamaterials

Business or sector Research on condensed matter physics

3/2003 – 10/2006

Postdoc

ISTITUTO NAZIONALE DI FISICA DELLA MATERIA - AGRATE BRIANZA, MONZA BRIANZA, ITALY

- Responsible of the cryomagnet laboratory. Modelling and experimental characterization of silicon quantum devices and metamaterials

Business or sector Research on condensed matter physics

2/2002 – 3/2003

Research Scientist

ISTITUTO DI INFORMATICA E TELEMATICA - CONSIGLIO NAZIONALE DELLE RICERCHE PISA, ITALY

- Design of database and P2P protocols

Business or sector Research on information technology

1/2001 – 4/2001

Research Internship

Marconi LTD Towcester (UK)

- X-Ray diffraction characterization of semiconductors
- Semiconductor mobility measurements

Business or sector Semiconductors for telecommunications

EDUCATION AND TRAINING

05/1999 -- 10/2002

Dottorato di Ricerca in Fisica

PhD

Università degli Studi di Pisa

- Thesis “Resonance methods for the microave Hall mobility in semiconductors”
- Supervisor: Massimo Martinelli (Director of IPCF - CNR)
- Experimental semiconductor physics, microwave technology

11/1993 – 10/1998

Laurea in Fisica

MD

Università degli Studi di Pisa

- Thesis “ Studio delle funzioni di critical crossover scaling dei modelli a simmetria O(N) a d=3”
- Supervisor: Prof. Paolo Rossi
- Quantum field theory and critical phenomena

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C2	C2
	Replace with name of language certificate. Enter level if known.				
French	B1	B1	B1	B1	A2
	Replace with name of language certificate. Enter level if known.				

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Communication skills

- Excellent communication skills
- I have gave a TEDx speech streamed by Italian public television (2016)
- I have been interviewed in recorded TV programs Superquark RaiUno (2017), Community RaiInternational (2018), TG1 RaiUno (2019, 2021), Codice RaiUno (2020)
- I have presented my dissemination book “Mente Artificiale” (EGEA, 2017) in about 10 public events
- I have been invited as speaker in meetups, online webinars and podcasts

Organisational / managerial skills
- Leadership (currently PI of a research project involving 4 institutions and responsible of the Quantum Team of about 10 people)
- I have organized 10 international workshops in the last 3 years

Computer skills
- Programming and teaching quantum computers
- I assemble my tower computers including the GPUs
- Installation of the operating system

Driving licence
- B

ADDITIONAL INFORMATION

Advisory board memberships
- CRS4 Consorzio Ricerche Sardegna (2021 – now)
- Politecnico di Milano , Osservatorio Quantum Technology (2021 – now)

Panelist
- ITRS Workgroup on Emerging Research Materials "Deterministic doping" (Berkeley, Jan. 2013)
- ITRS Workgroup on Emerging Research Materials "Deterministic doping" (Berkeley, Nov. 2010)

Visiting professor
- 2016 Visiting Scholar at Waseda University, Tokyo - Silicon Single Photon Emitters Baased on Er Implantation
- 2015 Visiting Scholar at Waseda University, Tokyo - Single-atom devices for photonic applications
- 2014 Visiting Scholar at Waseda University, Tokyo, JSPS Fellowship - :Creation of Single-atom doped silicon photonics
- 2010 Visiting Researcher at Waseda University, Tokyo - High Frequency Operability of Single Atom Doped Silicon Quantum Devices

Industrial mentorships
- 2 Companies on quantum technologies (2021)
- 2 Companies on quantum computing (2022)
- 1 Company on quantum computing (2023)
- Others (before 2020)

Industrial contracts
- Telsy SPA on quantum technologies (2018)
- Data Reply SPA on quantum algorithms (2021-2022)
- Leonardo SPA on quantum machine learning (2021-2022)

Projects
- QUASIX - Funded by Italian Space Agency (ASI) – Principal investigator. Design, fabrication and characterization of photon emitters in silicon for space quantum key distribution. Lead contractor: CNR; unit: Università di Padova, Scuola Sant'Anna Pisa, Politecnico di Milano. Budget: 419.391,66€ Grant ASI: 65% i.e. 271.820,00 Contract 2019-5-U.0 n. 0002907 From 29-11-2019 – now
- QML - ISCRA-C Grant by CINECA – Access to adiabatic quantum computer D-Wave computational time (2021-2022)
- AWS Braket – Grant of 14000$ of credit for using Rigetti, IonQ, DWave and Oxford Quantum Computing quantum computers. (2021-2022)
- NARCISO - EU-H2020 FET-OPEN - PI Monica Bollani - Responsible of the Tasks on deep learning applied to material science (EU-H2020 Grant Agreement no. 828890) From 26-03-2019 – now
- "Deep atomic states of germanium dopant in silicon" Funded by: NFFA . Co-proponent with Prof. T. Tanii (Waseda University) User project ID 188 From 01-02-2017 to 01-04-2018
- “QuDec – Quantum Decoder” Funded by the Italian MD – Scientific Responible and WP Leader (total funding 1MEUR, grant 50%) From 27-08-2011 to 24-10-2013
- “Creation of Single-atom doped silicon photonics” – Funded by JSPS carried at the Waseda University di Tokyo From 06-10-2014 tol 27-10-2014
- High frequency operability of single atom doped Silicon quantum devices” -- Funded by Italian Ministry of Foreign Affairs and MEXT Japan – Principal investigaror with Prof. Takahiro Shinada (Waseda University Tokyo) From 1-1-2010 to 31-12-2012.

- "Development of novel metamaterials with enhanced properties in the Terahertz regime" Funded by CNR and NSC Taiwan – Principal investigator wit Prof. Ta-Jen Yen (Tsing-Hua University, Hsinchu, Taiwan)
  From 01-01-2010 to 31-12-2011
- MARTA ""Metamateriali per Applicazioni Radar e di Telecomunicazioni Avanzate"" – Funded by the Italian MD – Deputy coordinator and Work Package Leader "Metamateriali Microstrutturati" with Consorzio Nazionale Interuniversitario delle Telecomunicazioni (WP grant 145.000 EUR)
  From 18-02-2006 to 14-10--2007.

Reviewer

- Reviewer for the journal Nature Communications, Nature Electronics, Nature Nanotechnology, npj Quantum Information, Physics Letters A, Quantum Science and Technology, Journal of Applied Physics, Optical materials
- Evaluator of the Romanian public research grants

Honours and awards

- President of the Jury of the "Pleiade Inernational Award/Innovation and New Techniologies", Sala del Cenacolo Camera dei Deputati ,Rome, 7/6/2019
- Winner of the 4th Jury Prize - Essay on the Nature of Time from the "Foundational Questions in Physics and Cosmology Institute" FQXi (finanziato dalla John Templeton Foundation) (1000$) 08-03-2009
- Winner of the Young Scientist Award dell'International Union of Radio Science Commettee B (450 EUR) 26-05-2004

Patents and prototypes

- International Patent: A computer implemented method for real time quantum compiling based on artificial intelligence Nr: PCT/IB2022/052359 Moro L, Prati E, Restelli M – 16/03/2022
- National Patent: "Method and system for performing quantum calculations in a quantum neural network and for implementing quantum neural networks" Nr. nr.: 102021000033071 Maronese M, Prati E - 30/12/2021
- Commercial prototype for a company "Random number generator based on quantum fluctuations in a silicon device" contract No.. CNR 2963 (2017) 59710 EUR
- National Paternt:: "Sistema e procedimento per la misurazione della permettività dielettrica e della permeabilità magnetica di un materiale in riflessione/trasmissione". Nr: TO 2008°000687. Amabile C, Prati E, Costa F, Monorchio A - 2008
- National Paternt: "Rivelatore di microonde" Nr: BG. 2005 A000021 Prati E, Fanciulli M, Ferrari G, Fumagalli L, Sampietro M - 2005

Organization of workshop

International workshops

1. L. Diosi, H. T. Elze (Chair), L. Fronzoni, E. Prati, G. Vitiello, DICE2010 "Space, Time, Matter – Current issues in quantum mechanics and beyond.", Castiglioncello, Sept. 2010. Keynote: L. Montagnier (Nobel Laureate)
2. L. Diosi, H. T. Elze (Chair), L. Fronzoni, J. Halliwell, E. Prati, G. Vitiello, DICE2012 "Space, Time, Matter – Current issues in quantum mechanics and beyond.", Castiglioncello, Sept. 2012. Keynote: Prof. Y. Aharonov (Wolf Prize)
3. L. Diosi, H. T. Elze (Chair), L. Fronzoni, J. Halliwell, C. Kiefer, E. Prati, G. Vitiello, DICE2014 "Space, Time, Matter – ...news on missing links.", Castiglioncello, Sept. 2014. Keynote: Prof. G. t'Hooft (Nobel Prize), Prof. A. Connes (Fields Medal)
4. L. Diosi, H. T. Elze (Chair), L. Fronzoni, J. Halliwell, C. Kiefer, E. Prati, G. Vitiello, DICE2016 "Space, Time, Quantum Mechanics", Castiglioncello, 12-16 Sept. 2016. Keynote: Noam Chomsky
5. L. Diosi, H. T. Elze (Chair), L. Fronzoni, J. Halliwell, C. Kiefer, E. Prati, G. Vitiello, DICE2018 "Space, Time, Quantum Mechanics", Castiglioncello, 17-21 Sept. 2018. Keynote: G. F. R. Ellis
6.. Cavazzoni, D. Ottaviani, E. Prati "Quantum Computing and High Performance Computing 2019", Casalecchio Reno (Bologna), Italia with CINECA, 19 December 2019
7. D. Ottaviani, E. Prati "Quantum Computing and High Performance Computing 2020", (Online), with CINECA, 15 December 2020
8. M. Caligiuri, E Prati, L. Rucco, "Workshop on Quantum Security" ITASEC21 (online) 7th April 2021
9. "QCE IEEE Quantum Week 2021", (Online), IEEE October 2021 Steering committee
10. D. Ottaviani, Mengoni, E. Prati "Quantum Computing and High Performance Computing 2021", (Online), with CINECA, 15-16 December 2021
11. A. Malaschini, E. Prati, "Winning the artificial intelligence era: Quantum Diplomacy and the Power of Automation", with Centro Studi Americani and Fondazione Leonardo, 27 April 2022
12. L. Dispenza, E Prati, "Workshop on Quantum Security", Roma, ITASEC22 20th June 2022
13. L. Diosi, H. T. Elze (Chair), L. Fratino, J. Halliwell, C. Kiefer, E. Prati, G. Vitiello, DICE2022 "Space, Time, Quantum Mechanics", Castiglioncello, 19-23 Sept. 2022. Keynote: G. T'Hooft (Nobel laureate)
14. S. Achilli, C. Benedetti, E. Prati, D. Tamascelli, "Open Problems in Quantum Machine Learning", Milan, 13 October 2022
15. D. Ottaviani, Mengoni, L. Moro, E. Prati "Quantum Computing and High Performance Computing 2022", Bologna, with CINECA, 15 December 2022

Italy-Japan Bilateral Workshops

16. E. Prati and T. Shinada, I Italy–Japan Workshop on Single Atom Control for Future Nanoelectronics, November 2011, Tokyo, Japan (granted by Italian Embassy in Tokyo).
17. E. Prati and T. Shinada, II Italy-Japan Workshop on Silicon nanoelectronics for advanced applications, May 2013, Riva del Garda, Italy (granted by Active Technologies SRL)
18. E. Prati and T. Shinada, III Italy-Japan Workshop on Silicon nanoelectronics for advanced applications, June 2015, Kyoto, Japan (granted by Italian Embassy in Tokyo and CIES Tohoku)
19. E. Prati and T. Tanii, IV Italy-Japan Workshop Silicon nanoelectronics for advanced applications,, May 2017, Lago di Como, Italy (granted by CNR and JSPS)

Seminars

1. E. Prati "Random Telegraph signal in MOSFET devices", Hitachi Cambrdige Seminar, 8/10/2006
2. E. Prati, "A Lab in a silicon chip: Single Atom Based Nanoelctronics and THz applications", Consorzio Nazionale Internuiversitario delle Telecomunicazioni, Pisa 18/1/2011
3. E. Prati, "Emerging physics in single electron and single atom devices", INFN Frascati 12/10/ 2011
4. E. Prati, "P-monolayer deterministic doping of silicon for THz applications"; Tsingh Hua Uniersity, Hsinchu, Taiwan, 12/2011
5. E. Prati, "Emerging physics in single electron and single atom devices", NSC Hsinchu Taiwan 12/2011
6. E. Prati, "Silicon nanoelectronic devices based on few donors", Seminario presso CNR-IMM Catania, 28/9/2012
7. E. Prati, "Silicon nanoelectronic devices based on few donors" Seminari INFN, Firenze 31/10/2012
8. E. Prati, "Experimental breakdown of classical physics in arge one dimensional systems", Seminar of Shizuoka University, Hamamatsu- Japan, 15/10/ 2014
9. E. Prati, "Atomic scale nanoelectronics: advancements and directions" , Università di Parma, Parma 14 /11/2014
10. E. Prati, "Single atom based nanoelectronic silicon devices", TUDelft Seminar, 12/2/2015
11. E. Prati, "Silicon nanoelectronics: from atom base devices to the quantum Moore's law", RIKEN Seminars, Tokyo Japan, 10/11/2015
12. E. Prati, " Silicon nanoelectronics from atom based devices to te quantum Moore's law + extra content on artificial neurons", UCL Seminars, Londra, UK, 18/2/ 2016
13. E. Prati, "Quantum neuromorphic hardware for quantum artificial intelligence", IIT, Genova 27/11/2016
14. E. Prati, "Single atom devices for nanoelectronics and nanophotonics", at FBK and IFN Trento, 16/2/2017
15. E. Prati, "Single atom devices for nanoelectronics and nanophotonics", at Università di Padova, 27/4/2017
16. E. Prati, "Sicurezza e tecnologie quantistiche" Modena 21/11/2017
17. E. Prati, "Machine learning for quantum technology", Seminari Dip. Fisica, Milano 23/1/2019
18. E. Prati, "Quantum computers: hardware, software and applications", Seminario della Scuola Superiore Sant'Anna, Pisa 22/1/ 2020
19. E. Prati, "Programming artificial intelligence on quantum computers" , Dipartimento di Fisica - Università degli Studi di Milano, online live webinar, 8/4/ 2020
20. E. Prati, "Deep learning and quantum machine learning: Applications to materials science", Duke University Seminar online, 23/4/2021
21. E. Prati, "Programming artificial intelligence on quantum computers" invito ricevuto da Università Milano Bicocca at the "Ciclo di seminari interdipartimentali sulle tecnologie quantistiche" 14/6/2021
22. E. Prati, "Quantum diplomacy: understanding international relations in the digital age" 27/4/2022
23. E. Prati, "Quantum artificial intelligence" Summer School Physical Sensing and Processing, Bologna, 14/7/2022

Presentations

Plenary Keynote

1. E. Prati, IEDM 2014, San Francisco, Dec. 2014 (KEYNOTE) IEDM `la maggiore conferenza al mondo di dispositive elettronicicon 1900 participanti in sala da industria, università´e centri di ricerca.

TEDx

2. E. Prati, Cosa chiederemo all'oracolo quantistico, TEDxCNR, Rome 8 Oct. 2016

Invited Speaker

3. E. Prati, Microwave effects in silicon nanostructures, ANM 2008, Aveiro, Portugal, 23-25 June 2008
4. E. Prati, From classical to quantum observables in a mesoscopic electronic system, 21st-century directions in de Broglie-Bohm theory and beyond, Vallico, Italy, 28 Aug – 4 Sept. 2010
5. E.Prati, Competition of Spin and Valley Degrees of Freedom in Silicon Quantum Dots for Quantum Information Processing, ANM2010, Agadir, 12-15 Sept. 2010
6. E.Prati Control of the Energy Levels of a Single Atom in a Back Gated Silicon Quantum Dot, Nano2010, Rome, 13-17 Sept. 2010
7. E.Prati, Exploring the foundations of physics in solid state systems at ultra-low energy, DICE2010 - Space Time Matter: QM and Beyond, Castiglioncello, Italy, Sept. 2010
8. E. Prati, Experiments with individual electrons, COST Action: Quantum Mechanics Without Observers, Sesto, Italy, Aug. 2011
9. E. Prati, "From coherent transport to Hubbard band formation in donor array in silicon", Italy-Japan Bilateral Seminar 2011, Tokyo japan 10 Novembre 2011
10. E. Prati, Phase transitions in few electron systems, CORTONA 2012, Convegno Informale di Fisica Teorica, Cortona, May 2012
11. E. Prati, Atom Arrays in Semiconductors: From Quantum Computers to Quantum Encryption, PQCrypto 2011, Rhodes, Greece, Sept. 2012
12. E. Prati, "Deterministic doping – Overview and issues", ITRS 2013, Berkely, 31 Gennaio 2013
13. E. Prati, Formation of Hubbard bands in arrays of a few dopant atoms in a silicon transistor, Edison18, Matsue, Japan, Jul. 2013
14. E. Prati, Atomic scale nanoelectronics for quantum neuromorphic devices, INEC 2014, Hokkaido, Japan, Jul 2014
15. E. Prati, Single ion implantation of Ge donor impurity in silicon transistors, Silicon Nanoelectronic Workshop, Kyoto, Jun 2015
16. E. Prati, Quantum transport in silicon quantum devices: from valley states to the quantum Moore's law, QUAINT 2015, Swansea, UK Jul 2015
17. E. Prati, Quantum information at the time-reversal symmetry edge of quantum chaos, Time Machine Conference 2015, Torino, Italy, Oct. 2015
18. E. Prati, The quantum Moore's law: from atoms to scalability of silicon quantum information processing, PNiP 2015, Cambridge, Dec. 2015
19. E. Prati, CTAP in exchange-only spin qubits and scalability perspectives by CMOS quantum electronics, Mini Symposium "Spatial Adiabatic Passage", Okinawa, , Japan, 25-27 May 2016,
20. E. Prati, "Nanoelectronics for brain emulation at the edge between noise and quantum information processing", V Symposium Nanoelectronics for brain emulation at the edge between noise and quantum information processing, Sendai, Japan, 27-28 February 2017
21. E. Prati, "Cibernetica del XXI secolo", L'ecosistema cibernetico al servizio della sicurezza nazionale, Camera dei Deputati 21/12/2017, Roma
22. E. Prati, "Reinforcement learning-based control of quantum systems" DICE2018 - Space Time Matter QM and Beyond, Castiglioncello, Italy, 21/09/2018
23. E. Prati, "Intelligenza artificiale tra la Potenza e l'atto", AI+BOTS, Milano, 26/9/2018
24. E. Prati, "Dal deep learning all'intelligenza artificiale quantistica", Computer Quantistico in Life Science, Forum Sistema Salute, Firenze 12 /17/2018
25. E. Prati, "From Artificial Intelligence to the Quantum Mind", IOP London and South East Branch Lecture Program Fall 2018, London, UK, 31/10/2018
26. E. Prati, "Extending he supply chain of silicon towards quantum communications", Workshop in QKD for Space Systems, Roma, 23/10/2018
27. E. Prati, "Machine learning for quantum technology", Quantum Digital Winter Workshop, Milano, Italia, 23 January 2019
28. E. Prati, "Deep Reinforcement Learning for Coherent Transport of Spin Qubits", Workshop Quantum vs. Classical Technologies: The Electronics Perspective, TUDelft, Delft (NL), 1 May 2019
29. E. Prati, "Deep reinforcement learning for steering qubits", Machine Learning for Quantum Technology Workshop 2019, Erlangen, Germany , 8-10 May 2019
30. E. Prati, "Machine Learning in Optical Quantum Technologies", Workshop ASI/ESA on Optical & Quantum communication, Roma, Italia, 2 July 2019.
31. E. Prati, "Deep learning for quantum technologies", IQIS2019,Milano, Italia, 9-12 September 2019
32. E. Prati, "Dal deep learning all'intelligenza artificiale quantistica", SINNOVA 2019, Cagliari, Italia, 4 October 2019
33. E. Prati, "Introduction to quantum computers", Workshop Quantum computing and High Performance computing, CINECA Casalecchio Reno, Bologna, Italia, 19 Dec 2019.

34. E. Prati, “Training methods of quantum neural networks”, The 7th International Symposium on Brainware LSI”, Sendai, Japan, 28-29 February 2020 (cancelled for COVID19)
35. E. Prati, “Deep reinforcement learning for quantum firmware”, Codemotion2020 online 27/05/ 2020
36. E. Prati, Seminario del Dipartimento di Fisica – Università Statale di Milano,8 Aprile 2020
37. E. Prati , “Deep learning and quantum machine learning: Applications to materials science”, ACS Spring Meeting, online, 12/04/2021
38. E. Prati, "Multiclass Supervised Learning by Quantum Tensor Networks", IEEE Quantum Week QCE21, Quantum Artificial Intelligence Workshop, online, 20 Ottobre 2021
39. E. Prati, “Quantum compiling by deep reinforcement learning”, APS March Meeting 2022
40. E. Prati, “Quantum machine learning: training a quantum system to learn a task” DICE2022 - Space Time Matter: QM and Beyond, Castiglioncello, Italy, 17/09/2022

Contributed talks

41 .E. Prati, “Electrically detected electron spin resonance in low density GaAs 2DES”, INFM Meeting 2004, Genova 8-10/06/2004
42. E. Prati et al., Atom Arrays in Semiconductors: From Quantum Computers to Quantum Encryption, PQCrypto 2011, Taipei, Taiwan, 2/12/2011 (RECENT RESULTS SESSION)
43. E. Prati, “Charge dynamics of a single donor coupled to a few electron quantum dot in silicon”, IQIS 2012, Padova 26/9/2012
44. E. Prati, “Timeless physics from an experiental perspective”, Time Machine Conference 2012, Torino 15 /1702012
45. E. Prati, “Single atom arrays for coherent transport in silicon devices”, International IWorkshop on Silicon Quantum electronics, Villard de Lans, France, 7/2/2013
46. E. Prati, “Quantum transport at inter-device distance in single-ion implanted arrays of atoms in silicon devices” , Quantum Dots 2014, Pisa, Italy 14/05/2014
47. E. Prati, The quantum Moore's law: an upper bound to the amount of workable quantum information in silicon platform, SiQiP 2015 IoP Conference, Cambridge, Sept. 2015 (SELECTED ORAL)

Publications

ORCID 0000-0001-9839-202X

Peer reviewed international articles

1. E. Prati, Propagation in gyroelectromagnetic guiding systems, J. Electr. Wav. Appl., 17, 8, 1177-1196 (2003) [IF2019 1.373] DOI: 10.1163/156939303322519810
2. E. Prati, S. Faralli, M. Martinelli, G. Annino, G. Biasiol, L. Sorba, Improved Microwave Hall Effect Measurements Method, Review Scientific Instruments, 74, 1, 154-159 (2003) [IF2019 1.480] DOI: 10.1063/1.1523645
3. E. Prati, Crossover between the cell size and the wavelength of the incident radiation in metamaterials, Microw. Opt. Technol. Lett. 40, 4, 272 (2004) [IF 0.743] DOI: 10.1002/mop.11349
4. E. Prati, G. Annino, M. Martinelli, Complex Variational Axial Matching Method for Single-mode and Overmoded Dielectrid Resonators, Electromagnetism, 24, 8, 565-582 (2004) [IF 0.792] DOI: 10.1080/02726340490513257
5. E. Prati, Microwave propagation in ferromagnetic semiconductors, J. Magnetism and Magnetic Materials, 272-276, 3, 1999-2001 (2004) [IF 1.283]
6. G. Ferrari, L. Fumagalli, M. Sampietro, E. Prati and M. Fanciulli, CMOS fully compatible microwave detector based on MOSFET operating in resistive regime, IEEE Microwave and Wireless Components Letters, 15, 7, 445 (2005) [IF2019 2.236] DOI: 10.1109/LMWC.2005.851550
7. G. Ferrari, L. Fumagalli, M. Sampietro, E. Prati and M. Fanciulli, DC current modulation in field effect transistors operating under microwave irradiation for quantum read out, Journal Applied Physics, 98, 044505 (2005) [IF2019 2.328] DOI: 10.1063/1.2007852
8. E. Prati, M. Fanciulli, F. Capotondi, G. Biasiol, L. Sorba, A. Kovalev, J. D. Caldwell, and C.R. Bowers, Magnetoresistively Detected Electron Spin Resonance in Low Density Two Dimensional Electron Gas in GaAs/AlGaAs Single Quantum Wells, IEEE Transactions on Nanotechnology 4, 100 (2005) [IF2019 2.196]
9. E. Prati, M. Fanciulli, G. Ferrari, M. Sampietro, Effect of the Triplet State on the Random Telegraph Signal in Si n-MOSFETs, Physical Review B 74, 033309 (2006) [IF2019 3.575] DOI: 10.1103/Phys
10. E. Prati, Microwave Propagation in Round Guiding Structures Based on Double Negative Metamaterials, Int. Journ. Infr. And Mill. Waves, 27, 1227-1239 (2006) [IF 0.692] DOI: 10.1007/s10762-006-9134-3
RevB.74.033309

11. E. Prati, M. Fanciulli, A. Calderoni, G. Ferrari, M. Sampietro, Microwave irradiation effects on random telegraph signal in a MOSFET, Physics Letters A 370, 491-493 (2007) [IF2019 2.278] DOI: 10.1016/j.physleta.2007.05.086
12. E. Prati, M. Fanciulli, Manipulation of localized charge states in n-MOSFETs with microwave irradiation, Physics Letters A 372, 3102-3104 (2008) [IF2019 2.278] DOI: 10.1016/j.physleta.2008.01.039
13. E. Prati, M. Fanciulli, G. Ferrari, A. Calderoni, M. Sampietro, Effect of microwave irradiation on the emission and capture dynamics in silicon metal oxide semiconductor field effect transistors, Journal of Applied Physics 103, 104502, (2008) [IF2019 2.328] DOI: 10.1063/1.2924407
14. E. Prati, M. Fanciulli, G. Ferrari, M. Sampietro, Giant random telegraph signal generated by single charge trapping in submicron n-metal-oxide-semiconductor field-effect transistors, Journal of Applied Physics 103, 1 (2008) [IF2019 2.328] DOI: 10.1063/1.2939272
15. E. Prati, R. Latempa, M. Fanciulli, Microwave Assisted Transport in a Single Donor Silicon Quantum Dot, Physical Review B 80, 14, 165331 (2009) [IF2019 3.575] DOI: 10.1103/PhysRevB.80.165331
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Teaching

Courses

2022-2023 Laurea Magistrale in Intelligenza Artificiale – UNIMI – UNIPV - UNIMIB – Quantum Simulation (with quantum computing laboratory) – 28 h
2022-2023 Laurea Magistrale in Intelligenza Artificiale – UNIMI – UNIPV - UNIMIB – Artificial intelligence for Physics – 56 h
2022-2023 Università degli Studi di Milano – Laurea Triennale in Fisica: Meccanica (Es.) – 36 h
2020-2021 Politecnico di Milano – Corso di Dottorato in Fisica - Quantum Artificial Intelligence – 25 h
2019-2020 IUSS Pavia – Corso seminariale – Introduction to Quantum Artificial Intelligence – 10 h
2018-2019 Politecnico di Milano – Corso di Dottorato in Fisica - Quantum Artificial Intelligence 5 CFU 25 h
2013-2014 Politecnico di Milano - Fondamenti di Fisica Sperimentale I (INTEGR.) 2 semester 40 h

National and international Schools

2020-2021 - Teaching assignement at Politecnico di Milano Scuola di Dottorato Politecnico di Milano Advanced PhD course on "High Resolution Electronic Measurements in Nano-Bio Science", previsto per i giorni 7-18 June 2021
2019 - Scientific responsible of the 1-day course “Programmazione di algoritmi e intelligenza artificiale su computer quantistici”, Milano, Italia by Vista Technology SRL, 19 September 201 and teaching “Introduction to quantum computers” and “Introducion to Artificial Intelligence”, 19 September 2019
2018-2019 - Teaching assignement at Master Sicurezza – Link Campus University su “Intelligenza artificiale: opportunità e rischi”, 7 February 2019
2018-2019 - Teaching assignement at Politecnico di Milano Scuola di Dottorato Politecnico di Milano "High Resolution Electronic Measurements in Nano-Bio Science", 8-12 April 2019
2017-2018 - Teaching assignement at Master in “Digital Forensics e Tecnologie Cyber”– Scuola delle Telecomunicazioni Forze Armate in Chiavari-Stato Maggiore Difesa, “Uno sguardo internazionale alla cyber security”, Chiavari 8 March 2018
2016-2017 - Teaching assignement at Politecnico di Milano Scuola di Dottorato Politecnico di Milano "Electrical characterisation of nanoscale samples & biochemical interfaces: methods and electronic instrumentation", 21-25 November 2016
2014-2015 - Teaching assignement at Politecnico di Milano Scuola di Dottorato Politecnico di Milano "Electrical characterisation of nanoscale samples & biochemical interfaces: methods and electronic instrumentation", 24-28 November 2014
2012-2013 - Teaching assignement at Politecnico di Milano Scuola di Dottorato Politecnico di Milano “Electrical characterisation of nanoscale samples & biochemical interfaces: methods and electronic instrumentation”, 19-23 November 2012
2010-2011 - Teaching assignement at Politecnico di Milano Scuola di Dottorato Politecnico di Milano “Electrical characterisation of nanoscale samples & biochemical interfaces: methods and electronic instrumentation”, 16-19 November 2010
2008-2009 - Teaching assignement at Politecnico di Milano Scuola di Dottorato Politecnico di Milano “Caratterizzazione elettrica di strutture nanoscopiche: metodi e strumentazione elettronica”, 5-7 November 2008
Anno 2007 - Teaching assignement at INSTM XIII Scuola Nazionale di Scienza dei Materiali, Giornata su Caratterizzazione dei nanosistemi: V modulo - “Trasporto di carica e spin in nanostrutture”, Bressanone, 30 September - 9 October 2007

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