

## Curriculum Docente: Stefano Riboldi

### Foto

### Titoli

1998 : Laurea in Ingegneria Elettronica, Politecnico di Milano

2001 : Dottorato di Ricerca in Ingegneria Elettronica, Politecnico di Milano

### Curriculum professionale

Membro associazione IEEE dal 2001

Fogarty fellowship presso i National Institutes of Health (NIH), Maryland, US nel 2002/03

Ricercatore confermato in Elettronica presso il Dipartimento di Fisica dal 2005

Responsabile locale esperimento CLYC nel 2015/16

Co-responsabile dell'elettronica di front-end dell'esperimento L-200 (WBS 1.07) dal 2018

Responsabile locale esperimento GERDA dal 2019

Professore associato in Fisica Sperimentale delle Interazioni Fondamentali presso il Dipartimento di Fisica dal 2022

Attività didattica:

- Laboratorio di Elettronica Digitale (docente responsabile) dal 2005 al 2017
- Elettronica dei Sistemi Digitali dal 2005 (docente responsabile nel 2024)
- Laboratorio di Ottica Elettronica e Fisica Moderna (II modulo) dal 2018
- Metodi Computazionali per la Fisica dal 2023

Altre attività

- Revisore per le riviste: Nuclear Instruments and Methods B, Transactions on Nuclear Science, European Journal of Physics C, Journal of Instrumentation
- Membro di 3 Commissioni di Dottorato presso il Politecnico di Milano

### Ambito di ricerca

Elettronica analogica, a basso rumore e criogenica, elettronica digitale e processamento di segnali per applicazioni di fisica nucleare, delle alte energie, astrofisica, applicazioni biomedicali e applicazioni di potenza mirate al risparmio energetico.

## **Pubblicazioni**

Co-autore di oltre 120 pubblicazioni di articoli su riviste scientifiche internazionali e proceeding di conferenze.

Gli articoli su rivista del 2023 sono:

- Identification and reconstruction of low-energy electrons in the ProtoDUNE-SP detector
- Reconstruction of interactions in the ProtoDUNE-SP detector with Pandora
- Optimization and first electronic implementation of the Constant-Fraction Time-Over-Threshold pulse shape discrimination method
- Highly-parallelized simulation of a pixelated LArTPC on a GPU
- Optimum filter synthesis with DPLMS method for energy reconstruction
- Liquid argon light collection and veto modeling in GERDA Phase II

**([Elenco pubblicazioni sull'Archivio Istituzionale della Ricerca](#))**

© Copyright 2008

## Curriculum vitae

### EDUCATION AND TRAINING

- Graduated Maxima cum Laude in Physics at Università degli studi di Milano - Dipartimento di Fisica on 26/03/2001, title *"Misura dell'energia cinetica degli elettroni fotoemessi da catodi in Cs<sub>2</sub>Te mediante un analizzatore a tempo di volo"*

### WORK EXPERIENCE

- 16/9/2001 - 15/3/2002: Fellowship, INFN
- 6/5/2002 - 5/5/2004: Fellowship, CE fund (PDS-XADS)
- 9/7/2004 - 8/1/2005: 2222 art., CE fund (CARE)
- 14/2/2005 - 4/3/2005: Invited Scientific Visitor at DESY
- 21/3/2005 - 20/11/2005: 2222 art., CE fund (SFS)
- 1/2/2006 - 31/1/2008: Technological Research Grant, CE fund (CARE)
- 1/4/2008 - 31/10/2008: 23 art., CE fund (IA-SFS)
- 1/11/2008 - 6/2/2009: 23 art., MIUR-SPARX fund
- 3/4/2009 - 31/3/2010 : 23 art., CE fund (EUROTRANS)
- 3/5/2010 - 31/1/2012 : 23 art., CE fund (ILC-HiGrade)
- 5/4/2012 - 4/4/2015: 23 art., XFEL fund
- 5/4/2018 - 4/4/2018: 36 art., XFEL fund
- 5/4/2018 - 30/9/2018: 36 art., ESS-MIUR fund
- 1/10/2018 – 31/12/2020: Permanent position as Technology Scientist at INFN Milano – LASA laboratory (Segrate)
- 1/1/2022 – today: Senior Technology Scientist at INFN Milano – LASA laboratory (Segrate)

### ASSIGNMENTS AND RESPONSIBILITIES

- 2002-today: Co-advisor of bachelors and master thesis
- 2006: member of the Local Organizing Committee of *"Workshop on High QE Photocathodes"*, INFN Milano lab. LASA, 2006
- 2010-2015: deputy of the Italian co-leader of work package WP04 (800 13 GHz cavities production) for European XFEL
- 2012-2015: Quality Control Manager for the 20 3.9 GHz cavity production for European XFEL
- 2015-today: Member/President of several INFN selection for temporary or permanent position (17366/2015; 17365/2015; MI/C6/696; MI/C6/20165; 20975/2019; MI/C6/21526; MI/C6/22285; 23861/2021, LNF/C6/24667)
- 2016: invited by JLab for presenting European-XFEL cavities production results
- 2017-today: Member/President of several INFN tenders (disp. 18960, 13/4/2017; disp. 20478, 15/11/2018; disp. 20586, 07/12/2018; del. 12168, 11/9/2019; disp. 22184, 5/6/2020; disp. 23873, 3/12/2021; disp. 24100, 8/2/2022; disp. 26306, 11/1/2024; disp. 26939, 8/7/2024; disp. 27294, 6/11/2024)
- 2018-today: Quality Engineer of the QC for the 36 704.42 MHz cavity production, and responsible of the production cycle for the 38 ESS medium beta cavities
- 2018: member of the Local Organizing Committee of *"TESLA Technology Collaboration (TTC) Meeting"*, Feb 2018 (Unimi)
- 2018: external expert for the DUNE PIP-II Cryomodules, STFC's Projects Peer Review Panel (PPRP), June 5<sup>th</sup> 2018
- 2019: invited by SHINE for presenting QC/QA experience in large scale productions
- 2020-today: member of WG2 (Accelerator Design) for the ILC International Development Team (IDT), since Nov 2020
- 2021-today: member of PIP-II Quality Control Coordination Group (QCCG) for 36 SRF low  $\beta$  (PIP-II) cavities production
- 2022: member of the ML&SRF Steering Panel in the frame of the ILC pre-lab whose mission was the identification of the R&D activity relative to SRF key technology, Jan-Mar 2022
- 2022-today: member of the INFN CSN5 "Accelerator" sub-panel, external referee of CSN5 projects (Crown, SuperMad, Vaporada)
- 2022: member of the Local Organizing Committee of *"European Workshop on Photocathodes for Particle Accelerator Applications (EWPA2022)"*, Unimi, Sep. 2022
- 2022-today: member of TESLA Technology Collaboration (TTC) Technical Board (TB) for Cavity and Coupler topics, since Oct 2022
- 2022-today: member of the WG1 "RF Bulk" in the RF Panel of the ESPP Accelerator R&D Roadmap, since Nov 2022
- 2023-today: member of the LCWS2024 Program Committee
- 2023-today: national INFN PI of the Eu staff exchange program EAJADE and of the WP2 (high perform. RF systems), since Mar 2023
- 2023-today: national INFN PI of R&D program on SRF HighQ/HighG (CSN1), since 2023
- 2023: member of the Program Committee of the LCWS2024 in Tokyo, Sep. 2023
- 2024-today: member of the Coordination Group of LCVision team, since Sep. 2024
- 2025: member of the Program Committee of the LCWS2025 in Valencia, Mar. 2025

### RESEARCH AND TECHNOLOGICAL ACTIVITY

#### Photocathodes for High brightness RF gun (2001-today)

- R&D activity on metal (Cu, Ag) and semiconductor (Cs<sub>2</sub>Te in UV range and KCsSb in visible range) photocathodes. Characterization of photoemissive and optical properties: thermal emittance measurement at different Is with a low energy Time-Of-Flight spectrometer that I developed and characterized at LASA, angle-resolved optical measurements (n, k), pollution measurements, measurement of Eg + Ea and study of the films photoemissive threshold, determination of reliable recipes in view of the photocathodes usage in the High Brightness RF guns.
- Since 2004, responsible of the photocathode production (mainly Cs<sub>2</sub>Te) used as electron sources in several labs and user facilities: TTF (now FLASH) and PITZ at DESY, APEX at LBNL, A0 and FAST at FNAL, LCLS-II at SLAC. Results: about 150 Cs<sub>2</sub>Te films produced, QE

@ 254 nm 11.7% with spatial uniformity > 90%, dark current reduced by optical polishing (roughness < 10 nm), operative lifetime (24/24h, 7/7d) increased from 3 months to the actual 4 years (at FLASH).

- Improvement of the diagnostic during film deposition with the "Multiwavelength" technique, for better reliability and characterization during growth and after production (also post-usage), managing of the web-accessible SQL database (<http://www.lasa.mi.infn.it/tfcatodes>) that collects both the parameters of the produced photocathodes and their performance in RF guns, managing of the relationships between LASA and the various international laboratories
- Development, installation and characterization of a new photocathode production system dedicated to green films (KCsSb) at LASA. The first three KCsSb photocathodes produced in 2021 were then tested in the RF Gun at PITZ (DESY Zeuthen), the second batch with optimized films growth have been produced and tested in PITZ RF Gun in 2024.
- Contribution to the CDR ("Injectors" section) of MariX (Multidisciplinary Advanced Research Infrastructure with X-rays), an interdisciplinary machine for X-ray radiation generation by both Compton backscattering and SASE FEL radiation, contribution for the TDR ("Injector section") of BriXSiO (MariX demonstrator). I'm collaborating to the experimental set-up for stress-testing Cs<sub>2</sub>Te photocathodes grown at LASA for robustness studies at the operating conditions required by the project (repetition rate of 100 MHz), and since January 2023 I'm the responsible for photocathode that will be used in the DC Gun for HB<sup>2</sup>TF (CSN5 call).

#### SRF cavities and ancillaries (2002-today)

- Application of "reliability" concepts right from the design stage of a waste transmutation complex powered by a Superconducting proton accelerator, experimental studies of the windowless coupling scheme between the accelerator and the reactor (PDS-XADS).
- Study and realization of the inner magnetic shield for the Superconducting RF proton cavity TRASCO (EUROTRANS)
- Characterization of the cavity flange systems at cryogenic conditions, with different material and geometry (CARE).
- Deep analysis of the cavity production steps. In particular: evolution of defect in Nb during cleaning and polishing processes (BCP and EP); in collaboration with industry, study and optimization of the Electron Beam Welding parameters during the mechanical production of Nb cavities obtaining a decrease of the overall process and production costs (CARE, E-XFEL).
- European XFEL (2007-2016).  
**800 1.3 GHz cavities production:** deputy of the Italian co-leader of the E-XFEL work package WP04 for the 800 1.3 GHz cavities production; member of the team of experts for Quality Control (QC) of the RF surface treatments of cavities; analysis of performance of cold RF tests, to highlight their correlations with the parameters of the various production processes; in collaboration with DESY, "know-how" transfer to industries (before present only in the research laboratories) of the entire production process (from the material selection to the cavity preparation ready to be cold tested).  
**20 3.9 GHz cavities:** construction of cavity prototypes and optimization of treatments at the industry; participation of the specifications definition of the full production cycle of series cavities and managing the whole QC cycle of the cavities (both in industry and in the LASA laboratory).
- European Spallation Source (ESS) (2015 – today).  
36 704.42 MHz medium  $\beta$  cavities production: Quality Engineer of the QC (Quality Control) of series production; definition of the production cycle of the prototypes and series cavities; reference person towards different collaborating institutes (INFN, industry, DESY for qualification tests, CEA for the integration of cavities in the cryomodule, ESS). All cavities were successfully installed in cryomodules and in March 2025 the first Beam On Dump was achieved at ESS. We are now under the production of further 4 ESS cavities that will be installed in the spare cryomodule as requested by ESS.
- Proton Improvement Plan II (PIP-II) (2017 – today).  
Since 2017, I'm working on the quality control plan definition for the future production of 38 low  $\beta$  cavities at 650 MHz for the PIP-II project, and since 2021 I'm member of PIP-II Quality Control Coordination Group (QCCG). The activity started with the first prototypes, used to both highlight criticalities on the production process and to develop the surface treatment recipe needed for reaching the required high Q<sub>0</sub>. Thanks to the experience gained with prototypes, we settled-up the full cavity production process and QC plan for the series cavity production at industry, and in 2025 the 2 pre-series cavity production have been launched.
- R&D activities on HQ/HG SRF Cavities: ILC Technology Network (ITN) and ESPP\_A\_SRF\_HQ and (2023 – today).  
In 2023 two R&D "synergic" activities started on the development of High Q / High Gradient (HQ/HG) SRF cavity performances to reach high sustainability needed for the construction of large future machines (as requested by the ESPP). Both R&Ds aim to develop the best cavity production process (with 1.3 GHz single-cell), and to prove the industrialization process (with 1.3 GHz 9-cells). While ITN R&D activities are targeted to ILC requirements (ILC in Japan), the ESPP\_A\_SRF\_HQ R&D scope is to gain an in-depth understanding of the effect of annealing and surface treatments on cavity performances (in term of HQ and HG), essential skills needed for the realization of future large machines (p.es. ILC, FCC, Muon-collider, etc.). Between the on-going activities, single-cell cavities production, surface treatments, material studies, pressure vessel code harmonization (PED, HPGS, ASME), design and realization of a new cryostat with insert for R&D measurements at 2 K at LASA (including magnetic shield, active magnetic hygiene, diagnostics, VT modernization of the acquisition system, etc.). These R&D activities are done in collaboration with international labs (CEA, CERN, KEK, FNAL, DESY, JLab, etc.), and also with the support of EU EAJADE staff-exchange program of which I'm the INFN PI.

## Rocco Paparella

*Email*  
*Nationality* Italian

### Education

- 1993 – 1998 **Scientific secondary studies**, Liceo Scient. Statale G. Gandini, Lodi, Italy.
- 1998 – 2003 **Academic studies in Physics**, University of Milan, Milan, Italy.
- March 2004 **Master of Science in Physics**, with thesis subject: “*Development of an active system for the control of induced vibrations in superconducting high gradient cavities for particles accelerator*”. LASA Lab, Italian Institute for Nuclear Physics (INFN) in Segrate, Italy. Final evaluation 110/110 with honor.
- 2005 - 2007 **Ph.D. course in Applied Physics**, in the field of accelerator physics. In collaboration with INFN institute and University of Milan, Milan, Italy.
- February 2008 **Ph.D in Applied Physics**, with thesis title: “*Fast Frequency Tuner for High Gradient Superconductive Cavities for ILC and XFEL*”. Dept. of Physics, University of Milan, Milan, Italy.

### Experiences and activities

- 2002 – 2003 **One-year experimental activity on Electronics**, with thesis subject: “*FPGA hardware implementation of a particle machine for modular multiplication*”. Astrophysics Institute (IASF) and National Research Board (CNR), Milan, Italy. Final evaluation of 30/30 with honor.
- June 2004 **Awarded INFN post-graduate 6 months grant.**
- July 2004 **Invited at DESY (Hamburg, Germany)** for a work stage on the topic “*Digital Signal Processing for the control of TESLA cavity detuning*”.
- 2006 - 2016 **Seminar annually held in Politecnico di Milano university** in the frame of the Physical Engineering course, with title “*Introduction to resonating superconducting cavities control systems for particle accelerators*”.
- June 2006 **Participation to “CERN Accelerator School CAS 2006”**: “*Introduction to accelerator physics*”, 1 – 13 October, Zakopane (Poland).
- 2006 – 2008 **Teaching Assistant** for the Electronic course and for the Accelerators laboratory course, Physics department, University of Milan.
- 2008 **Tutoring a Master degree thesis** entitled “*3.9 GHz resonant cavities characterization system for the European-XFEL*”, University of Milan.
- September 2009 **Participation to the “Fourth International Accelerator School for Linear Colliders”**, held by ILC GDE, ILCSC and ICFA Beam Dynamics at Huairou, Beijing, (China)
- 2009 – 2011 **Scientific research fellowship contract at INFN** on the ILC and European-XFEL high-gradient superconducting cavities.
- November 2011 **Invited at KEK (Tokyo, Japan)** for a work stage on the S1 Global project of the International Linear Collider.

2011 – 2014	<b>Teaching Assistant</b> for the Physics course, Informatics Science department, University of Milan.
2011 – 2013	<b>Junior Staff, three years research contract at INFN</b> on the MAX project: definition of experimental program, design and operation of cavity control system.
2013 - 2016	<b>Junior Staff, three years research contract at INFN</b> on the European-XFEL project: experimental characterization of the third-harmonic cavities and cryomodule at INFN and DESY test facilities.
2015	<b>Tutoring a Master degree thesis</b> entitled “ <i>Third harmonic 9-cells cavities characterization for the European-XFEL high brilliance electron beam linearization</i> ”, University of Milan.
2016	<b>Tutoring a Master degree thesis</b> entitled “ <i>Qualification measurements at 2 K for the superconducting cavities of XFEL and ESS projects</i> ”, University of Milan.
2015 – 2016	<b>Teaching Assistant</b> for the Physics course, Earth Science department, University of Milan.
2016 - 2017	<b>Junior Staff, three years research contract at INFN</b> on the European-XFEL project: experimental characterization of the third-harmonic cavities for the second cryomodule at INFN and DESY test facilities.
October 2017	<b>Permanent Staff</b> position at INFN Milano.
June 2018	<b>Project Coordinator</b> for the revision and upgrade of the cryogenic system at the LASA Laboratory – INFN-Milan.
February 2019	<b>Project Manager</b> for the Italian contribution to the PIP-II linac at Fermilab (USA).
January 2020	<b>Senior researcher</b> position at INFN Milano.

## Awards

January 2005	<b>Awarded Ph.D. 3 years funding</b> by University of Milan.
November 2005	<b>Awarded Eureka! 2005 Gold Medal</b> at the 54th World Exhibition of Innovation, Research and New Technology in Brussels for the submitted study of “ <i>Piezoelectric stack as a static force sensor</i> ” jointly performed with colleagues from DESY Hamburg, Germany, and Technical University Lodz, Poland.
June 2007	<b>Invited Talk</b> at the international conference MIXDES07 - Mixed Design of Integrated Circuits and Systems at Ciechocinek (Poland) with title “ <i>A Novel Approach for Hardware Implementation of a Detuning Compensation Control System for SC Cavities</i> ”
June 2008	<b>Awarded European Physical Society Accelerator Group (EPS-AG) prize:</b> “ <i>For a student registered for a PhD or diploma in accelerator physics or engineering or to a trainee accelerator physicist or engineer in the educational phase of their professional career, for the quality of work and promise for the future</i> ”, awarded during the European Particle Accelerator Conference 2008 at Genoa, Italy.
June 2008	<b>Invited Talk</b> at the international conference EPAC2008, plenary session, in Genova with title “ <i>A control and systems theory approach to the high gradient cavity detuning compensation</i> ”.
September 2008	<b>Awarded INFN national 2008 prize “Francesco Resmini”</b> , for the Ph.D. work presented in the thesis “ <i>Fast Frequency Tuner for High Gradient Superconductive Cavities for ILC and XFEL</i> ”.

October 2008	<b>Awarded LINAC08 special student poster session prize</b> , second place: “Awarded based on the quality of both the scientific work and the poster, the professionalism of the interaction with the judges at the poster, and the promise for the future.” Awarded during the LINAC08 conference at Victoria, BC, Canada.
September 2009	<b>Awarded “ILC School 2009, distinguished performance student award”</b> at the “Fourth International Accelerator School for Linear Colliders”, held by ILC GDE, ILCSC and ICFA Beam Dynamics at Huairou, Beijing (China).
March 2011	<b>Invited Talk</b> at the international conference TESLA Technology Collaboration 2011 in Milano with title “ <i>Comparison of Tuner Performances in S1-G</i> ”.
March 2011	<b>Invited Talk</b> at the international conference ALCPG Linear Collider Workshop 2011 at Eugene (USA) with title “ <i>S1-G Tuner performance summary</i> ”.
May 2013	<b>Editor for the ILC S1-Global Editorial Board</b> , presenting to the scientific community the contents and the results achieved by S1-Global project through the editing and publishing of a S1-Global KEK Report.
September 2015	<b>Invited Talk</b> at the international conference SRF 2015, plenary session, at Whistler, BC, Canada with title “ <i>Overview of recent tuner development on elliptical and low-beta cavities</i> ”
December 2015	<b>Convener</b> for the “ <i>Coupler and Tuners</i> ” session of the international conference “2015 TESLA Technology Collaboration workshop” at SLAC, California, USA
May 2016	<b>Invited Talk</b> at the international conference SLHiPP-6 at Daresbury (UK) with title “ <i>RF Design of ESS MB cavities</i> ”
February 2018	<b>Convener and organizer</b> for the “WG2 – CW Operation Challenges: couplers, tuner, modules” session of the 2018 TESLA Technology Collaboration workshop, Physics Department, Milan, Italy.
July 2022	<b>Member of the examination committee</b> for the XXXVIII cycle of the PhD program in Physics at the University of Milan.
April 2023	<b>Member of the Local Organizing Committee</b> for the international conference IPAC23 – <i>International Particle Accelerator Conference</i> , Venice, Italy.

## Languages

Native language	<b>Italian.</b>
Other languages	<b>English</b> , C1 - Advanced.

## Competences

Technical Tools	Computational software: Matlab, Python FEM, mechanical and EM analyses: Ansys Workbench, HFSS, Superfish CAD Modeling: Siemens NX Instrumentation: MAX, NI Labview DSP/FPGA workflow: ISE, Vivado Programming: Basic, C, C++.
-----------------	--

## Curriculum Vitae di Chiara Meroni

Email : [chiara.meroni@unimi.it](mailto:chiara.meroni@unimi.it)

### Esperienza Lavorativa

- 2023 -oggi Professore straordinario , Universita' degli Studi di Milano
- 2007- 2023 Dirigente di Ricerca INFN, Sezione di Milano
- 1993 - 2007 Primo Ricercatore INFN, Sezione di Milano
- 1984 - 1993 Ricercatore INFN , Sezione di Milano

### Ruoli Istituzionali

- 2019 - 2023 Giunta Esecutiva INFN
- 2020 - 2021 Vice Presidente INFN
- 2012 - 2023 Componente Consiglio Direttivo INFN
- 2012 - 2019 Direttrice della Sezione INFN di Milano
- 2012 - 2020 Collegio di Dottorato Fisica - Unimi
- 2009 - 2012 Componente Gruppo Lavoro Valutazione INFN(VQR ANVUR 2004-2010)
- 2000 - 2006 Commissione scientifica nazionale Fisica delle Particelle

### Comitati Scientifici Internazionali

- 2020 - 2023 Restricted ECFA (European Committee for Future Accelerator)
- 2022 - 2024 IAC (international advisory committee) Higgs/EW/Top Factory for European Strategy for Particle Physics Update
- 2019 - 2023 Resource Review Board for LHC experiments CERN
- 2020 - 2023 Comitato scientifico Laboratori Nazionali di Frascati

### Publications

- [Piu' di 1300 pubblicazioni](#) in riviste internazionali con referee (WOS) con piu' di 50000 citazioni e 5 articoli con piu' di 500 citazioni (WOS) e presentazioni a conferenze internazionali

### Ruoli di coordinamento della ricerca

- 2015 - 2020 Coordinatore nazionale del Progetto europeo AIDA 2020 (Advanced european Infrastructure for Detectors at Accelerator) for Horizon 2020
- 2015 - 2020 Collaboration Board di AIDA 2020
- 2011 - 2015 Coordinatore nazionale Progetto Europeo AIDA
- 2011 - 2015 Executive Board di AIDA
- 2010 - 2012 resp nazionale attivita' ATLAS UPGRADE e IB AUG (Institute Board) ATLAS UPGRADE
- 2009 - 2011 coord nazionale IBL (Insertable BLayer) ATLAS - IB ATLAS Pixel

- 2003 – 2009 coord nazionale Pixel Detector ATLAS – IB ATLAS Pixel
- 2008 – 2011 resp locale ATLAS e Coordination Board ATLAS
- 1993 – 2000 resp Slow Control Silicon Tracker di DELPHI

#### Attività di ricerca

- 1998 – oggi esperimento ATLAS a LHC al CERN
- 1982 – 2001 esperimento DELPHI a LEP al CERN – microvertice strip e pixel silicio, leptone tau
- 1985 - 1989 esperimento WA82 a OMEGA/SPS al CERN – adroproduzione di charm, trigger parametro d impatto
- 1979 - 1985 esperimento WA71 a OMEGA/SPS al CERN – rivelazione di particelle con B, trigger Si

Milano , Febbraio 2024

## **Chiara Guazzoni**

### **Short bio**



Chiara Guazzoni is Associate Professor of Electronics (since 2009) with tenure (since 2012) at Politecnico di Milano.

She graduated in Physics in 1996 at Università degli Studi, Milano, Italy where she attended a Master Course in Nuclear Physics in 1996.

In 2000 she obtained the Ph.D. in Electronics and Communications Engineering at Politecnico di Milano.

From 1999 up to February 2001 she had a research contract with Politecnico di Milano, Italy - Dipartimento di Elettronica e Informazione.

Since March 2001 she had worked as Assistant Professor of Electronics at Politecnico di Milano, Italy.

Since May 2008 she has been Associate Technological Researcher of the Istituto Nazionale di Fisica Nucleare (INFN) to which she was associated since 1995.

From November 2009, up to October 2011 she was visiting scientist of the Brookhaven National Laboratory where she spent short periods.

In 2014-2015 she took a 5-month maternal leave due to the birth of her daughter, Daniela.

Since 2014 she has the habilitation as Full professor of Electronics.

She is Senior Member of IEEE and Member of the Italian Physical Society (SIF).

### **Honors and Awards**

She won two best conference talk awards (Annual Meeting of the Electronic Group in Alghero (SS), Italy, June 10-13, 1999 and 85° National Conference of the Italian Physics Society, Pavia, Italy, September 20-24, 1999 (second place)).

She won the 1999 IEEE Nuclear and Plasma Sciences Society Graduate Student Award.

In 2001 she was awarded for her brilliant scientific activity by the Italian Physical Society.

In 2004 she received the 2004 IEEE Nuclear and Plasma Sciences Society Radiation Instrumentation Early Career Award, for "contributions to an innovative X-ray spectroscopic imager with fast frame rates and nuclear electronics".

### **Reviewer, Editorial Board and Committees**

She has been reviewer for the main journals in the field of radiation detectors, electronics and instrumentation.

She has been Member of the Organizing committee of the X and of the XI European Symposium on Semiconductor Detectors (Wildbad Kreuth, June 12-16, 2005 and June 7-11, 2009), of the Programme Committee of Bioimaging 2016 (Feb. 21-23, 2016, Rome, Italy), and member of the International Advisory Committee of ANSiP 2011 – Advanced School and Workshop on Nuclear Physics Signal Processing, Nov. 21-24, 2011, Acireale (CT) and of FATA 2019 - FAst Timing Applications for Nuclear Physics and Medical Imaging, 3-5 September 2019, Acireale (CT), Italy and FATA 2025.

She has been one of the Editors of two Volumes (568, 2006 and 624, 2010) of Nuclear Instruments & Methods in Physics Research. Section A and Associate Editor of IEEE Transaction on Nuclear Science, Special Issue of the SORMA West 2012 Conference (Vol. 60, 2013) and 2016 Conference (Vol. 64, 2017).

She was elected Member-at-Large of the Radiation Instrumentation Steering Committee (RISC) of the IEEE Nuclear and Plasma Sciences Society (NPSS) for the term 2014-2016.

She was appointed Chair of the Awards Sub-Committee of the RISC of the IEEE NPSS for 2016, 2017, 2018, 2021 and 2022.

She was elected Vice-Chair of the RISC of the IEEE NPSS for the term 2017-2018, Chair for the term 2019-2020 and she served as Immediate Past Chair for the term 2021-2022. This role greatly enhanced her leadership experience.

She was elected Vice-Chair of the Italian Chapter of the Nuclear and Plasma Sciences Society for the term 2016-2018 and 2018-2021.

She served as Deputy Program Chair for the 2015 IEEE Nuclear Science Symposium, San Diego (California) Oct. 31 - Nov. 7, 2015. The IEEE Nuclear Science Symposium is the premier meeting on the use of instrumentation in the nuclear fields and constitutes an ideal forum for scientists and engineers in the field of nuclear science, radiation instrumentation, software engineering and data acquisition.

She has been elected and served as General Chair for the 2022 IEEE Nuclear Science Symposium and Medical Imaging Conference, Milano (Italy), having the full scientific and financial responsibility (attendance more than 1,700 people), highlighting her international reputation in the field and her managerial skills.

She served as Topic Convener for the IEEE Nuclear Science Symposium in 2014, 2017, 2018, 2021, 2023 and is serving for 2025.

She was elected and served as LNS User Committee Member for the term 2021-2022 and 2023-2024.

She has been external reviewer for proposals submitted to the 2015 Initiation into Research of FONDECYT of CONICYT, Chile, to PRIN2010-2011, MIUR, Italy, for the R&D projects "Poli di Innovazione" issued by Regione Piemonte and managed by FinPiemonte SpA and for the POR Puglia 2014/2020 – Asse X – Azione 10.4. Avviso pubblico n. 2/FSE/2019 "Research for Innovation – REFIN, managed by ARTI, Agenzia Regionale per la Tecnologia e l'innovazione.

She is registered as reviewer in the Register of Expert Peer Reviewers for Italian Scientific Evaluation both for the Fundamental Research Area and for the Applied Research Area and served as reviewer for the European Commission being in the Expert List.

Since June 24, 2025 she is the National Scientific Committee 5 (Technological, inter-disciplinary and accelerators research) Coordinator for the INFN Milano Division.

### **Scientific Activity**

Since 1994 she has carried out her research activity in the field of Radiation Detectors and Frontend and Backend Electronics. The main research activities are: 1) Semiconductor radiation detectors for position and energy measurements of X-rays, gamma-rays and charged particles; 2) Low-noise front-end electronics; 3) Digital Acquisition systems and filtering techniques for signal coming from radiation detectors.

She presently carries out her research activity, both theoretical and experimental, in the research laboratories of Politecnico di Milano and in the past also of Università degli Studi di Milano. She collaborates/collaborated with the Halbleiterlabor of Max Planck Institut in Munich (Germany), with PNSensor GmbH (Germany), with the Brookhaven National Laboratory, with Sincrotrone ELETTRA in Trieste, with University of Siegen, with LABEC laboratory (INFN - Florence University), with University College London, with INFN Sezione di Catania and Laboratori Nazionali del Sud. For her research needs she has worked for short periods at the Halbleiterlabor of Max Planck Institut in Munich (Germany) and at Brookhaven National Laboratory (Upton, USA) and she took part in several beam times at the SYRMEP beam-line (Sincrotrone ELETTRA in Trieste, Italy), at the B16 beamline of Diamond Synchrotron Source in Didcot (UK), at GSI Helmholtzzentrum für Schwerionenforschung in Darmstadt (Germany), at Laboratori Nazionali del Sud (Catania, Italy), at INFN LABEC (Firenze, Italy) and at HIL in Warsaw (Poland).

The leitmotiv of her research activity are detectors for imaging and spectroscopy from the design to their system application together with the low-noise frontend electronics. From the beginning of her research activity she developed innovative detectors for X-ray imaging and spectroscopy based on the drift mechanism, as recognized by several awards in the field and many scientific publications. She promoted their use in innovative application fields, proposing several advances with respect to state-of-the art. Just to mention few examples: the use of silicon drift detectors and polycapillary X-ray optics in PIXE experiments and in X-ray scatter imaging and more recently for the detection of Gold NanoParticles as tumor markers. Since 2009, she started to devote her competences towards detection instruments for multi-fragmentation measurements in nuclear physics, as demonstrated by many publications and by the responsibility of different research projects in the field.

### **Publications and bibliometric data**

Starting with the first paper published in 1997, she is author of more than 100 papers on international peer-reviewed journals and more than 150 international conference proceedings. She was invited speaker

for 12 talks on her research activity on radiation detectors and front-end electronics and related applications.

She is also co-inventor of an Italian, European and US patent about a novel semiconductor detector for X-ray imaging with time and energy resolution, named Controlled-Drift Detector.

Her h-index – as provided by Scopus– is 20, with 1547 citations and 24, with 2296 citations – as provided by Google Scholar.

### **Project Coordination**

She is/was principal investigator of the following projects/Contracts:

- ✓ PI of the Young Researcher Project - Year 2000 for the development of a compact and flexible multichannel acquisition system for detectors for high-resolution X-ray spectroscopy. One year starting July 24, 2002.
- ✓ PI of the research contract with Societa' EIS s.r.l. on the development of an acquisition system for X-ray detectors. Starting date: March 2003.
- ✓ PI for the Milano Section of INFN of the DANTE Experiment (Development of Analytical Nuclear TEchniques) 2006-2008 for the development of an innovative spectrometer for PIXE measurements
- ✓ PI for the Milano Section of INFN of the EXOCHIM Experiment 2008-2014, since 2010, a Nuclear Physics Experiment
- ✓ Associated investigator for the program PRIN 2009 “Development of the prototype of a high angular resolution detector array for very precise momentum measurements of light particles and fragments, aimed at dynamics and spectroscopy studies in nuclear reactions with stable and radioactive beams at low and intermediate energies”, Protocol n. 2009RLCYL8
- ✓ PI for the Milano Section of INFN of the NEWCHIM Experiment 2015-2020, mainly devoted to the development of a Femtoscope Array for Correlation and Spectroscopy in which she has the responsibility of the microstrip detectors qualification and response mapping and of the frontend electronics design and qualification.
- ✓ PI for the Milano Section of INFN of the CHIRONE Experiment, a Nuclear Physics Experiment, 2021-2025.
- ✓ PI for the Milano Section of INFN of the CHI-NEXT Experiment, a Nuclear Physics Experiment, 2026-2028.

She collaborates/collaborated to different INFN experiments, PRIN programs and EU Projects.

### **Teaching, Supervisor and Managing Activity**

She teaches Electronics courses at Politecnico di Milano since 2001 and has supervised few tens of B.Sc. and M. Sc. Theses in Electronics Engineering and three PhD Theses. In 2016, she ideated and taught the PhD course “X-Rays, a Tool for Science and Technology: Interaction with Matter, Detection Techniques, Applications”. She serves and has served for many managing activities mainly at Politecnico di Milano related both to research, dissemination and teaching.

### **Managing Activity**

Chiara Guazzoni serves and has served for many managing activities mainly at Politecnico di Milano and at INFN.

- ✓ In academic years 2001/02 e 2002/03 she was member of the Commissione Permanente of the Consiglio di Corso di Studi in Ingegneria Informatica at Politecnico di Milano.
- ✓ From March 2003, up to 2011 she was member of the WEB Committee of the Dipartimento di Elettronica e Informazione del Politecnico di Milano for the Electronics Section and from December 2003 up to 2011 of the WEB and Promotion Committee of the Consiglio di Corso di Studi in Ingegneria Elettronica at Politecnico di Milano.
- ✓ From 1999 up to 2012 she was responsible for the organization of the OpenDay at Politecnico di Milano for the Corso di Laurea in Ingegneria Elettronica.

- ✓ Since a.a. 2001/2002 she has organized the activities of the experimental lab for the Course of Fondamenti di Elettronica for the Corso di Studi in Ingegneria Elettronica and also in the first years of Ingegneria Informatica, delle Telecomunicazioni e dell'Automazione.
- ✓ Starting from a.a. 2001/2002 she is member of the Graduation Committee in Electronics Engineering at Politecnico di Milano.
- ✓ She has been member or president of a number of selection procedures for the selection of research collaborators (Assegni di Ricerca) at Politecnico di Milano and at Istituto Nazionale di Fisica Nucleare.
- ✓ In 2003 and 2004 she was Delegate in the Committee for the abilitation exams (Esami di Stato per l'abilitazione alla professione di Ingegnere Junior e Senior).
- ✓ She has been member or president of a number of Defense Committees for awarding the PhD title at Politecnico di Milano (PhD in Information Technology and BioEngineering), at Università degli Studi di Pavia (PhD in Microelectronics), at Università degli Studi di Milano (PhD in Physics, Astrophysics and Applied Physics) and at the University of Krakow (AGH).
- ✓ She has been member or president of different selection procedures for assistant professor (Politecnico di Torino, Università degli Studi di Bergamo) and Members of Technical Staff (INFN, Sezione di Trieste and Milano, Politecnico di Milano, Università degli Studi di Milano).
- ✓ Since 2008 she is Invited Member of the Section Council of INFN, sezione di Milano to manage the agreements between Politecnico di Milano and INFN.
- ✓ In 2010 she was Member of the Organizing Committee of the ICT Seminars (<http://ictinstitute.polimi.it/seminars>), organized by the ICT Institute of Politecnico di Milano and from 2011 to 2013 she was Chair of the same Committee.
- ✓ From April 2011 up to 2013 she was Member for the Electronics Engineering Course of the Commissione Orientamento e promozione dell'immagine della Scuola di Ingegneria dell'Informazione at Politecnico di Milano.
- ✓ From Aprile 2012 up to 2017 she served as Member of the Admission Committee to the M.Sc Program in electronics Engineering (English track) at Politecnico di Milano.
- ✓ Since October 2012 Member of the PhD council in Bioengineering at Politecnico di Milano.
- ✓ Since 2013 she is serving as contact person for Politecnico di Milano for the Agreement with Istituto Nazionale di Fisica Nucleare signed on December 20, 2012 that she personally took care of writing and making approved.
- ✓ Member of the Admission Committee to the PhD in Information Technology (cycle XXXII) at Politecnico di Milano.
- ✓ From 2017 to 2023 she has been the Person in Charge for the Study Plans of the M. Sc. in Electronics Engineering at Politecnico di Milano.
- ✓ In 2019 she was Member of the Evaluation Committee at Politecnico di Torino for a public competition Procedura di selezione per Ricercatore Universitario a tempo determinato di cui al comma 3, lettera a) art. 24 della Legge 240/2010.
- ✓ In 2019 she was Member of the Evaluation Committee at Università degli Studi di Milano for 1 place, posto di categoria d - posizione economica d1 - area tecnica, tecnico-scientifica ed elaborazione dati, tecnico progettista elettronico, con rapporto di lavoro subordinato a tempo indeterminato, al dipartimento di fisica "Aldo Pontremoli" – bandito con determina nr. 1452/2019 del 31.01.2019 e pubblicato sulla g.u. nr. 14 del 19.02.2019 - codice 19674
- ✓ Since January 2020, she is the Person in Charge for the Incoming Students and Double Degree Students of the M. Sc. in Electronics Engineering at Politecnico di Milano.
- ✓ In 2020 she was Member of the Evaluation Committee at Università degli Studi di Bergamo for a public competition Procedura di selezione per Ricercatore Universitario a tempo determinato di cui al comma 3, lettera a) art. 24 della Legge 240/2010.

- ✓ In 2020 she was Member of the Evaluation Committee at INFN, Sezione di Trieste for a position of Tecnologo III livello professionale (call n. 21506).
- ✓ In 2020 she was President of the INFN Committee (deliberation n. 22219, June 19, 2020) for the procurement of a flip chip machine for INFN Sezione di Milano.
- ✓ In 2022 she was Member of the Evaluation Committee at Università degli Studi di Milano Bicocca for a position of Tecnologo di I livello, ai sensi dell'art. 24 bis della L. 240/2010, di Categoria EP, posizione economica EP1 (call 22PTA01).
- ✓ In 2022 she was President of the Evaluation Committee at Università degli Studi di Milano for a position of Tecnologo di primo livello, categoria EP - posizione economica EP3, ai sensi dell'art. 24 bis della Legge 240/2010, con rapporto di lavoro subordinato a tempo determinato, full time, della durata di 30 mesi, presso il Dipartimento di Fisica Aldo Pontremoli.
- ✓ Since June 24, 2025 she is the National Scientific Committee 5 (Technological, inter-disciplinary and accelerators research) Coordinator for the INFN Milano Division.

Milano, September 25, 2025

INFORMAZIONI PERSONALI **Marco Prioli**

Sesso M | Data di nascita

| Nazionalità Italiana

POSIZIONE RICOPERTA **Tecnologo INFN**

## ESPERIENZA PROFESSIONALE

Da novembre **Tecnologo con contratto di lavoro a tempo indeterminato**

2018

ad oggi

INFN - LASA, Milano.

Membro del gruppo per lo sviluppo di magneti superconduttori per acceleratori  
(*Capogruppo: Prof. M. Sorbi*) con i seguenti incarichi:



- 1) Principal investigator della call INFN di gruppo 5 **SIG** e project leader della collaborazione internazionale **EuroSIG**, project addendum 1
  - Coordinamento della call INFN di gruppo 5 **SIG** per lo sviluppo di tecnologie chiave per gantry agli ioni nell'ambito di innovativi trattamenti antitumorali adroterapici, gestione dei fondi di ricerca e rendicontazione periodica delle attività. Budget: 1M€, 26 ricercatori/tecnologi (11 FTE 2024), 10 tecnici
  - Coordinamento del progetto per la progettazione, realizzazione e test a freddo del primo magnete superconduttore curvo  $\cos\theta$  (SDM-c) all'interno della collaborazione internazionale **EuroSIG** tra INFN, CERN, CNAO e MedAustron. Riunioni settimanali per la gestione delle linee di ricerca elettromagnetica (realizzazione bobine superconduttrici) e meccanica (realizzazione e assemblaggio struttura)
- 2) Deputy project leader, quality e test team manager per il progetto per la realizzazione dei correttori di alto ordine di **High-Luminosity LHC**
  - Progettazione ed implementazione industriale del processo per la verifica della qualità delle bobine superconduttrici attraverso test elettrici tipici (misura di impedenza, isolamento verso terra, scarica impulsiva) e test appositamente realizzati (accoppiamento elettromagnetico in AC per la verifica del numero spire)
  - Gestione delle non-conformità attraverso la rapida implementazione di tutte le misure necessarie a valutare il reale impatto del difetto sulle performance finali del magnete
  - Coordinamento delle campagne di test a caldo (temp. ambiente) e a freddo (4.3 K), analisi dei dati misurati e realizzazione dei test-report da inserire nel sistema qualità del CERN
  - Coordinamento delle attività di progettazione, realizzazione e messa a punto di un sistema di alimentazione completamente automatizzato a quattro quadranti  $\pm 15V$ ,

- ±600A dal punto di vista hardware e software
- Ricostruzione delle origini del guasto accaduto durante il test a freddo del prototipo di quadrupolo (MQSXFP1) mediante simulazioni elettromagnetiche dedicate
  - Implementazione di simulazioni elettromagnetiche per la verifica del sistema di protezione da quench e della sua ridondanza in caso di guasto
  - Presentazione e discussione dei risultati raggiunti in riunioni di progetto (CERN HL-LHC WP3) e convegni internazionali
- 3) Responsabile locale per il progetto **ASTRACT** (Analysis of STRain Affected CharacTeristics of brittle SuperConducting cables), INFN gruppo V
- Coordinamento delle attività di riqualificazione di un alimentatore a batteria super-stabilizzato 4V, 2500A per misure di corrente critica, dal punto di vista hardware e software
  - Verifica metrologica del sistema riqualificato mediante la misura di fili superconduttivi di riferimento con caratteristiche di trasporto note
  - Progettazione di un innovativo porta-campioni per la misura di corrente critica sotto deformazione meccanica imposta a freddo
  - Richiesta annuale dei fondi e loro gestione
- 4) Membro del gruppo di lavoro su **FalconD** (Future Accelerator post-LHC Cos-theta Optimised Nb3Sn Dipole) per lo sviluppo di un modello di magneti dipolare ad alto campo dal design robusto verso **FCC-hh**
- Responsabile dell'approvvigionamento delle attrezzature necessarie alla realizzazione ed assemblaggio delle bobine superconduttrici in Nb3Sn (forno e sistema bladder&key). Supervisione tecnica della commessa nelle fasi di realizzazione, installazione e messa in opera
  - Coordinatore delle attività per l'implementazione della catena di alimentazione a 30 kA: controllo alimentatori, realizzazione busbars e progettazione e costruzione di un interruttore veloce (< 1 ms) ad IGBT
  - Co-relatore di una tesi di dottorato sulla protezione da quench: design del sistema per il modello corto FalconD (~1.5m) e sua estrapolazione al magnete lungo (~14m) mediante simulazioni elettrotermiche
- 5) Membro del progetto di outreach dell'INFN **What Next**, giovani che raccontano il futuro
- Divulgazione delle attività di ricerca in ambito acceleratori verso studenti di facoltà che non trattano questo argomento attraverso la visita dei laboratori e la realizzazione di un cortometraggio
  - Organizzazione della visita e del laboratorio didattico sui magneti superconduttori presso il LASA, Milano

## Settore Ricerca

Da ottobre 2015  
a settembre 2018

## Senior Fellow

CERN, Ginevra. *Supervisor: Dott. A. Verweij*

Membro del progetto **STEAM** (Simulation of Transient Effects in Accelerator Magnets) con i seguenti incarichi:



- 1) Ideazione dei modelli numerici di simulazione e programmazione software per la loro costruzione automatizzata
  - Sviluppo di modelli elettrotermici agli elementi finiti di magneti superconduttori in COMSOL
  - Sviluppo di modelli a parametri concentrati dei circuiti di alimentazione dei magneti
  - Programmazione di una innovativa piattaforma Java per la simulazione cooperativa tra più modelli (co-simulazione mediante waveform relaxation)
- 2) Applicazione dei modelli sviluppati all'interno del progetto **FCC** – Future Circular Collider – un collisore di adroni di 100 km, 100 TeV
  - Design del sistema di protezione da quench per le tre diverse opzioni di magneti dipolari a 16 T (configurazioni  $\cos\theta$ , block-coil, common-coil)
  - Studio dell'innovativo sistema di protezione Coupling Loss Induced Quench (CLIQ)
  - Co-simulazione dello stress meccanico sulle coil durante il quench
  - Design dei circuiti di alimentazione dei 4220 magneti dipolari e simulazione della loro protezione
- 3) Analisi tempestiva dei guasti nei circuiti di **LHC** tramite modelli numerici sviluppati ad-hoc, al fine di limitarne il tempo di fermo
- 4) Supervisione di technical students

## Settore Ricerca

Da marzo 2014  
a settembre 2015

## Assegnista di ricerca

Politecnico di Milano. *Supervisor: Prof. R. Ottoboni*

In collaborazione con ABB Corporate Research Center (Ladenburg) e ABB SACE (Bergamo)

Sviluppo di innovativi metodi di misura per correnti continue e alternate con applicazione al campo degli interruttori elettrici di potenza



- Ottimizzazione di array di sensori ad effetto hall per la minimizzazione del crosstalk nella misura di busbar vicine
- Ottimizzazione di trasformatori di corrente mediante modelli agli elementi finiti (ANSYS)

Maxwell) ed analitici (serie di Volterra)

- Validazione dei modelli numerici tramite la realizzazione di setup sperimentali
- Presentazione e discussione delle attività con ABB a cadenza mensile

Settore Ricerca

AA. 2014 / 2015

**Responsabile di laboratorio**

AA. 2013 / 2014

**Corso di misure elettriche e corso di elaborazione numerica dei segnali di misura**

AA. 2012 / 2013

Politecnico di Milano. *Supervisors: Prof. R. Ottoboni, Prof. S. Salicone*

Didattica sulla realizzazione di setup di laboratorio e software di analisi su:

- Tecniche di base per le misure elettriche
- Conversione analogico digitale, dispositivi di misura virtuali LabVIEW e Digital Signal Processing



Settore Didattica

AA. 2013 / 2014

**Docente per il tutorato sul programma Matlab**

AA. 2012 / 2013

V Facoltà di Ingegneria, Politecnico di Milano. *Supervisor: Prof. M. Frontini*

Didattica sulle tecniche di programmazione in MATLAB per l'ingegneria



Settore Didattica

ISTRUZIONE E FORMAZIONE

---

Da gennaio 2011

**Dottore di ricerca in Ingegneria Elettrica**

QEQ 8

a marzo 2014

Politecnico di Milano

- Attività di ricerca per la caratterizzazione metrologica di sistemi di misura complessi: definizione di un nuovo approccio per la valutazione dell'incertezza di misura basato sulle teorie matematiche dell'Evidenza e della Possibilità
- Applicazione alla misura della potenza attiva, caratterizzazione metrologica di un divisore di tensione resistivo, misura della temperatura in presenza di informazione a priori

Da settembre

**Laurea Specialistica in Ingegneria Elettrica (110/110 cum Laude)**

QEQ 7

2008

Politecnico di Milano

a ottobre 2010

- Misure elettriche su sistemi elettrici di potenza: analisi della Power Quality mediante Logica Fuzzy e Sistemi di Inferenza Fuzzy e relativa caratterizzazione metrologica
- Elaborazione numerica dei segnali di misura, filtri numerici, azionamenti elettrici, compatibilità elettromagnetica, macchine elettriche speciali

**Alta Scuola Politecnica ([www.asp-poli.it](http://www.asp-poli.it))**

Da settembre

Politecnico di Torino, Politecnico di Milano

- 2008 a settembre ▪ Scuola internazionale in lingua inglese per giovani talenti
- 2009 ▪ Conferenze multidisciplinari su temi quali innovazione, sostenibilità ambientale, decision making
  
- Da settembre 2005 a luglio 2008 **Laurea in Ingegneria Elettrica (110/110 *cum Laude*)** QE6 6  
 Politecnico di Milano
- Analisi matematica, fisica, elettrotecnica, misure elettriche, macchine elettriche, lingua straniera (inglese)

**COMPETENZE PERSONALI**

---

Lingua madre Italiano

Altre lingue

Inglese  
Francese

COMPRESIONE		PARLATO		PRODUZIONE SCRITTA
Ascolto	Lettura	Interazione	Produzione orale	
C1	C1	C1	C1	C1
A2	A2	A2	A2	A2
Inglese: certificazione TOEFL con votazione 96/120. Francese: certificazione Supercomm Suisse con votazione 45.5/50				
Livelli: A1/2 Livello base - B1/2 Livello intermedio - C1/2 Livello avanzato Quadro Comune Europeo di Riferimento delle Lingue				

Competenze comunicative

- 18 interventi come relatore a conferenze internazionali
- Redazione di articoli scientifici per pubblicazione su riviste internazionali
- Competenze didattiche

Competenze organizzative e gestionali

- Coordinamento e mediazione nello sviluppo di attività di ricerca scientifica
- Esperienza nella metodologia SCRUM: un framework agile per la gestione del lavoro di squadra
- Capacità di gestione e organizzazione del gruppo di lavoro
- Esperienza nella supervisione di studenti di laurea e dottorato

Competenze professionali

- **Misura:** esperienza trasversale nel campo delle misure elettriche. Design e implementazione di setup di misura, tra cui sistemi virtuali mediante Digital Signal Processing, e analisi critica dei dati. Profonda conoscenza delle teorie matematiche dedicate alla propagazione dell'incertezza di misura

- **Test di magneti** superconduttori: approfondita conoscenza di tutte le fasi del test, dalla ricezione del magnete alla redazione del rapporto, e dei dispositivi ad esso connessi.
- **Alimentatori** di potenza: coordinamento delle attività di sviluppo hardware e software di diversi sistemi di alimentazione per magneti nell'intervallo 600 A – 30 kA
- **Simulazione**: capacità di sviluppo di modelli analitici, a parametri concentrati, e agli elementi finiti nei domini elettrico, magnetotermico e meccanico. Conoscenza approfondita delle simulazioni di quench per i magneti superconduttori
- **Sviluppo software**: esperienza nella programmazione in MATLAB ed in Java di un progetto complesso per la simulazione cooperativa tra ambienti di simulazione differenti (CERN - STEAM)
- **Qualità** di prodotto: design di metodi per la misura della qualità, delle relative procedure e verifica periodica dei risultati
- **Gestione** di fondi di ricerca, ordini, e partecipazione a call di finanziamento nazionali e internazionali

#### Competenze informatiche

- Utente avanzato delle suite da ufficio: MS Office, LaTeX, Adobe Acrobat
- Conoscenza approfondita dei programmi di simulazione: COMSOL, Spice, Simulink, ANSYS Maxwell, ROXIE
- Padronanza degli ambienti di programmazione: MATLAB, LabVIEW, Java, C

#### Patente di guida

- Patenti A e B
- Patente nautica

### ULTERIORI INFORMAZIONI

---

#### Pubblicazioni scientifiche

- 50 pubblicazioni su riviste internazionali, 2 libri / contributi a libro, 40 pubblicazioni su atti di convegni internazionali, 2 pubblicazioni nazionali
- H-index settembre 2025: 26 (SCHOLAR), 21 (SCOPUS)
- Revisore per le riviste IEEE Transactions on Instrumentation and Measurement e Transactions on Applied Superconductivity

#### Riconoscimenti e premi

- IEEE J. Barry Oakes Advancement Award, **IEEE** instrumentation and measurement society, 2014 a riconoscimento del contributo di giovani talenti nel campo delle misure elettriche
- Premio per il miglior studente di Dottorato, DEIB, **Politecnico di Milano**, 2014
- Premio per la Miglior Tesi di Laurea, **Comitato Elettrotecnico Italiano**, 2010

- Borsa di studio per i 12 migliori studenti del Politecnico di Milano, **Fondazione Legnanese**, 2009
- Miglior elaborato sul tema del viaggio, **MIUR**, esame di stato 2005

**Affiliazioni**

- **CERN** Cooperation Associate (COAS) dal 2019
- Membro dal 2011 al 2015 di **IEEE** e **IMS** (IEEE Instrumentation and Measurement Society)
- Membro dal 2011 al 2015 di **GMEE** (Gruppo Misure Elettriche ed Elettroniche)