



Maria Cristina Paganini, PhD (ORCID number : orcid.org/0000-0002-6248-7243)

Personal website: UNITO: http://www.chimica.unito.it/do/docenti.pl/Show?_id=mpaganini

<http://www.epr.unito.it/>

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Job positions and research activities:

Maria Cristina Paganini was born in Cuneo in 1969. In 1993 she received her chemistry degree at the University of Torino. After a 1 year fellowship in collaboration with Politecnico di Torino and Research Centre of FIAT she got her PhD at the in University of Torino in 1997. After a post doctoral period in the University of Twente (The Netherland) in the Catalysis Lab and in the Technical University of Munich (Germany) she got her permanent position as Researcher at the University of Torino in 1999. In 2014 she got the position of Associate Professor at the Department of Chemistry in the University of Torino. In 2017 she got the habilitation for a full professor position. In 2022 she got the position of full professor at the Department of Chemistry in the University of Torino.

Since 1999 she is involved in teaching for the Department of Chemistry.

Research activity:

At the beginning of her career she started to work in the field of solid state and surface chemistry with particular attention to the insulator metal oxides (earth metal oxides). In this area, she has developed the application of Electron Paramagnetic Resonance (EPR), a magnetic spectroscopy suited to investigate paramagnetic and radical species. In particular, in the first years of her activity, she employed EPR to characterize paramagnetic centres present in metal oxides and she focused her attention to the study of point defects localized at the surface of model oxides in the aim of describing their structure, properties and reactivity. In this area, a series of papers based on the comparison between experimental and computational results led to overcome the classic models for these centres introducing innovative ideas for the class of surface colour centres, mostly based on the morphological feature of the solid surface. In more recent years she moved toward the investigation of photoactive solids and, in particular, of transition metal oxides used as semiconductor materials. Later she developed several photoactive systems always based on oxides with the aim of preparing new photoactive materials capable to be activated by visible light. To reach this goal she devoted many efforts in the preparation of mixed oxides, both solid solutions or doped systems. Among these, zirconium dioxide and zinc oxides doped with rare earth ions have been deeply studied.

During her scientific career Maria Cristina Paganini has cooperated with several groups in Italy and abroad (France, Poland, Austria, Spain, Greece, Canada, South Africa, Russia, United Kingdom).

She is co-Author of 115 papers on Journals, Books and Conference Proceedings that has received some 5480 citations in the literature (Source Scopus). She has given invited several talks and lectures at National and International Conferences and invited Seminars in various Universities. She has been appointed as a member of Scientific and Organizing Committees in various International Conferences and Advanced PhD Schools.

Periods abroad:



- 1998 Post Doc position at the University of Twente, The Netherlands (8 months)
- 1999 Post Doc position at the University of Munich, Germany (4 months)
- 2013 Visiting Scientist at the University of Saint Petersburg, Russia (1 month)
- 2014 Visiting Scientist at the McGill University of Montreal, Canada (1 month)
- 2016 Visiting Scientist at the University of Stellenbosh, South Africa (1month)

Teaching Activity:

- Maria Cristina Paganini has covered, along the years, different courses in the University of Torino (i.e. General and Inorganic Chemistry, Chemistry of Materials, Solid State Chemistry with different laboratories)
- She has taken part as a teacher at Advanced Schools for PhD students (summer/winter Schools).
- She has been supervisor of numerous undergraduate, master and PhD students.

Details of teaching activities in the last 5 years

- Solid State Chemistry for the course of Materials Science Master degree and Chemistry Degree
- Chemistry of Materials for the course of Science and Technology of Materials Bachelor degree
- Laboratory of Inorganic General Chemistry for the course of Science and Technology of Materials Bachelor degree

Funded research Projects:

She has participated to National projects:

- PI in the Regional Piedmont project “Bando Regionale sulla Ricerca Scientifica Applicata “ 2005 (80000€),
- PI of the local Turin Unit for the project PRIN - prot. 2007FA34TE_004 2007, “Study of the physico-chemical properties and of surface reactivity which modulate the toxicity and the translocation of silica nanoparticles and carbon nanotubes having different amount of metals impurities.” (116000€ for the UNITO)
- Member of the Turin Unit in the national project PRIN prot. 2009PASLSN 2010, “New generation photosensitive semiconducting oxides modified with non-metals to enhance solar light harvesting. Design, synthesis, characterisation and testing” (120000€ for UNITO)
- Member of the Turin Unit in the regional project Fondazione CARIPOLO 2009, “Sviluppo di fotocatalizzatori di seconda generazione per l'energia e l'ambiente” (120000€ for the Torino Unit)
- Member of the Turin unit in the National project FIRB - 2012 RBAP115AYN_006 “OXIDES AT THE NANOSCALE: MULTIFUNCTIONALITY AND APPLICATIONS” (443000€ for UNITO)



- Member of the Turin Unit in the regional project Fondazione CARIPOLO 2013 “Nuovi materiali fotocatalitici per la conversione di energia solare basati su eterogiunzioni” (102000€ for UNITO)
- Member of the project “Scarti organici e Anidride carbonica Trasformati in carbURanti, fertilizzanti e prodotti chimici; applicazione concreta dell’ecoNomia circolare (SATURNO)” POR FESR 2014/2020, in the frame of Bioeconomy platfom, project code: n. 333-180
- Local PI in the national project PRIN “Multielectron transfer for the conversion of small molecules: an enabling technology for the chemical use of renewable energy (MULTI-e)” 2019-2022 (124000€ for UNITO)
- PI in the local project SuSNanoCatch “Sustainable strategies to reduce the presence in the environment of nanoparticles deriving from depollution processes” 2021-2023 (65000€)

and European projects:

- Member of the COST Actions D41- 2006; D19- 2009, and CM1104 -2012,
- Co-PI of the project MARIE CURIE ACTIONS, Call: FP7-PEOPLE-2012-IRSES, PHOTOMAT - TUNABLE MATERIALS: PREPARATION, CHARACTERIZATION AND INVESTIGATION OF PHOTOCATALYTIC ACTIVITY OF NEW HIBRID MATERIALS, (45700€ for the Torino Unit)
- Member of Turin Unit in the project MARIE CURIE ACTIONS MSCA-RISE SEP-210156963-2014 – MAT4TREA “Enhancing water quality by developing novel materials for organic pollutant removal in tertiary water treatments” (180000€ for the Torino Unit)
- Member of the Turin unit in the project H2020-MSCA-ITN-2017 MARIE CURIE ACTIONS 765860_Aquality, “Interdisciplinary cross-sectoral approach to effectively address the removal of contaminants of emerging concern from water” (516122€ for the Turin Unit)
- Member of the Turin Unit for the project Eurostar 2019 hub-360 133844 “Fabrication of a novel Water filtration membrane based on Nano Perovskite for abatement of contaminants of emerging concerns” NanoPerWater, 2020, (150000€ for the Torino Unit)
- Member of the Turin Unit for the PROJECT: NanoTheC-Aba 402 “CECs and AMR bacteria pre-concentration by ultra-nano filtration and Abatement by ThermoCatalytic Nano-powders implementing circular economy solution”, 2020, (750000 euro).

Membership of scientific associations:

- Member of Italian Chemical Society (SCI)
- Member of the Steering committee of the Italian Group of Spin Resonance Spectroscopy (GIRSE)

Management and administrative positions:

Maria Cristina Paganini has been constantly active in the organization of the academic life. She was part of numerous commissions of the Department, Faculty and University. At the moment she is the



Via P. Giuria, 7 10125 Torino Italy

coordinator of the Master Degree in Materials Science and the member of the Erasmus Commission of the Department of Chemistry.

Publications:

120 papers (5856 citations, h-index 35 by ISI web of knowledge; 5724 citations, h-index 36 by SCOPUS; 6940 citations, h-index 39 by Google scholar sources)

Torino, 13/01/2023

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