

**CURRICULUM VITÆ  
OF  
LORENZO POGGINI**

**Personal Information**



📍 Via Madonna del piano 10, Sesto Fiorentino, Firenze, ITALY

☎ +39 0554573123 , +393397854605

✉ lorenzo.poggini@iccom.cnr.it

Websites: <http://www.iccom.cnr.it/it/single-profile-iccom/?uid=160>  
<https://www.lamm.unifi.it/vp-248-lorenzo-poggini.html>

*Sex Male | Date of birth 04/07/1983 | Nationality Italian*

**Current Position:**

|                        |
|------------------------|
| <b>EPR</b>             |
| X Level III Researcher |

**WORK EXPERIENCE**

---

from 01/08/2020 to today

**Permanent Level III Researcher**

Istituto di Chimica dei Composti Organo Metallici (CNR- ICCOM), Sesto Fiorentino (Italy)  
My main research activity consists of the development and characterization of nanostructures based on magnetic and chiral molecules for spintronics and quantum applications. I also contribute to the research activity on catalysis and hydrogen production.  
*Business or sector: Research*

from 01/01/2020 to 01/08/2020

**Senior Postdoc**

Chemistry Department "Ugo Schiff", University of Florence, Sesto Fiorentino, Florence (Italy)  
Senior postdoc in the group of prof. Roberta Sessoli on the project "Preparation and characterization of nanostructures based on chiral molecules". My research activity regarded the investigation and characterization of chiral magnetic molecules for spintronics applications.  
*Business or sector: Research*

from 01/12/2017 to 31/01/2019

**Senior Postdoc**

Chemistry Department "Ugo Schiff", University of Florence, Sesto Fiorentino, Florence (Italy)  
Senior postdoc in the group of prof. Roberta Sessoli on the project "Realisation and characterisation of hybrid nanostructures embedding molecular nanomagnets". My research activity regarded the investigation and characterization of nanoarchitectures composed of molecular magnets deposited on optical nanoantennas, to enhance the nanoantenna effects at the optical level.  
*Business or sector: Research*

from 01/01/2016 to 31/12/2017

**Postdoc**

Institut de Chimie de la Matière Condensée de Bordeaux, UPR9048 CNRS-Université de Bordeaux (France)

Postdoc in the group of Dr. Guillaume Chastanet on the project “Elaboration and study of addressable spin-crossover materials”. My research activity regarded the realization of novel devices based on Spin CrossOver compounds. I also give important help to the development and the use of a new platform in Bordeaux Campus training the staff and giving them the basis to be operative in the short term (ELORPrinTec, granted thanks to French funds, call ÉquipeX)

*Business or sector: Research*

from 01/01/2016 to 31/12/2017

#### **Postdoc**

Chemistry Department “Ugo Schiff”, University of Florence, Sesto Fiorentino, Florence (Italy)

Junior postdoc in the group of prof. Roberta Sessoli on the project “New systems and nano-functional molecular architectures for molecular spintronics”. My research activity regarded the investigation and characterization of nanoarchitectures composed of molecular magnets deposited on metal surfaces and oxide materials.

*Business or sector: Research*

## EDUCATION AND TRAINING

---

from 01/01/2012 to 31/12/2015

#### **PhD. Degree in “Chemical Science”, Supervisors: Prof. Roberta Sessoli, Prof. Matteo Mannini**

Università degli Studi di Firenze (Italy)

During the PhD period, I have acquired a deep knowledge on X-ray photoelectron spectroscopy, ultraviolet photoelectron spectroscopy, in low-temperature sample environments applied in the characterization of magnetic molecules-surfaces hybrid systems. I extended my expertise to Electric Transport Measurements and I enriched my know-how in the use of synchrotron radiation-based techniques. In Roberta Sessoli's group, the topic was the physical study of deposited magnetic molecular layers on surfaces. During PhD in Florence, I put forward more than 12 successful proposals for beamtime at Elettra, ESRF, SOLEIL, SLS and DIAMOND synchrotrons facilities, proposals that were aimed at studying X-ray Magnetic Dichroism on low coverage deposits of magnetic molecules. I acquired the experimental background related to synchrotron X-ray techniques during University studies. I started as well to acquire the basis in Electric Transport Measurements, related to the design, realization and study of spin-valve embedded with a magnetic molecular layer.

04/2011

#### **Master Degree in Chemistry, Supervisors: Prof. Lorenzo Sorace, Prof. Federico Totti, Prof. Matteo Mannini**

Università degli Studi di Firenze (Italy)

During my master thesis, I worked on the realization and characterization of a nanostructure of Organic radicals on surface.

10/2007

#### **Bachelor Degree in Chemistry, Supervisors: Prof. Stefano Cicchi**

Università degli Studi di Firenze (Italy)

During my bachelor thesis, I worked on the synthesis of Pyrene-Excimers-Based Antenna Systems.

## PERSONAL SKILLS

---

Mother tongue Italian

Other languages English, Level: C1  
French, Level: B1

- Field of expertise: Atomic and Molecular manipulation;
- Hardware expertise: UHV vacuum technology, cryogenic Temperature, Molecular/metal deposition, Soft-lithography Process;
- Laboratory Techniques Expertise: Photo-Electrons Spectroscopies and Inverse Photoelectrons spectroscopies, Scanning Probe Microscopies, Low Energy Ions Scattering, Low Energy Electron Diffraction;
- Large Scales Facilities Techniques: X-Ray Absorption, Linear/circular Magnetic Dichroism, Synchrotron Mossbauer Source.
- Knowledge of the data analysis software Origin realising apposite macro for data treatment.
- Basic knowledge of CAD design programs (Solid Works software)
- Knowledge of the Latex environment for scientific written production and of the Microsoft Office suite and the Inkscape vectorial drawing program.
- Microsoft office.
- SPM Image elaboration.
- Other expertise: students mentoring, large-scale facilities experiment beamtime managing, conferences organization, fulfilment of research-related administrative tasks

## ADDITIONAL INFORMATION RELEVANT TO QUANTUM SCIENCE AND TECHNOLOGY

---

International collaborations - Molecular Spintronics (MoISpin), Cost application, European Cooperation in Science and Technology, CA 15128;  
- More than 40 accepted proposals for international large scale facilities like main proposer (8) and Co-proposer (32) at Elettra (Italy) , ESRF e SOLEIL (France), SLS (Switzerland) e DIAMOND (UK) for a total of more than 42 weeks of activities

Projects - "Spin-optical nanoantenna-assisted magnetic storage at few nanometers on femtosecond timescale", FEMTOTERABYTE, 2017-2020, H2020-EU.1.2.1.- FET Open, funded by the EU, H2020-FETOPEN-1-2016-2017-737093. L.Poggini Participant.  
- "Quantum detection of chiral-induced spin selectivity at the molecular level", Italian Ministry Grant, PRIN 2017, 2020, L. Poggini Participants  
- "Molecular Nanomagnets at Surfaces: Novel Phenomena for Spin-based Technologies" MoINanoMaS, ERC Advanced Grant Research (2011-2016). ERC-2010-AdG\_20100224. L. Poggini Participant.

Industrial Collaboration Collaboration with the company Sikémia, in the framework of the SMARTENING Pathfinder open project.

## Research products Overview

**Overview**

To date I published 43 papers in peer reviewed, international journals, 96% in high-impact (Q1) journals: 11 publication as corresponding author, 11 publications as 1st author, 1 contribution to a book chapter. H index: 18, total citations:846 (Scopus). Additional 6 papers in preparation. Average Impact Factor (from 2017)= 11.25

**Relevant publications for the project**

- 1- "Quantum dynamics of a single molecule magnet on superconducting Pb(111)"  
Serrano, G., Poggini, L., Briganti, M. et al.  
Nature Materials, **19**, 546–551 (2020). <https://doi.org/10.1038/s41563-020-0608-9>
  
- 2- "Chemisorption of nitronyl–nitroxide radicals on gold surface: an assessment of morphology, exchange interaction and decoherence time"  
L. Poggini, A. Lunghi, A. Collauto et al.  
Nanoscale, **13**, 7613-7621, (2021) DOI <https://doi.org/10.1039/D1NR00640A>.
  
- 3- "Engineering Chemisorption of Fe<sub>4</sub> Single-Molecule Magnets on Gold"  
L. Poggini , E. Tancini, C. Danieli et al.  
Adv. Mater. Interfaces, **8**, 2101182, (2021) <https://doi.org/10.1002/admi.202101182>.
  
- 4- " Stabilization of an Enantiopure Sub-monolayer of Helicene Radical Cations on a Au(111) Surface through Noncovalent Interactions"  
N. Giaconi, A.L. Sorrentino, L. Poggini et al.,  
Angew. Chem. Int. Ed. , **60**, 15276, (2021) <https://doi.org/10.1002/anie.202103710>.
  
- 5- " Enhancement of the Magnetic Coupling in Exfoliated CrCl<sub>3</sub> Crystals Observed by Low-Temperature Magnetic Force Microscopy and X-ray Magnetic Circular Dichroism"  
Serri, M., Cucinotta, G., Poggini et al.  
Adv. Mater. **32**, 2000566, (2020). <https://doi.org/10.1002/adma.202000566>.
  
- 6- " Temperature-induced transport changes in molecular junctions based on a spin crossover complex",  
L. Poggini, Mathieu Gonidec, R. K. C. Balasubramanyam et al.  
J. Mater. Chem. C, **7**, 5343-5347, 2019 <https://doi.org/10.1039/C8TC06587J>
  
- 7- "Vertical Tunnel Junction Embedding a Spin Crossover Molecular Film"  
L. Poggini et al. , L., Gonidec, M., González-Estefan, et al.  
Adv. Electron. Mater., **4**, 1800204, (2018) <https://doi.org/10.1002/aelm.201800204>
  
- 8- "Surface effects on a photochromic spin-crossover iron(ii) molecular switch adsorbed on highly oriented pyrolytic graphite"  
L.Poggini, G. Londi, M. Milek, et al.  
Nanoscale,**11**, 20006-20014, (2019), <https://doi.org/10.1039/C9NR05947D>
  
- 9- "Tuning of a Vertical Spin Valve with a Monolayer of Single Molecule Magnets"  
G. Cucinotta, L. Poggini, L., Pedrini, et al,  
Adv. Funct. Mater., **27**, 1703600, (2017) <https://doi.org/10.1002/adfm.201703600>
  
- 10- "Thermal and optical control of electronic states in a single layer of switchable paramagnetic molecules"  
G. Poneti, L. Poggini, M. Mannini et al.  
Chem. Sci., **6**, 2268-2274, (2015) <https://doi.org/10.1039/C5SC00163C>

Date and Signature

06/05/2022