

PERSONAL INFORMATION

Chiara Caldini

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Gender Female | **Date of birth** 26/12/1995 | **Nationality** Italian

PROFESSIONAL
EXPERIENCE

November 2020 – now

PhD student of the International Doctorate in Atomic and Molecular Photonics program at the European Laboratory of Non-Linear Spectroscopy (LENS)

LENS, Via Nello Carrara 1, 50019, Sesto Fiorentino (FI)

PhD project: Development of an optical system for Expansion-STORM microscopy for the study of molecular interactions and genome spatial organization in bacteria

July 2019 – April 2020

Master thesis in Physical and Astrophysical Sciences at the European Laboratory of Non-Linear Spectroscopy (LENS)

LENS, Via Nello Carrara 1, 50019, Sesto Fiorentino (FI)

Title: "Development and calibration of an optical system for 3D super-resolution microscopy"

Tasks:

- Development and characterization of an optical system to perform 3D stochastic optical reconstruction microscopy (STORM) on biological samples
- Learning of cell biology techniques (freezing, thawing and maintenance of eukaryotic cellular cultures)
- Learning of histological techniques (fixation and staining of samples)
- Development of scripts to interfacing devices to automate measurements
- Development of a protocol to analyse images of biological sample containing fiducial markers acquired with a 3D STORM set-up
- Study of the actin cortex of eukaryotic cells and measurements of its thickness

October 2017 – December
2017**Bachelor thesis in Physics and Astrophysics at the Physics and Astronomy Department of the University of Florence**

Physics and Astronomy Department, Via G. Sansone 1, 50019, Sesto Fiorentino (FI)

Title: "Development of a widefield imaging platform for the study of neural activation signals in cortex during motor activity"

Tasks:

- Optical and mechanical design, development and characterization of a widefield imaging platform to study the correlation between neural signals and motor activity in transgenic mice

EDUCATION AND TRAINING

April 2022 – September 2022

PhD internship in the group of Nanomedicine and Biophotonics (NanoBio) of the Institut of Molecular Sciences of Orsay (ISMO) under the supervision of the researcher Sandrine Lévêque-Fort

Rue André Rivière, Bâtiment 520, University of Paris Saclay, 91405 Orsay Cedex, France

April 2020

Master’s Degree in Physical and Astrophysical Sciences
Curriculum: Physics of Matter

University of Florence

- Final mark: 110/110 with honors
- Thesis: “Development and calibration of an optical system for 3D super-resolution microscopy”
- Supervisor: Prof. Francesco Saverio Pavone

December 2017

Bachelor’s Degree in Physics and Astrophysics

University of Florence

- Final mark: 109/110
- Thesis: “Development of a widefield imaging platform for the study of neural activation signals in cortex during motor activity”
- Supervisor: Prof. Francesco Saverio Pavone

PERSONAL SKILLS

Mother tongue

Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken Interaction	Spoken Production	
English	C1	C1	C1	C1	C1
French	B2	B2	B2	B2	B2

Organisational skills and competences

I have good organisational skills and through a methodical approach I can perform multiple tasks at the same time and get good results in quick times.

Technical skills and competences

- Development and characterization of optical microscopy systems
- Digital image management
- Experience with interfacing multiple devices to automate measurements
- Experience with vector graphics software
- Experience with data analysis software
- Basic knowledge of cell biology techniques
- Basic knowledge of histological techniques

Computer skills and competences

SELF-ASSESSMENT				
Information Processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Operating systems: Windows (XP, Vista, 7, 10, 11)
Word processors: Microsoft Office Word, Latex
Presentation software: Microsoft Office PowerPoint
Data analysis software: Microsoft Office Excel, OriginLab
Programming languages: Python, Matlab, C, C++, Micromanager, LabVIEW
Vector graphics software: Illustrator
Image management software: Photoshop, ImageJ
Video editing software: Sony Vegas Pro

Driver licence B

FURTHER INFORMATION

- Summer School
 - Course 210 on MULTIMODAL AND NANOSCALE OPTICAL MICROSCOPY of the International School of Physics "Enrico Fermi" in Varenna, Lake Como, Italy, from 10th to 15th July 2022
- Conferences
 - Single Molecule Localization Microscopy Symposium (SLMSMS) in Paris, France, from 29th to 31st August 2022
- Posters
 - Poster at the Single Molecule Localization Microscopy Symposium 2022, "Studying molecular compartmentalization in bacteria through single-molecule colocalization"
- Talks
 - Klein Colloquium at the European Laboratory for Non-Linear Spectroscopy (LENS), "Studying sub-cellular molecular organization in bacteria through single molecule colocalization" (February 7th, 2023)
- Publications
 - *Particle Localization Using Local Gradients and Its Application to Nanometer Stabilization of a Microscope*, Anatolii V. Kashchuk, Oleksandr Perederiy, Chiara Caldini, Lucia Gardini, Francesco Saverio Pavone, Anatoliiy M. Negriyko, and Marco Capitanio, ACS Nano 2023 17 (2), 1344-1354, DOI: 10.1021/acsnano.2c09787

Date

Florence, February 23rd, 2023

Signature

