



# MARTA MAGALINI

## PH.D. IN TECHNOLOGIES FOR CULTURAL HERITAGE

Curriculum vitae  
April 2022

"The most beautiful thing we can experience is mysterious. It is the source of all true art and science."  
[Albert Einstein]

Mystery, art and science: these are the three guiding principles of my passion for Physics. During my studies I was able to deepen the knowledge of natural phenomena and the laws that govern our universe. Later on, in my path I have developed the desire to understand how such fundamental knowledge can be put at the service of the civil Society of present times. In particular, I am passionate about the idea of studying - thanks to today's technologies - a cultural heritage handed down from the past. Such an interesting time-perspective, can help us to better understand the dynamics of the contemporary Society we live in.

## STUDIES

### Contacts

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### Digital skills

- OS: Windows, macOS, Linux, Android
- Programming languages: C++
- Software applications: ROOT, ORIGIN, GUPXWIN, LaTeX, Microsoft Office

### Soft skills

- Teamwork & communication
- Organization & managerial skills
- Team leading
- Problem Solving
- Flexibility

### Languages skills

- Italian: mother tongue
- English: level B2 Certificate: Cambridge English First -2016
- Spanish: A1

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### Academic studies

#### PH.D. PROGRAMME IN TECHNOLOGY DRIVEN SCIENCES: TECHNOLOGIES FOR CULTURAL HERITAGE (37<sup>TH</sup> CYCLE)

UNIVERSITÀ DEGLI STUDI DI TORINO, November 2021 — ongoing

- **Topics:** Ion Beam Analysis applied to the study and characterization of archaeological artifacts (lapis lazuli objects, ancient coins, pottery). Development of compact and transportable instrumentation for in-situ non-destructive analysis (XRF, FORS, Photogrammetry) on cultural heritage material.  
*/ Supervisor: Prof. Alessandro Lo Giudice*

#### MASTER'S DEGREE IN PHYSICS (PHYSICS OF THE FUNDAMENTAL INTERACTIONS CURRICULUM)

FINAL DEGREE MARK: 110/110 CUM LAUDE

UNIVERSITÀ DEGLI STUDI DI PADOVA, October 2021

- **Thesis title:** "Micro-Particle-Induced X-ray Emission and Micro-IonoLuminescence techniques applied to the provenance study of lapis lazuli".
- **Thesis subject:** Physics applied to cultural heritage. Experimental activities conducted at the Legnaro National Laboratories (INFN-LNL), Legnaro (PD, Italy) and at the Centre de Recherche et de Restauration des Musées de France (C2RMF), Paris (France).  
*/ Supervisors: Prof. Marcello Lunardon, Prof. Alessandro Re*

#### BACHELOR'S DEGREE IN PHYSICS

FINAL DEGREE MARK: 109/110

UNIVERSITÀ DEGLI STUDI DI PADOVA, September 2019

- **Thesis title:** "Lifetime measurements with fast-timing scintillators".
- **Thesis subject:** Nuclear Physics. Experimental activities conducted at the Legnaro National Laboratories (INFN-LNL), Legnaro (PD, Italy).  
*/ Supervisor: Prof. Daniele Mengoni*

### High school studies

#### ITALIAN SECONDARY SCHOOL DIPLOMA

FINAL DEGREE MARK: 100/100 CUM LAUDE

SCIENTIFIC HIGH SCHOOL E. MEDI, VILLAFRANCA DI VERONA (VR), July 2016

## EXPERIENCES

### Formative Experiences

#### — January 2021 / "Laboratory and exercises in applied geophysics for archeology and cultural heritage" course

Topic: Multispectral analysis (IR-VIS-UV) of artifacts of archaeological interest: papyri, ostraca, statuettes of terracotta, fresco fragments. Department of Cultural Heritage: archaeology, history of art, cinema and music – DBC, Università degli studi di Padova.

#### — October 2020 – Jan 2021 / "Advanced Physics Laboratory" course

Topic: Characterization of EUCLIDES Si-telescopes for charged particle measurements. Study of the d+d reaction with a 3 MeV pulsed beam at the CN accelerator (INFN-LNL). Legnaro National Laboratories (INFN-LNL), Legnaro (PD) and Department of Physics and Astronomy "Galileo Galilei", Università degli studi di Padova.

#### — September 2020 – Nov 2020 / Stage during the "Introduction to research activities" course

Topic: GALILEO triple cluster HPGe performance investigation and silicon detector signal simulation for Pulse Shape Analysis. Legnaro National Laboratories (INFN-LNL), Legnaro (PD) and Department of Physics and Astronomy "Galileo Galilei", Università degli studi di Padova.

#### — July 2019 / Summer school "Rewriting Nuclear Physics Textbooks: one more step forward" and visit to the INFN-LABEC

Organized by Polo Didattico Fibonacci, INFN-Pisa, Pisa, Italy.

### Publications

— "The GALILEO  $\gamma$ -ray array at the Legnaro National Laboratories" / Nuclear Inst. and Methods in Physics Research A 1015 (2021) 165753 - A. Goasduff et al.

— "Study of the d+d Reaction with a 3 MeV Pulsed Beam at the CN Accelerator" / LNL Annual Report 2020, ISSN 1828-8561 - A. Candiello et al.

— "Efficiency and Peak-to-total evaluation for GALILEO Triple Cluster HPGe Detector" / LNL Annual Report 2020, ISSN 1828-8561 - M. Magalini et al.

— "MicroSil: Simulation Of Charged Particle Detector Signals" / LNL Annual Report 2020, ISSN 1828-8561 - D. Tomasella et al.

### Other activities

— Moderator of the "Avvocato Atomico" scientific social media page (topics: nuclear energy, environmental sustainability, technology), 2021- ongoing

— Team manager of Primavera Chievo Women football team, 2019 - ongoing

— Tutor of scientific subjects for private families, with a commitment of 3 hours per week, 2019-2021

— Archaeological excavation activities with High School on different ancient sites in the cities of Urbisaglia (MC, Italy), Egnazia (BR, Italy) and Civitavecchia (RM, Italy), 2012-2016