

EDUCATION AND TRAINING

**Chiara
D'Erme**

CONTACT

Nationality: Italian

Gender: Female

Languages	
Italian	Mother tongue
English	Fluent
French	Reading and Listening (good) Writing and Speaking (pre-Intermediate)

Skills	
Scientific	OM, SEM-EDS, XRD, TGA-DSC, Isothermal Calorimetry, FTIR and Raman spectroscopies, concrete mix design, Mechanical tests, DLS, Mechanical Profilometer
Digital	MS Office (Excel, Word, Publisher, PowerPoint, Paint3D), OriginLab, Kaleidagraph, MatLab (basic), ImageJ, Highscore, Opus, Mendeley

11/2018 – 12/05/2022 - Rome, Italy

PhD course in Electrical, Materials, Raw materials and Nanotechnology Engineering

Sapienza, University of Rome

Research topic: Effects of Fibrillated cellulose on the properties of mortars and concrete

Additional tasks: hands-on lab courses for undergraduate students; analyses for third parties

EQF level 8



15/09/2020 – 15/12/2021 - Zurich, Switzerland

Visiting PhD student

Swiss Federal Institute of Technology (ETH)



Main research topic: Effects of Fibrillated cellulose on the properties of mortars and concrete

Additional tasks: hands-on lab courses for undergraduate students on thermal analyses

10/2014 – 01/2017 - Roma, Italy

Master's degree in "Science and Technology for the Conservation of Cultural Heritage"

Sapienza, University of Rome

Thesis: Preparation and characterisation of protective coatings functionalised with nanoparticles for applications to Cultural Heritage

110/110 cum laude | EQF level 7



10/2010 – 03/2014

Bachelor's degree in "Science and Technology for the Conservation of Cultural Heritage"

Sapienza, University of Rome

Thesis: Petrographic characterisation of the ancient mortars of Santa Maria of Cerrate.

Investigation on mortars (XIII-XX century): petrographic analysis of thin sections by Optical Microscope (OM) and Scanning Electron Microscope with EDS (SEM-EDS); interpretation of X-Ray Powder Diffraction (XRPD) data.

107/110 | EQF level 6



WORK EXPERIENCE

03/04/2018 – 31/10/2018 - Rome, Italy

Research grant

CisTec

Investigations on ancient ceramics and Roman mortars from Palatino hill (supervisor: Prof. Dr. Maria Laura Santarelli) by optical microscopy, thermal analysis (TGA-DSC), analysis of images with ImageJ to determine the aggregate size distribution.



01/10/2017 – 31/03/2018 – Zurich, Switzerland

Research grant

ETH – Laboratory for Multifunctional Materials – Department of Materials



Investigations on ancient ceramics and Roman mortars from Palatino

Scholarships & Grants

Start of Research 2020 – Sapienza, University of Rome

PhD Joint Mobility Exchange programme 2020 – Sapienza, University of Rome

Torno subito 2017 – Region of Lazio

S. Gemini Preservation Studies fellowship 2017

hill (supervisor: Prof. Dr. Walter Caseri) by optical microscopy, scanning electron microscopy with EDS (SEM-EDS), X-Ray Powder Diffraction (XRPD), Raman and FTIR (in transmission and in ATR) spectroscopies.

14/03/2016 – 17/01/2017 - Casaccia (Rome), Italy

Trainee

ENEA



Academic Traineeship in the laboratories of chemistry and spectroscopy of TEC-FIS, ENEA (Casaccia).

Preparation of nanoparticle suspensions and characterisation of the particle-size distribution by Dynamic Light Scattering (DLS). Characterisation of polymeric nanocomposite films by Atomic Force Microscope (AFM) and mechanical profilometer; colorimetric analysis of the composite applied on stone materials before and after UV irradiation. Application of Raman and FTIR-ATR spectroscopies.

SCHOOLS & COURSES

09/2020 – 12/2020

Concrete technology & Shrinkage and Cracking of Concrete: Mechanisms and Impact on Durability

Master courses of ETH Civil Engineering Master programme (Zurich, Switzerland)

11/11/2019 – 15/11/2019

School of Infrared and Raman Spectroscopy- VIII

Centro Conservazione e Restauro La Venaria Reale (TO, Italy)

10/2019 – 03/2020

Technology of Materials

Classes of Materials, Metals, Concrete.

01/2019 – 05/2019

Programming with MatLab

Introduction, Selection statements, Loop statements, Matlab programs, Text manipulation, Data structure.

10/2018 – 03/2019

Non-metallic materials for engineering

Polymer, ceramic and composite materials.

10/2018 – 03/2019

Experimental techniques for materials characterisation

01/2019 – 05/2019

Programming with MatLab

Introduction, Selection statements, Loop statements, Matlab programs, Text manipulation, Data structure.

29/05/2017 – 23/06/2017

Touching the Stones: Restoration and Analysis of Historic Buildings

Fellow student at S. Gemini Preservation Studies – Summer school, S. Gemini (Italy)

Field Project: Restoration of the Façade of the Oratory of San Carlo

PUBLICATIONS

● **Effect of Fibrillated Cellulose on Lime Pastes and Mortars**

2022

D'Erme, C.; Caseri, W.R.; Santarelli, M.L.; *Materials* 15, no. 2: 459

● **Preliminary study of the mechanical and hygrothermal performance of concrete reinforced with fibrillated cellulose**

2021

D'Erme, C.; Verticchio E., Frasca F., Caseri W., Cornaro C., Siani A. M, Santarelli M.L.; AIP Conference Proceedings 2416, 020012

● **Preparation and Characterization of Polymeric Nanocomposite Films for Application as Protective Coatings**

2017

Gagliardi S., Rondino F., D'Erme C., Persia F., Menchini F., Santarelli M. L., Paulke B.-R., Enayati A. L., Falconieri M., AIP Conference Proceedings 1873, 020007

CONFERENCES AND SEMINARS

15/09/2020 – 18/09/2020 > - Rome

● **NanoInnovation**

Preliminary study of the mechanical and hygrothermal performance of concrete reinforced with nanofibrillated cellulose (poster)

C. D'Erme, E. Verticchio, F. Frasca, W. Caseri, C. Cornaro, A.M. Siani, M.L. Santarelli

24/06/2019 – 27/06/2019 > - Urbino

● **XVIII Congress ABC**

An investigation on the Roman mortars from the Palatine archaeological site (presentation)

C. D'Erme, W. Caseri, E. Tervoort-Gorokhova, M.L. Santarelli

11/06/2019 – 15/06/2019 > - Rome

● **NanoInnovation**

Nanofibrillated cellulose as nano-reinforcement for cementitious composites (presentation)

C. D'Erme, W. Caseri, M.L. Santarelli

ADDITIONAL EXPERIENCES

2014 – 2017

● **Congress and fair assistant**

Occasional jobs as assistant in fairs, international congresses (ex. ESC Congress 2016) and at *Palazzo della Civiltà* (Fendi palace) during Giuseppe Penone's exhibition .

DRIVING LICENCE

● **Driving Licence: B**

DIVING LICENSE

● **Advanced Open Water diver**