



# Chiara D'Erme

**Nationality:** Italian

## WORK EXPERIENCE

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[ 06/2022 - Current ] **Research scientist**

*CISTeC*

**Country:** Italy

**Main activities and responsibilities:**

Collaboration in the development of an apparatus to early detect the degradation of wood in a museum collection using machine learning methods.

[ 03/04/2018 - 31/10/2018 ] **Research Scientist**

*CISTeC*

**Address:** Italy

**City:** Rome

**Country:** Italy

**Main activities and responsibilities:**

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 ] **Research Scientist**

*ETH - Laboratory for Multifunctional Materials - Department of Materials*

**City:** Zurich

**Country:** Switzerland

**Main activities and responsibilities:**

Investigations on ancient ceramics and Roman mortars from Palatino 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 ] **Trainee**

*ENEA*

**Address:** Italy

**City:** Casaccia (Rome)

**Country:** Italy

**Main activities and responsibilities:**

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.

## EDUCATION AND TRAINING

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[ 11/2018 - 05/2022 ] **PhD course in ELECTRICAL, MATERIALS, RAW MATERIALS AND NANOTECHNOLOGY ENGINEERING**

*Sapienza, University of Rome*

**Address:** Rome, Italy

**Level in EQF:** EQF level 8

**Main subject / occupational skills covered:**

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

[ 10/2014 - 01/2017 ] **Master's degree in "Science and Technology for the Conservation of Cultural Heritage"**

*Sapienza, University of Rome*

**Address:** Roma, Italy

**Final grade:** 110/110 cum laude **Level in EQF:** EQF level 7

**Main subject / occupational skills covered:**

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

[ 10/2010 - 03/2014 ] **Bachelor's degree in "Science and Technology for the conservation of Cultural Heritage"**

*Sapienza, University of Rome*

**Final grade:** 107/110 **Level in EQF:** EQF level 6

**Main subject / occupational skills covered:**

**Thesis:** Petrographic characterisation of the ancient mortars of Santa Maria di 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.

## LANGUAGE SKILLS

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**Mother tongue(s):** Italian

**Other language(s):**

### English

**LISTENING** C1 **READING** C2 **WRITING** C1

**SPOKEN PRODUCTION** C1 **SPOKEN INTERACTION** C1

### French

**LISTENING** B1 **READING** B1 **WRITING** A2

**SPOKEN PRODUCTION** A2 **SPOKEN INTERACTION** A2

### German

**LISTENING** A2 **READING** A2 **WRITING** A1

**SPOKEN PRODUCTION** A1 **SPOKEN INTERACTION** A1

## DIGITAL SKILLS

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### My Digital Skills

#### Microsoft Office

Word | Excel | Publisher | Powerpoint

#### Data Analysis

Origin, Kaleidagraph (good knowledge) | MatLab (Basic) | Python

#### Other

ImageJ | HighScore Plus | TA Instruments Universal Analysis 2000 | X Powder | OPUS 7.0

## PUBLICATIONS

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[ 2022 ] **Effect of Fibrillated Cellulose on Lime Pastes and Mortars**

<https://doi.org/10.3390/ma15020459>

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

[ 2021 ]

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

**Reference:** NanoInnovation 2020 AIP Conference Proceedings (submitted)

Verticchio, F. Frasca, W. Caseri, C. Cornaro, A.M. Siani, M.L. Santarelli

[ 2017 ]

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

**Reference:** AIP Conference Proceedings 1873, 020007

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

## DRIVING LICENCE

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**Cars:** B

## CONFERENCES AND SEMINARS

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[ 15/09/2020 - 18/09/2020 ] **NanoInnovation** Rome

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 ] **XVIII Congresso ABC** Urbino

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

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

[ 11/06/2019 - 15/06/2019 ] **NanoInnovation** Rome

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

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

## **SCHOOLS & COURSES**

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[ 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 Edizione**

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

[ 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