



Chiara D'Erme

Nationality: Italian

WORK EXPERIENCE

[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

[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

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

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

[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

Cars: B

CONFERENCES AND SEMINARS

[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

[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