

ADRIANA IULIANO

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I am a chemist and heritage scientist. My interests include the application of chemical and chemico-physical analytical methods to the study and characterisation of cultural heritage and heritage materials. I am currently a PhD student in Archaeometry at Archéosciences Bordeaux within the GPR Human Past and the Aquitania Ornata research programs.

EDUCATION

PHD FELLOWSHIP IN PHYSICS OF ARCHAEOLOGICAL MATERIALS

OCT 2022 - PRESENT

Archéosciences Bordeaux UMR 6034, CNRS/Univ. Bordeaux Montaigne/Univ. of Bordeaux, Pessac, France

Thesis project: "**Archaeometric study of the technical evolution of the painted decorations in the ancient city of Limonum**", aimed at the characterisation of the materials and technology evolution of the wall paintings from Limonum (Poitiers) by archaeometric methods in order to identify, document, and explain tipping points in Gallo-Roman decorative traditions.

MSc IN SCIENCE FOR THE CONSERVATION-RESTORATION OF CULTURAL HERITAGE

SEP 2019 - DEC 2021

Department of Chemistry, University of Bologna - Ravenna Campus, Italy

Final grade: 110/110 cum laude

Thesis: "Multi-analytical characterisation of materials and degradation products of the painted wooden ceiling of the Terrace of Saturn in Palazzo Vecchio, Florence" (MSc thesis internship carried out at CNR-ISPC)

BSc (WITH HONOURS) IN CHEMISTRY

SEP 2015 - JUNE 2019

School of Chemistry, University of Glasgow, United Kingdom

Thesis: "Chemistry for Cultural Heritage: using Mauveine to teach Heritage Science" - Final Grade: 3rd Class

RESEARCH EXPERIENCE

RESEARCH TRAINEE

JAN - APR 2022

Rathgen Research Laboratory - Berlin State Museums, Berlin, Germany

Erasmus+ Traineeship aimed at the technological study of Sumerian mosaic clay cones from Iraq from the Vorderasiatisches Museum (Pergamonmuseum). Analytical techniques employed: XRF, digital, optical and polarised microscopy, SEM-EDX, FTIR and Raman spectroscopy, cross-section preparation.

RESEARCH INTERN

MAR - AUG 2021

CNR - Institute of Heritage Science (CNR-ISPC), Florence, Italy

MSc thesis internship aimed at the diagnostic study of the Terrace of Saturn in Palazzo Vecchio in Florence, particularly at the characterisation of the materials used and at the identification of degradation and restoration products present in the painted and gilded wooden ceiling. Techniques employed: non-destructive portable imaging and spectroscopic techniques, micro-destructive spectroscopic and diffraction techniques (digital and optical microscopy, XRF spectroscopy, XRD, SEM-EDX, FTIR and Raman spectroscopy).

RESEARCH INTERN

JUNE - JULY 2018

Microchemistry and Microscopy Art Diagnostic Laboratory (M2ADL), University of Bologna - Ravenna Campus, Italy

Completed a six-week research internship on analytical chemistry applied to cultural heritage. Carried out cleaning tests on painting mock-ups with organogels, cross-section preparation, extraction and analysis of synthetic dyes from wool fibers, in-situ analyses at Basilica di Sant'Apollinare Nuovo in Ravenna. Techniques employed: portable micro-NIR spectroscopy, portable FTIR spectroscopy, FTIR microscopy.

SKILLS

LANGUAGES

Italian  **Native**

English  **C2**

French  **B2**

IT & DATA ANALYSIS SOFTWARES

Microsoft Office - Adobe Lightroom - Canva - GIMP - ChemDraw - ENVI -

Spectronon - Artax - PyMca - Opus - Omnic - OriginPro - LabSpec - AZtec

LABORATORY AND TECHNICAL SKILLS

Digital, optical, polarised microscopy - Stereomicroscope - Colorimetric analysis - Fibre Optics Reflectance Spectroscopy - Vis-NIR-SWIR Hyperspectral Imaging - XRF Spectroscopy - FTIR Spectroscopy & Microscopy (ATR, Transmission, Reflectance acquisition mode) - KBr pellet & resin cross-section preparation - μ Raman Spectroscopy - X-Ray Diffraction - SEM-EDX - NMR Spectroscopy & Relaxometry - Chromatography (column, TLC, GC-MS, HPLC) - X-Ray Radiography & Computed Tomography - IR Thermography

OTHER

Written and oral communication - Report writing - Public speaking - Teamwork - Leadership - Time management - Problem solving - Reliability - Precision - Attention to detail - Creativity

ADDITIONAL EXPERIENCE AND ACHIEVEMENTS

TRAINING

International PhD Academy: Preserving and Safeguarding the Beauty of Cultural Heritage, Venice International University (VIU), Italy **NOV 2023**

One-week PhD Academy aimed at providing an overview of state-of-the-art analytical methodologies and diagnostic tools currently used within the heritage science domain, with a focus on pioneering methods exploiting optical, X-rays, lasers and particle probes along with their more recent applications to different kinds of heritage items.

School of Multivariate Analysis, Analytical Chemistry and Chemometrics Research Group, Univ. of Genoa, Italy **SEP 2023**

One-week school with theoretical and hands-on sessions on: Principal Component Analysis (with introduction to Multivariate Quality Control, Multivariate Process Monitoring and N-way methods), Classification/Modeling methods (Linear Discriminant Analysis, Quadratic Discriminant Analysis, SIMCA), Multivariate Calibration (Multiple Linear Regression, Partial Least Squares).

EU FT-ICR MS Short Course for Cultural Heritage Science, Miniaturization for Synthesis, Analysis and Proteomics Lab, University of Lille, France **NOV 2022**

Three-day theoretical and practical courses on the identification of natural products by Fourier Transform Ion Cyclotron Resonance Mass Spectrometry covering the analysis of archaeological bones, watercolors, oil paintings and pigments.

Training Camp 2021, INFN - National Institute of Nuclear Physics, Viterbo, Italy **NOV 2021**

A one-week camp aimed at designing a multidisciplinary diagnostic approach for the analysis of artworks, Techniques used: Multispectral and Hyperspectral Imaging (UV/VIS/IR, HSI), FTIR and Raman spectroscopy, XRF mapping.

CONFERENCES AND PRESENTATIONS

International PhD Academy: Preserving and Safeguarding the Beauty of Cultural Heritage,

Venice International University (VIU), Venice, Italy

NOV 2023

Poster: "Multi-analytical study of Roman painted plasters from the ancient city of Limonum (Poitiers, France)"

Young Researchers in Archaeometry Workshop 2023, Tübingen, Germany

OCT 2023

Oral presentation: "Archaeometric study of the Roman wall paintings of Limonum (Poitiers, France)"

29th European Archaeology Association (EAA) Annual Meeting, Belfast, UK

SEP 2023

Oral presentation: "Archaeometric study of pigments in the Roman wall paintings of Limonum (Poitiers, France)" within the session "Polychromy in Practice: casting colour onto Roman artworks"

24th Congress of the GMPCA: Archaeometry 2023, Nice, France

APR 2023

Poster: "Archaeometric study of the technical evolution of the painted decorations in the ancient city of Limonum"

15th Conservation Studies Colloquium, Berlin-Brandenburg, Germany

NOV 2022

Oral presentation: "Cone mosaic façades in Mesopotamia (4th millennium BCE): archaeometric approach to an architectural innovation".

12th Annual Learning and Teaching Conference, University of Glasgow, UK

APR 2019

Invited to present at the largest university-based teaching conference in the UK as one of the best six talks of the Let's Talk About [X] conference.

Let's Talk About [X], University of Glasgow, UK

FEB 2019

A multidisciplinary undergraduate research conference at the University of Glasgow. Selected to present my final year research project at the conference with the talk "Chemistry for Cultural Heritage".

School of Chemistry BSc Final year poster session, University of Glasgow, UK

FEB 2019

AWARDS

Winner of the BSc Hons Poster Prize Award for the best research poster of class 2019, University of Glasgow

JUNE 2019

PUBLICATIONS

Dermech S. et al., **Cone mosaic façades in Mesopotamia (4th millennium BCE): archaeometric approach to an architectural innovation**. In : Mosaik. In situ – tranzlosiert – museal. Beiträge des 15. Konservierungswissenschaftlichen Kolloquiums in Berlin / Brandenburg, 4 november 2022, Michael Imhof Verlag, Petersberg, 12-21.

Iuliano A., **The dye that revolutionised chemistry: Perkin and the discovery of Mauveine**, 2019, Research for Cultural Heritage science blog

Autorizzo il trattamento dei miei dati personali presenti nel CV ai sensi dell'art. 13 d. lgs. 30 giugno 2003 n. 196 - "Codice in materia di protezione dei dati personali" e dell'art. 13 GDPR 679/16 - "Regolamento europeo sulla protezione dei dati personali".

02/02/2024

REFERENCES

DR. ISABELLE PIANET

PhD thesis supervisor

Archéosciences Bordeaux - UMR 6034

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DR. MATHILDE CARRIVE

PhD thesis co-supervisor

HerMA - Université de Poitiers

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