

Curriculum vitae

Francesca Falcone, Ph.D.

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Professional and research experience

Period	Role and activities
15/11/2024 – on going	<p>TD Researcher <i>CNR-ISPC, XRAYLab, Catania</i></p> <p>Employed as part of the CHANGES – Cultural Heritage Active Innovation for Sustainable Society project, funded through the National Recovery and Resilience Plan (PNRR), under the supervision of Dr Francesco Paolo Romano. The research activity focuses on the study of degradation phenomena in cultural heritage using non-invasive, portable and advanced imaging and diffraction techniques, in particular MA-XRF and MA-XRD (point and mapping). The main objective is the mineralogical identification of the compounds constituting the paint films, preparatory layers and stages of alteration of artistic materials, with the aim of understanding the processes of deterioration and improving preventive conservation strategies and risk prevention.</p> <p>Participation in MOLAB campaigns – E-RIHS (European Research Infrastructure for Heritage Science). Involved in in-situ research campaigns conducted within the European E-RIHS framework (MOLAB platform), performing data acquisition on artworks using MA-XRF and MA-XRD scanners. Contributed to data processing and interpretation, focusing on the elemental and mineralogical characterization of pictorial layers to identify pigments, reconstruct artists' palettes in relation to historical contexts, and evaluate restoration interventions and degradation phenomena. Results from these campaigns have been presented at national and international conferences, enhancing the dissemination of analytical heritage data and supporting interdisciplinary research in heritage science.</p>
1/12/2021 – 5/06/2025	<p>PhD (XXXVI cycle) <i>University of Chieti-Pescara 'G. d'Annunzio' Course in Earthquake and Environmental Hazards.</i></p> <p>The research project, entitled '<i>Cultural Heritage Conservation Risk Scenarios: Investigation and Assessment Using Microanalytical and Non-Destructive Methods</i>.'</p> <p>The project combined microanalytical and diagnostic techniques to assess material risks in cultural heritage, including archaeometric analysis of ancient ceramics and sustainable ceramics from industrial and mining waste. The study focused on durability, mechanical, and thermal resistance, proposing eco-compatible solutions for industrial applications. Developed workflows for data acquisition and analysis from non-invasive imaging techniques and micro-invasive, with experience in data processing and experimental test (porosimetry, Bi-axial flexural strength, 3-point bendig strength, impact strength, OM, XRF, XRD, Colorimetry, SEM-EDS).</p>
25/05/2024 – 25/07/2024	<p>Technical-scientific collaboration <i>G. d'Annunzio University of Chieti-Pescara</i></p> <p>Mineralogical and chemical-physical analysis and characterisation of materials using SEM-EDS, XRD and optical microscopy (OM), aimed at studying the constituent minerals and identifying the chemical-mineralogical components of samples from university collections. The assignment also included the reorganisation, cataloguing and computerisation of the educational and scientific collections of stone and ceramic materials, with the drafting of descriptive sheets and the entry of data into specialist databases.</p>
18/11/2023 – 17/02/2024	<p>Visiting Researcher <i>National Centre for Scientific Research (NCSR) 'Demokritos', Institute of Nanoscience and Nanotechnology, Athens (Greece), at the Advanced Ceramics and Composites Laboratory (ACCL).</i></p> <p>Supervisors: Dr. Anno Hein and Dr. Georges Vekinis.</p> <p>The research activity was dedicated to the study of the thermal and mechanical resistance of sustainable, ancient and industrial ceramics produced from waste derived from the food, mining and special waste treatment industries. The work included the preparation and processing of ceramic</p>

materials, the production of test specimens and the performance of mechanical tests (bending, fracture, triaxial, biaxial, impact), as well as measurements of moisture absorption, porosimetry and thermal conductivity. The investigations were carried out using SEM-EDS, XRD, XRF and OM, with the aim of assessing the durability and performance of sustainable ceramics with a view to their potential application in the construction sector.

03/06/2020 – 30/10/2020	<p>Scholarship <i>G. d'Annunzio University of Chieti-Pescara at the CAAM-Centre for Archaeometry and Microanalysis and CAST-Centre for Advanced Studies and Technology laboratories.</i> Winner of the scholarship in '<i>Chemical-physical analysis for the characterisation of alloys, enamels and glass pastes in ancient jewellery and archaeological artefact</i>. Analysis and characterisation of metal alloys and gems through the use of optical microscopy (OM), XRF spectrometry and scanning electron microscopy with microanalysis (SEM-EDS).</p>
30/05/2019 – 29/10/2019	<p>Project "L'Aquila, City of Art" <i>Ministry of Cultural Heritage and Activities and Tourism (MiBACT), Abruzzo Museum Complex and MuNDA – National Museum of Abruzzo (AQ).</i> Winner of the national competition promoted by MiBACT in collaboration with the Municipality of L'Aquila and the Gran Sasso Tourist Centre. Activities to promote and communicate the artistic and cultural heritage of the city of L'Aquila through museum and workshop tours.</p>
01/02/2014 – 01/03/2014	<p>Technical-scientific collaboration for diagnostics and restoration <i>University of Camerino (UNICAM) and Archaeological Superintendence of the Marche (AN).</i> Diagnostics of the materials constituting the archaeological remains, identification of biodeteriogens and development of an innovative system for the intervention and conservation of Roman remains in the basement of the Palazzo dei Capitani in Ascoli Piceno, in collaboration with the university team and the Superintendence.</p>
1/10/2013 – 1/09/2014	<p>Conservator of Cultural Heritage <i>Rino Altero Angelini Restauri, Ascoli Piceno (Italy).</i> Preventive and conservative restoration of paintings and artefacts of various materials; drafting of conservation and intervention reports, photographic documentation and post-restoration technical reports.</p>
01/01/2012 – 01/04/2012	<p>Library and Archive Conservator Assistant <i>University of Camerino, Faculty of Science and Technology.</i> Winner of the call for part-time student collaborations (2012). Library management and digitisation of library material using a Planetary Scanner, a non-invasive tool for the digital reproduction of ancient volumes and for the protection of their state of conservation.</p>

Education and training

30/05/2023 – 01/06/2023	<p>Advanced Training School 'AMARCH 2023 – Analysis of materials for archaeometry and cultural heritage' <i>University of Trento.</i> Activity carried out at the <i>Bagolini Laboratory of Archaeology, Archaeometry and Photography of the Centre for Advanced Studies in the Humanities (CeASUm)</i>, in collaboration with the <i>Department of Industrial Engineering</i> and the <i>Department of Physics</i>. The training included theoretical and practical modules on the use of material analysis techniques in the field of archaeometry and cultural heritage conservation.</p>
26/05/2023	<p>Training 'Dynamic testing with applications to cultural heritage and sensitive structures' <i>G. d'Annunzio University of Chieti-Pescara and National Order of Geologists of the Abruzzo region (Italy).</i> Participation in a training day dedicated to the application of dynamic methodologies for the structural monitoring of cultural heritage, with technical insights into survey methods, instrumentation and data interpretation.</p>

- 05–07/12/2022 TXRF (GNR) advanced course**
Qualification for independent use of the instrument.
Advanced training on the use of total X-ray fluorescence (TXRF) applied to the elemental characterisation of materials of scientific and cultural interest.
- 13/11/2022 Training course on the use of the Bruker D2 Phaser XRD diffractometer**
Qualification for independent use.
Theoretical and practical training on the use of X-ray diffraction for the identification of crystalline phases in natural and artificial materials.
- 11–12/11/2022 Practical course 'Comparative diagnostic techniques: case studies, fields of application, advantages and limitations'**
University of Camerino, UNICAM, Ascoli Piceno campus.
Technical-laboratory course on non-invasive diagnostic techniques for the study of cultural heritage: Multispectral Imaging, XRF Spectroscopy, Infrared Spectroscopy (FT-IR) and UV-VIS-NIR Reflectance (FORS).
- 23–24/04/2021 Training course "Innova Concrete: new materials for the conservation of cultural heritage"**
ABAP Abruzzo Superintendency, Ministry of Culture, University of Florence.
In-depth study of innovative materials and non-destructive diagnostic techniques for the conservation of architectural and monumental heritage.
- 12–13/02/2021 Advanced Training School "AMARCH 2021 – Analysis of materials for archaeometry and cultural heritage" (Winter School)**
University of Trento (Italy).
Theoretical and practical activities dedicated to the contribution of X-ray techniques in the analysis of the materials used in archaeological and historical-artistic artefacts.
- 29/08/2019 Advanced course on the use of scanning electron microscopy with microanalysis (SEM-EDS)**
Alfatest Strumentazione Scientifica, Rome, in collaboration with the “G. d’Annunzio” University of Chieti, (Italy)
Qualification as a technician for the independent use of the Phenom XL instrument (Thermo Fisher Scientific).
- 02/09/2014 – Master's Degree in 'Sciences and Materials for Conservation**
22/02/2019 *University of Florence*
Thesis: *Conservative treatment of archaeological fossils and bones using innovative inorganic consolidants: evaluation of effectiveness and impact on genetic heritage analysis.*
Research conducted at the *Department of Chemistry and Molecular Biology* and *CRIST – Centre for Structural Crystallography*, in collaboration with *CSGI in Florence*.
The project integrated chemical-physical methodologies (OM, SEM, XRD, XRF, TEM, FTIR) to develop compatible and non-contaminating materials for the conservation of artefacts.
- 01/02/2015 – Training internships in Lisbon (Portugal).**
01/08/2016 *Universidade Nova de Lisboa* – 'Fundamentals of Paper Conservation' Laboratory: Diagnostics and analysis of ancient and modern paper supports (Raman, OM, SEM, XRF).
Museu Nacional de História Natural e da Ciência – 'Diagnosis and Conservation of Photography Materials' Laboratory: diagnostic analysis of photographic and documentary materials using spectroscopic and microscopic techniques.
- 01/09/2010 – Bachelor's Degree in "Technologies for the Conservation and Restoration of Cultural Heritage"**
11/04/2014 *University of Camerino, Ascoli Piceno (AP).*
Thesis: *San Giovanni della Croce, a lost painting by Nicola Monti.*
Chemical-physical study of the materials constituting the work and conservative restoration project, conducted using Raman spectroscopy, FTIR and optical microscopy.
- 2021 Course on "Care and Management of Art museums Deposits"**
Ministry of Culture (MiC), Directorate-General for Museums and Directorate-General for Education and Research, in collaboration with the *Fondazione Scuola dei Beni e delle Attività Culturali*.

	Training on procedures for the management, cataloguing and preventive conservation of materials stored in museum storage facilities.
2020	Course on 'Preparing cultural heritage for emergencies' <i>MiC, ABAP Marche Superintendency, ICOM, ICCROM.</i> Training dedicated to safety planning and risk management for cultural heritage in emergency and disaster situations.
2020	Advanced course on 'Methods for handling, transporting and storing movable works of art' <i>Opificio delle Pietre Dure (Florence), Prof. Roberto Boddi.</i> In-depth study of procedures for handling, packaging and microclimatic monitoring of works of art.
13/01/2020	SIGECweb course (ICCD, Rome) Qualification for independent use of the IT platform for cataloguing cultural heritage.
2019	24 CFU certification for access to teaching.
2018	Training on safety in university laboratories <i>University of Florence.</i> Courses required by Legislative Decree 81/08 on workplace safety, with in-depth analysis of chemical and biological risks, artificial optical radiation, emergencies and personal protective equipment.
01/06/2013 – 08/06/2013	Course on 'Securing museum exhibits in the event of disasters' <i>Gradara Castle (Italy).</i> Technical and practical training course on securing works of art in emergency situations, organised by Legambiente Marche and the Fire Brigade.
02/07/2012 – 06/07/2012	Internship: "First responder for archaeological artefacts during an excavation" <i>Natural Science Museum of Camerino (MC).</i> Stratigraphic excavation and securing of palaeontological finds in the Collecorti area.
2005 – 2010	Artistic High School Diploma <i>"G. Misticoni" State Art School, Pescara, specialising in "Cataloguing of Cultural Heritage".</i>

Teaching and assistance activities

2022 – 2025	Geoarchaeology, Archaeometry and Cultural Heritage Materials (3 CFU) "G. d'Annunzio" University of Chieti-Pescara (UNICH) Teaching assistance and support for theoretical and practical lessons on the characterisation and recognition of materials using OM, XRD, XRF and SEM-EDS. The course explored the study of ancient ceramics, the evolution of body and coating compositions, ochres, colour technology in Roman times and the characterisation of pigments and their stages of degradation.
2020 – 2024	Mineralogy and Petrography Course (3 CFU) G. d'Annunzio University of Chieti-Pescara (UNICH). Collaboration in laboratory activities and practical exercises in mineralogical and petrographic characterisation using polarised optical microscopy (OM), XRD, XRF, and SEM-EDS. Support in sample preparation and supervision of students during the analysis of constituent minerals.
2020 – 2024	Petrographic Microscopy Course G. d'Annunzio University of Chieti-Pescara (UNICH). Support activities for laboratory exercises dedicated to the petrographic analysis of geological and ceramic materials. Assistance with the preparation of thin sections, observations under a polarised optical microscope, the recognition of mineralogical and textural phases, and training students in microscopic documentation techniques.
2020 – 2024	Applied Environmental Geochemistry Course G. d'Annunzio University of Chieti-Pescara (UNICH). Assistance with laboratory activities for the chemical and mineralogical characterisation of environmental samples and geomaterials. Participation in practical exercises in analysis using XRF, XRD, SEM-EDS and other geochemical techniques applied to the determination of the origin, composition and contamination of materials.

2020 – 2024	Volcanology and Volcanic Risk G. d'Annunzio University of Chieti-Pescara (UNICH). Collaboration in practical exercises and laboratory activities related to volcanic processes, the petrology of volcanic rocks and risk assessment. Support for students in the analysis of volcanic products and the interpretation of geochemical and petrographic data for the assessment of hazards associated with eruptive phenomena.
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Scientific activities

20/05/ 2023	Workshop 'Dynamic testing with applications to cultural heritage and sensitive structures' 'G. d'Annunzio' University of Chieti-Pescara and Order of Geologists of Abruzzo, Chieti. Member of the organising committee and support for scientific activities within the EEH Doctorate and Geosciences course. The workshop addressed the application of dynamic methodologies for the monitoring and structural diagnostics of cultural heritage.
2021 – 2023	PhD and Welcome Day – Doctorate in Earthquake and Environmental Hazards (EEH) G. d'Annunzio University of Chieti-Pescara. Coordination and scientific support for the organisation of days dedicated to the presentation of PhD students' research and the promotion of interdisciplinary interaction between the different areas of the PhD programme.

Invited lectures, collaborations and curatorships

16/07/2023	Invited presentation – 'Archaeometry and geoarchaeology of the Eastern Maiella' Pennapiedimonte, (Chieti). Presentation dedicated to the archaeometric and geoarchaeological study of materials and contexts in Eastern Maiella, with an in-depth analysis of the relationship between the mineralogical characteristics of the finds and their territory of origin, as part of the scientific dissemination activities of the EEH PhD.
09/12/2022	Conference – 'The Warrior of Capestrano: between scientific investigations and narrative proposals' National Archaeological Museum – Villa Frigerj, Chieti. Presentation entitled ' <i>Mapping and measuring seismic risk for museum collections and the Villa Frigerj building</i> ', dedicated to the diagnostic assessment and mitigation of seismic risk applied to museum heritage, as part of the EEH – <i>Earthquake and Environmental Hazards</i> Doctorate.
13/10/2021	Invited presentation – 'Characterisation and conservation of the relics of San Pelino: prospects for intervention with inorganic nano-consolidants'. Cathedral of San Pelino, Corfinio (Diocese of Sulmona-Valva). Presentation of the analytical results and the state of conservation of the relics, with proposals for intervention based on the use of inorganic nano-consolidants and OM, XRF, XRD and SEM-EDS diagnostic techniques.
02/02/2020	Invited lecture – "Blades and Gold: materials from the museum collection of ancient jewellery" La Civitella National Archaeological Museum, Chieti. Presentation given as part of the exhibition ' <i>Scenes from Life in Popular Tradition</i> ', dedicated to the morphological and compositional analysis of Bourbon jewellery from the Scasserra collection using optical microscopy (OM) and SEM-EDS microanalysis.

Reports and collaboration projects

06/2025	Technical report – In situ measurement campaign at the National Archaeological Museum of Reggio Calabria, Italy. Falcone, F., Barba Castagnaro, S., Bottura Scardina, S., Longo, S., Romano, F.P. In situ campaign at the National Archaeological Museum of Reggio Calabria on swords from the Torre Galli necropolis – Report on preliminary XRF, XRD and FTIR results. Responsible structure: CNR–ISPC, Catania office. Internal technical report, June 2025. Activity conducted on swords from the Torre Galli necropolis as part of the research carried out by
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CNR–ISPC, Catania office. The work involved XRF, XRD and FTIR analyses for the preliminary characterisation of the metal artefacts and the study of their state of preservation.

2022 – ongoing Collaborative project – Open AIAR.

Junior contact person for the CAAM laboratory – Centre for Archaeometry and Microanalysis at the 'G. d'Annunzio' University of Chieti, in collaboration with the Superintendency of L'Aquila and the Museum of the Marshes of Celano (AQ). The project involves the archaeometric characterisation of ceramic materials from the sanctuary of Luco dei Marsi (AQ) using OM, SEM-EDS, XRPD, XRF, μ -Raman and ATR-FTIR techniques.

2023 – 2024 Technical reports for mineralogical analysis and characterisation

XRD analysis of samples from the archaeological site of Tiriolo (CZ), the Roman walls and plasterwork of the town hall of Camerino (MC), as well as plaster and mortar from Pompeii (NA), for the company A.R.T. & CO. S.r.l., a spin-off of the UNICAM Science Centre (Ascoli Piceno).

2023 Authentication report

Technical-scientific appraisal of a coin for authentication purposes for the Carabinieri Command for the Protection of Cultural Heritage (TPC) in L'Aquila (Abruzzo).

2022 Technical-scientific authentication and evaluation report – Collection of traditional clothing by Antonio Scasserra

Analysis performed on 45 textile samples preserved at the MUSEC – Museum of Costumes of Molise (IS) using polarised light microscopy and SEM-EDS, aimed at characterising the constituent materials and studying their state of preservation.

2022 Technical report – Analysis of archaeological ceramics from Nemi (RM)

Investigations conducted using polarised light transmission optical microscopy and XRPD, with evaluation of the mineralogical phases and state of conservation of the materials.

2021 Expertise – Collection of jewellery from the 1800s

Analysis of metal alloys, enamels and glass pastes using optical microscopy (OM) and SEM-EDS, with evaluation of the production processes and state of conservation of the artefacts.

Interpersonal and organisational skills and competences

- Excellent organisational skills in work tasks and teamwork, developed during research activities and interdisciplinary collaborations at national and international level.
- Consolidated experience in the management and coordination of complex research projects and in the planning of experimental and laboratory activities.
- Excellent ability to adapt and cooperate with multidisciplinary working groups in academic and institutional contexts.
- Scientific communication skills acquired through presentations at conferences, workshops and university teaching activities.
- Active participation in the planning and organisation of academic and educational events, such as university open days, workshops and scientific events.

Technical skills and competences

- Advanced expertise in non-invasive imaging and spectroscopic techniques applied to cultural heritage and natural materials, with direct experience in the following methodologies: XRD, SEM-EDS, XRF, TXRF, FTIR, Raman and optical microscopy (OM).
- Autonomy in performing chemical-physical, mineralogical and microstructural characterisation investigations of ceramic, stone and metal materials.
- Experience in integrating spectroscopic and imaging datasets for pigment mapping and material identification.
- Excellent aptitude for laboratory work, in compliance with the safety regulations set out in Legislative Decree 81/08.

- Experience in processing and interpreting experimental data and in drafting technical-scientific reports.
- Good skills, with independent knowledge of scientific data management software (Microsoft Excel, Database Access, SIGECweb, Origin) and statistical analysis programmes (R).
- Qualification in the use of digital graphics and rendering programmes, with mastery of the main professional design and visual communication software (AutoCAD, Autodesk, CorelDraw, Adobe).
- Competent in laboratory safety and scientific reporting.
- Knowledge of historical painting materials and pigments; experienced in the study of chromatic degradation

Other skills and competences

- Excellent research, design and intervention skills in the field of materials investigation using chemical-physical analytical techniques.
- Junior member of the Open AIAR Project, contact person for XRD, SEM, FTIR, Raman, XRF and OM analytical techniques in the study '*Geoarchaeology and archaeometry study of the statue of Demeter Angitia from the sanctuary of Angitia in Luco dei Marsi (AQ)*', in collaboration with the Museo delle Paludi di Celano (Abruzzo, Italy) and the ISPC-CNR.
- Subject expert in university courses in Petrology and Petrographic Microscopy (GEO/07) and Geoarchaeology and Archaeometry (GEO/07) at the 'G. d'Annunzio' University of Chieti-Pescara.
- Independent user of XRD, SEM-EDS, FTIR, XRF and TXRF analysis tools.
- Qualification in digital graphics and rendering.
- Diploma in musical instruments (piano and solfeggio) obtained in Pescara.

Awards and recognitions

- Winner of the First Prize "AP Art UP - Creativity Award for Young Minds" (2013), sponsored by the Piceno University Consortium, Department of Youth and Municipality of Ascoli Piceno.
- Winner of the part-time student collaboration competition (2013), University of Camerino.
- Winner of the BEST Scholarship (2011) – "The Best Minds of Piceno", Piceno University Consortium, Ascoli Piceno.
- Winner of the ERSU Marche Scholarship for deserving students, Ascoli Piceno (2012).
- Winner of the DSU Toscana Scholarship, University of Florence (2014).
- Winner of the Erasmus+ Scholarship (2016) for the degree course in Restoration and Materials Engineering at the Universidade Nova de Lisboa, with an internship at the Museu Nacional de História Natural e da Ciência in Lisbon.

Foreign languages

Italian	Native
English	B1
Portuguese	B2
Spanish	B1

Teaching and assistance with university courses

2022 – 2025 Course in Geoarchaeology and Archaeometry and Cultural Heritage Materials (3 CFU)

G. d'Annunzio University of Chieti-Pescara.

Teaching and laboratory assistance including theoretical lessons and practical sessions on the characterisation and recognition of materials using OM, XRD, XRF and SEM-EDS. The course focuses on the study of ceramics, the evolution of the composition of cores and glazes, ochres and pigments in Roman antiquity, with analysis of the stages of degradation and processes of colour alteration.

2020 – 2024 Course in Mineralogy and Petrography (3 CFU)

G. d'Annunzio University of Chieti-Pescara.

Support activities for theoretical teaching and practical laboratory exercises for the mineralogical and

petrographic characterisation of natural and artificial samples. Supervision of students during analyses and assistance in the identification of constituent minerals using OM, XRD, XRF and SEM-EDS.

2020 – 2024 Petrographic Microscopy Course

G. d'Annunzio University of Chieti-Pescara.

Assistance with laboratory activities focused on the petrographic analysis of geological and ceramic materials. Support in the preparation of thin sections and observations under a polarising optical microscope for the mineralogical and textural characterisation of samples.

2020 – 2024 Applied Environmental Geochemistry Course

G. d'Annunzio University of Chieti-Pescara.

Assistance with practical laboratory exercises for the chemical-mineralogical characterisation of environmental samples and geomaterials. Support activities for elemental and phase analysis using XRF, XRD, SEM-EDS and other geochemical techniques applied to the study of pollution and the determination of the origin of materials.

2020 – 2024 Course in Volcanology and Volcanic Risk

G. d'Annunzio University of Chieti-Pescara.

Teaching and laboratory support activities related to volcanic processes, the petrology of volcanic rocks and risk assessment. Assistance with exercises in the characterisation of volcanic materials and interpretation of geochemical and petrographic data for the analysis of eruptive phenomena and related risks.

Publications and Conferences

Scientific publications (*=corresponding author)

- I. **Falcone, F.***, Cinosi, A., Siverio, G., Rosatelli, G. 'Innovative methodological approach integrating SEM-EDS and TXRF microanalysis for characterisation in materials science: a perspective from cultural heritage studies'. *Spectrochimica Acta Part B: Atomic Spectroscopy*, 218 (2024), 106980. <https://doi.org/10.1016/j.sab.2024.106980>
- II. **Falcone, F.***, Aquilino, M., Stoppa, F. "Exploring the Composition of Egyptian Faience." *Minerals*, 14 (2024), 586. <https://doi.org/10.3390/min14060586>
- III. Casolino, C., **Falcone, F.***, Perna, M.G., Metalla, E., Rosatelli, G., Stoppa, F., Antonelli, S. "Exploring Durrës between East and West: discovery of a protostonepaste—archaeological context and archaeometric analysis." *Heritage Science*, 12 (2024), 1200. <https://www.nature.com/articles/s40494-024-01200-w>
- IV. Perna, M.G., **Falcone, F.**, Casolino, C.*, Metalla, E., Rosatelli, G., Antonelli, S., Stoppa, F. "Analysing the glaze of a medieval ceramic fragment from the Durres Amphitheater in Albania." *Heritage Science*, 12 (2024), 1175. <https://www.nature.com/articles/s40494-024-01175-8>
- V. **Falcone, F.**, Di Valerio, E., La Salvia, V., Rosatelli, G.*, Perna, M.G., Bello, S., Francis, R.E., Stoppa, F. "Geoarchaeology, archaeometry and history of a seismic endangered historical site in the Central Apennines (Italy)." *Heritage Science*, 11 (2023), 906.
- VI. **Falcone, F.***, Dionisio, A., Castorina, F., Tufo, A., Francis, R.E., Stoppa, F. "Archaeometry of a Roman Millstone from Santa Maria Arabona, Manoppello (Abruzzo, Central Italy)." *Minerals*, 11 (2021), 948. <https://doi.org/10.3390/min11090948>
- VII. **Falcone, F.*** Doctoral thesis: Cultural heritage conservation risk scenarios: investigation and assessment using microanalytical and non-destructive methods. "G. d'Annunzio" University of Chieti-Pescara (2025).

- VIII. Russo, G., **Falcone, F***, Ceccaroni, E., Ciulla, M., Di Giacomo, S., Mignardi, S. "Terracotta artefacts from Anxa–Angitia: an archaeometric insight into ancient craftsmanship." MDPI Special Issue: Mineralogical Approaches to Archaeological and Cultural Heritage Materials (submitted).

Conferences (*=speaker)

- I. **Falcone, F.***, Kladouri, N.K., Botticelli, M., Tsampa, K., Ravan, E.L., Santagati, G., Grigoraki, A., Lazaris, P., Panagakos, I., Tsakri, K., Romano, F.P., Miliani, C., Karydas, A.G., Caliri, C. "Non-invasive analysis of Egyptian wooden funerary stelae by MA-XRF and MA-XRD: an interdisciplinary study on materials and technology." 111th National Congress of the Italian Physical Society (SIF), Palermo, 22–26/09/2025, **Oral contribution**.
- II. Botticelli, M.*, Tsampa, K., Arcidiacono, T., **Falcone, F.**, Miliani, C., Ravan, E.L., Santagati, G., Karydas, A., Breoulaki, H., Perdikatsis, V., Caliri, C., Romano, F.P. "Copper Arsenate Greens in Ancient Art: Advanced Mobile and Lab-Based X-ray Methods for Re-defining the Palette of Macedonian Funerary Painting." TECHNART 2025 – International Conference on Analytical Techniques for Heritage Studies and Conservation, Perugia, Italy, 6–9 May 2025, **Oral contribution**.
- III. **Falcone, F.***, Cinosi, A., Siverio, G., Rosatelli, G. "New methodological XRF approach for powder microanalysis." International Conference on Total Reflection X-Ray Fluorescence Analysis and Related Methods, Clausthal Zellerfeld, Germany, 5–8 September 2023, **Oral contribution**.
- IV. D'Angelo, G.*, Di Girolami, G., Ferrante, M., Cinaglia, P., Potenza, A., **Falcone, F.** "Archeometric study on architectural terracottas from the Temple of Diana Nemorensis (Lazio, Italy): preliminary results." AIAR – Archeometria 2023, Messina, 19/04/ 2023, **Oral contribution**.
- V. **Falcone, F.*** "Assessment of mitigation measures and risk scenario of the museum collections exhibited in the Villa Frigerj National Archaeological Museum in Chieti (Central Italy)." SGI-SIMP Conference, Turin, 19–22/09/2022, **Oral contribution**.
- VI. **Falcone, F.***, Stoppa, F. "Multidisciplinary and statistical approach for the investigation and characterisation of archaeological artefacts." 3rd Advanced Materials Science World Congress, London (UK), 21–22/03/2022, **Oral contribution**.
- VII. **Falcone, F.***, Vicentini, N., Ambrosio, F., Stoppa, F. "Technologies for the production of metals and semi-precious stones of the master goldsmiths of 1800 in the Abruzzo area, Central Italy." A Conservation Carol 2020 – Diagnostics, meeting point for Cultural Heritage, University of Milan, 22/12/2020, **Oral contribution**.
- VIII. Salvatore, A., Carretti, E., Balzano, M., **Falcone, F.**, Vai, S., Lari, M*. "Application of inorganic nanostructured materials for the conservation and preservation of ancient bone remains". European Materials Research Society (E-MRS) – Fall Meeting 2018, Warsaw, Poland, 17–20/09/2018, Session: Bioinspired and Biointegrated Materials as New Frontiers in Nanomaterials VIII, **Oral contribution**.

Poster contributions

- I. **Falcone, F.***, Kladouri, N.K., Botticelli, M., Tsampa, K., Ravan, E.L., Santagati, G., Grigoraki, A., Lazaris, P., Panagakos, I., Tsakri, K., Romano, F.P., Miliani, C., Karydas, A.G., Caliri, C. "Non-invasive analysis of Egyptian wooden funerary stelae by MA-XRF and MA-XRD: an interdisciplinary study on materials and technology". TECHNART 2025 – International Conference on Analytical Techniques for Heritage Studies and Conservation, Perugia, Italy, 6–9/05/2025, **Poster contribution**.
- II. Longo, S.*, Andolina, R., Botticelli, M., Bottura Scardina, S., **Falcone, F.**, Fera, M., Ghiara, G., Miliani, C., Ravan, E.L., Romano, F.P., Mödlinger, M., Caliri, C. "The Doors of the Basilica di San Marco: a scientific examination through MA-XRF". TECHNART 2025 – International Conference on Analytical Techniques for Heritage Studies and Conservation, Perugia, Italy, 6–9 May 2025, **Poster contribution**.
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