

CURRICULUM VITAE

First name: Annalaura

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EDUCATION AND TRAINING

- **Ph.D.**, Section of Biodiversity and Ecosystem Analysis, Department of Science, University of RomaTRE. Thesis Title: “Impact of endolithic organisms on stone monuments”.
12/2011 - 01/2014
- **Master Degree** “Science and Technology for Conservation and Restoration of Cultural Heritage” University of Bologna, Faculty of Mathematical and Physical Sciences, Ravenna Campus (RA), Italy. Thesis Title: “Portable XRF for determination of distinctive elementals ratios of ancients Pigments”. Vote: 110/110 cum laude.
10/2006 - 03/2009
- **Bachelor’s Degree** “Technology for Conservation and Restoration of Cultural Heritage”. University “La Sapienza”. Faculty of Mathematical and physical sciences. Degree Course in “Science for Conservation and Restoration of Cultural Heritage” Rome (RM), Italy. Vote: 110/110 cum laude.
10/2002 - 07/2006

WORK EXPERIENCE

- **Researcher** CNR – ISPC .
11/2022- to date
 - ✓ Analysis of original artworks and laboratory tests using non-invasive techniques
 - ✓ State of conservation assessment
 - ✓ Investigation and identification of biodeterioration processes caused by microorganisms and lichens on stone materials

- **Project Researcher** Department of Science, University of RomaTRE.
12/2020-10/2022
 - ✓ Application of scanning electron microscopy (SEM/EDS) and RAMAN technologies.
 - ✓ Interference assessment of natural biocidal products as part of the MAECI project.
 - ✓ Publication of scientific papers, and oral presentations at international conferences.

- **Consultant** by Bioinvent S.r.l. Rome, Via Portuense 796c.
02/2017-09/2022
 - ✓ Develop synergies with new financial and technical partners.
 - ✓ Optimize the use of webinar platform for seminary.
 - ✓ Start-up of a food microbiology laboratory.
 - ✓ Cooperation with the sales, agents drafting up quotations and technical descriptions.

- ✓ Coordinator in regional fundraising calls.
 - **Postdoctoral Researcher.** Department of Science, University of RomaTRE. 01/2016 – 01/2017
Scientific Disciplinary Sector: Fis/07 - Bio/03
 - ✓ Applications of Raman spectroscopy, optical and electron microscopy aimed at the materials characterizations.
 - ✓ Preparation of biological specimens, preparation of cross sections and samples for SEM / EDS analysis.
 - ✓ Spectra acquisition and data interpretation.
 - ✓ Publication of scientific papers, and oral presentations at international conferences.
 - **Research fellowship** Centro per lo Studio di Roma (CROMA) 01/2015 - 01/2016
Scientific Disciplinary Sector: Bio/03
 - ✓ Development of specific research activities regarding the biodeterioration of Cultural Heritage and the Raman spectroscopy applied to different materials.
 - **Postdoctoral Researcher.** Department of Science, University of RomaTRE. 01/2014 - 01/2015
Scientific Disciplinary Sector: Fis/07 - Fis/03
 - ✓ Design and optimization of a Micro-Raman set-up to be installed at the sample environment position of a neutron station at the ESS source.
 - ✓ Applications of Raman spectroscopy to organic and inorganic materials.
 - ✓ Analysis *in situ* and in lab.
 - ✓ Spectra acquisition and data interpretation.
 - ✓ Publication of scientific papers, and oral presentations at international conferences.
 - **Trainee postgraduate,** Superintendence Monuments and Fine Arts Office of Venice “Laboratorio della Misericordia”, Cannaregio, 30131 Venice, Italy. 02/2010 - 12/2010
 - ✓ Evaluation of alteration causes of artistic materials in relation to the environmental conditions.
 - ✓ Investigations aimed at the characterization of the materials constituting cultural heritage by multispectral imaging, transmission and reflection optical microscope, stereo microscope, XRF, SEM-EDS, FT-IR.
 - **Internal Fellowship,** Microchemistry and Microscopy Art Diagnostic Laboratory” (M2ADL), University of Bologna, Ravenna Campus. 09/2008 - 07/2009
 - X-Ray Fluorescence (XRF) analysis of artistic heritage materials.
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TEACHING ACTIVITY

- **Seminar activity** entitled “XRF and Raman Spectroscopy for the Study of Manuscripts: Principles, Applications, and Case Studies” 1st Doctoral Seminar titled Visible and Invisible Elements of the Manuscript Book in the Mediterranean world. Southern Medieval Manuscripts: Investigations and Research, Benevento from 6 to 11 October 2025
- **Seminar activity** entitled “A diagnostic approach to the biodeterioration study: Case studies on stone monuments”. “INTACH conservation Institutes lectures series”
06/2020
- **Teaching module** “Organic and inorganic chemistry and basic physics” within Lazio Region course “Technician in food quality intervention Lazio Region – POR FSE 2014-2020”. *03/2019*
- **Seminar activity** entitled "Protectives, biocides and consolidants and biodeterioration: some cases studies" within the II level International Master in "Biology for knowledge and conservation of cultural heritage". Dip. of Sciences, University of RomaTre. *04/2017*
- **Co-tutor** in the thesis of the I level Master in "Experts in the protection of cultural heritage" of the student I. Di Casola with object: Diagnostic study on fragments of colored plaster coming from the archaeological site of Abu Erteila in Sudan. *2015/2016*
- **Teaching collaboration** in the seminars of the PhD program in Plant and Animal production Sciences, XXIX, XXX and XXXI Cycle. *2013- 2015*
- **Seminar activity** entitled "Techniques for the characterization and quantification of Biodeterioration" within the II level International Master in "Biology for the knowledge and conservation of cultural heritage". Dept. of Sciences, University of RomaTre. *2014 - 2015*
- **Seminar activity** entitled "Characterization of artifact surfaces via Raman - Xray fluorescence" within the II level Master in "Methods, Materials and Technologies for Cultural Heritage". Dept. of Sciences, University of Roma Tre. *2014 – 2015*
- **Lessons** of general chemistry, restoration chemistry and biology for Cultural Heritage at the Ars Labor Professional Restoration Institute in Rome. *03/2015 - 06/2015*
- **Biology seminar** for Cultural Heritage at the Marco Besso Foundation in Rome. *05/2013*
- **Tutor**, support for disabled students at the Bachelor Degree and Specialization in Science and Technology for Conservation and Restoration of Cultural Heritage of the University of Bologna, Ravenna. *11/2007 - 06/2008*

PUBLICATIONS IN INTERNATIONAL JOURNAL WITH IMPACT FACTOR (IF)

1. Bartoli F, **Casanova Municchia A**, Tescari M, Ciccone I, Rosati P, Lazzara A, Catrambone M. (2025). Preventive Diagnosis of Biological Colonization and Salt-Related Decay on the Frescoes of the “Oratorio dell’Annunziata” (Riofreddo, *Latium*, Italy) to Improve Conservation Plans. *Applied Sciences.*; 15(15):8762. <https://doi.org/10.3390/app15158762>
2. Konstantakopoulou, E., **Casanova Municchia, A.**, Ferretti, R., Porcinai, S., & Ferretti, M. (2025). Performance indicators for portable X-ray fluorescence devices. *Acta IMEKO*, 14(1), 1-6.
3. Luvidi, L., **Casanova Municchia, A.**, Konstantakopoulou, E., Orazi, N., Ferretti, M., & Caruso, G. (2025). Combined Use of Non-Destructive Analysis Techniques to Investigate Ancient Bronze Statues. *Sensors*, 25(6), 1727.
4. Konstantakopoulou, E., **Casanova Municchia, A.**, Luvidi, L., & Ferretti, M. (2024). Comparison of Different Methods for Evaluating Quantitative X-ray Fluorescence Data in Copper-Based Artefacts. *Condensed Matter*, 9(1), 5.
5. **Casanova Municchia, A.**, Giordani, P., Taniguchi, Y., & Caneva, G. (2024). Assessing the Impact of Lichens on Saint Simeon Church, Paşabağ Valley (Cappadocia, Turkey): Potential Damaging Effects versus Protection from Rainfall and Winds. *Applied Sciences*, 14(16), 6943. <https://doi.org/10.3390/app14166943>
6. **Casanova Municchia, A.**, Fidanza, M. R., & Caneva, G. (2023). Advances in testing the interference of biocides on stone materials: A comparative analysis and guidelines for a standardised approach. *Journal of Cultural Heritage*, 64, 23-41.
7. Isola, D., Bartoli, F., **Casanova Municchia, A.**, Lee, H. J., Jeong, S. H., Chung, Y. J., & Caneva, G. (2023). Green biocides for the conservation of hypogeal mural paintings raised from Western and Eastern traditions: Evaluation of interference on pigments and substrata and multifactor parameters affecting their activity. *Journal of Cultural Heritage*, 61, 116-126.
8. Bartoli, F., Isola, D., **Casanova Municchia, A.**, Kumbaric, A., & Caneva, G. (2023). Science for art: multi-years' evaluations of biocidal efficacy in support of artwork conservation. *Frontiers in Microbiology*, 14, 1178900.
9. Bartoli F., **Casanova Municchia A.**, Leotta M., S. Luciano, Caneva G. (2021). Biological recolonization dynamics: Kentridge's artwork disappearing along the Tiber embankments (Rome, Italy). *International Biodeterioration & Biodegradation*, 160, (2021), 105214.
10. Iorio, M., Sodo, A., Graziani, V., Branchini, **Casanova Municchia A.**, P., Ricci, M. A., Tortora, L. Mapping at the nanometer scale the effects of sea-salt derived chlorine on cinnabar and lead white by using delayed image extraction in ToF-SIMS. *Analyst*, 146(7), (2021): 2392-2399.
11. Bernardini S., Bellatreccia F., **Casanova Municchia A.**, Della Ventura, Sodo A. Raman spectra of natural manganese oxides. *Journal of Raman Spectroscopy* 50.6 (2019): 873-888.
12. Tescari, M., Frangipani, E., Caneva, G., **Casanova Municchia, A.**, Sodo, A., & Visca, P. (2018). *Arthrobacter agilis* and rosy discoloration in “Terme del Foro” (Pompeii, Italy). *International Biodeterioration & Biodegradation*, 130, 48-54.
13. **Casanova Municchia, A.**, Bartoli, F., Taniguchi, Y., Giordani, P., Caneva, G. (2018). Evaluation of the biodeterioration activity of lichens in the Cave Church of Üzümlü (Cappadocia, Turkey). *International Biodeterioration & Biodegradation*, 127, 160-169.
14. Montanari, R., Alberghina, M. F., **Casanova Municchia, A.**, Massa, E., Pelagotti, A., Pelosi, C., Schiavone S. Sodo, A. (2018). A polychrome Mukozuke (1624–1644) porcelain offers a new hypothesis on the introduction of European enameling technology in Japan. *Journal of Cultural*

Heritage, 32, 232-237.

15. Sodo, A., Tortora, L., Biocca, P., **Casanova Municchia, A.**, Fiorin, E., & Ricci, M. A. (2019). Raman and time of flight secondary ion mass spectrometry investigation answers specific conservation questions on Bosch painting Saint Wilgefortis Triptych. *J Raman Spectrosc.*; 1–11.
16. Ioele, M., Sodo, A., **Casanova Municchia, A.**, Ricci, M. A., & Russo, A. P. (2016). Chemical and spectroscopic investigation of the Raphael's cartoon of the School of Athens from the Pinacoteca Ambrosiana. *Applied Physics A*, 122(12), 1045.
17. **Casanova Municchia, A.**, Bellatreccia, F., D'Ercoli, G., Mastro, S. L., Reho, I., Ricci, M. A., Sodo, A. (2016). Characterisation of artificial patinas on bronze sculptures of the Carlo Bilotti Museum (Rome). *Applied Physics A*, 122(12), 1021.
18. Sodo, A., **Casanova Municchia, A.**, Barucca, S., Bellatreccia, F., Della Ventura, G., Butini, F., & Ricci, M. A. (2016). Raman, FT-IR and XRD investigation of natural opals. *Journal of Raman Spectroscopy*, 47(12), 1444-1451.
19. **Casanova Municchia, A.**, Bartoli, F., Bernardini, S., Caneva, G., Della Ventura, G., Ricci, M. A., T. Boun Suy, Sodo, A. (2016). Characterization of an unusual black patina on the Neang Khmau temple (archaeological Khmer area, Cambodia): a multidisciplinary approach. *Journal of Raman Spectroscopy*, 47(12), 1467-1472.
20. **Casanova Municchia, A.**, Micheli, M., Ricci, M. A., Toledo, M., Bellatreccia, F., Mastro, S. L., & Sodo, A. (2016). Raman, SEM-EDS and XRPD investigations on pre-Columbian Central America "estucado" pottery. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 156, 47-53.
21. Bartoli, F., **Casanova Municchia, A.**, Futagami, Y., Kashiwadani, H., Moon, K. H., & Caneva, G. (2014). Biological colonization patterns on the ruins of Angkor temples (Cambodia) in the biodeterioration vs bioprotection debate. *International Biodeterioration & Biodegradation*, 96, 157-165.
22. **Casanova Municchia, A.**, Caneva, G., Ricci, M. A., Sodo, A. (2014). Identification of endolithic traces on stone monuments and natural outcrops: preliminary evidences. *Journal of Raman Spectroscopy*, 45(11- 12), 1180-1185.
23. **Casanova Municchia, A.**, Percario, Z., & Caneva, G. (2014). Detection of endolithic spatial distribution in marble stone. *Journal of microscopy*, 256(1), 37-45.
24. Caneva, G., Lombardozi, V., Ceschin, S., **Casanova Municchia, A.**, Salvadori, O. (2014). Unusual differential erosion related to the presence of endolithic microorganisms (Martvili, Georgia). *Journal of Cultural Heritage*, 15(5), 538-545.
25. Lombardozi, V., Castrignanò, T., D'antonio, M. , **Casanova Municchia, A.**, Caneva, G. (2012). An interactive database for an ecological analysis of stone biopitting. *International biodeterioration & biodegradation*, 73, 8-15.

PUBLICATIONS IN INTERNATIONAL JOURNAL

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1. Salvadori O., **Casanova Municchia A.** (2016). The Role of Fungi and Lichens in the Biodeterioration of Stone Monuments. Accepted for publication in *Open Conference Proceedings Journal* (Vol. 7, No. 1).
 2. Tescari, M., Bartoli, F., **Casanova Municchia, A.**, Suy, T. B., & Caneva, G. (2016). Characterisation of a pink discoloration on stone in the Phnom Krom Temple (Angkor, Cambodia).
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Science and art: a future for stone, 147.

3. Fantusati E., Baldi M., Bellatreccia F., Sodo A., **Casanova Municchia A.**, Report of the seventh excavation season at Abu Erteila”, *Journal of Intercultural and Interdisciplinary Archaeology*, (2015).

PRESENTATIONS AT NATIONAL AND INTERNATIONAL CONFERENCES

1. **Casanova Municchia, A.**, Adinolfi, G., Boccuto, A., Botteon, A., Buti, D., Carmagnola, R., Catrambone, M., Conti, C., Di Tullio, V., Luvidi, L., Mattana, S., Romani, A., Tomasetti, M. C., Miliani, C. Investigating Egyptian blue in Etruscan funerary art: insights from the Monterozzi Necropolis. Oral presentation, TECHNART 2025 – International Conference on Analytical Techniques for Heritage Studies and Conservation, Perugia (Italy), 6–9 May 2025.
2. **Casanova Municchia, A.**, Konstantakopoulou, E., Caruso, G., Luvidi, L., Ferretti, M.
Non-invasive study of the gilding technique on the fragments of two Roman bronze statues.
Poster presentation, Gordon Research Conference on Scientific Methods in Cultural Heritage Research, Switzerland, 7–12 July 2024.
3. **Casanova Municchia A.**, Bartoli, F., Isola, D., Caneva, G. Interference tests of green biocides for application on mural painting of Italian and Korean hypogean monument. Presentazione orale: International workshop Biological Risk for Hypogea:shared Data among Italy and Republic of Korea, Tarquinia 12nd November 2021.
4. **Casanova Municchia A.**, Bartoli, F., Taniguchi, Y., Giordani, P., Caneva, G. Evaluation of the biodeterioration effects of lichens in the cave Church of Uzumlu (Cappadocia, Turkey). Presentazione orale: *Congress European conference on Biodeterioration of stone monuments*, Paris 16-19/11/2016.
5. Caneva G., **Casanova Municchia A.**, Bartoli F. “Biological studies preparatory for the Kentridge’s artworks on embankments of Lungotevere (Rome)” Poster: *III International Plant Science Conference (IPSC)*, Rome, 21/09/2016.
6. **Casanova Municchia A.**, Baldi M., Addis A., Artioli G., Fantusati E., Ricci M.A., Secco M., Sodo A. Characterization of Meroitic pottery (I– IV century AD) from Abu Erteila (Sudan). Presentazione orale: 1st International Conference on Metrology for Archaeology, Benevento 22-23 Ottobre 2015.
7. Baldi M., Bellatreccia F., **Casanova Municchia A.**, Sodo A. Archaeometrical inquiries on Abu Erteila pottery. Poster: 13th European Meeting on Ancient Ceramics (EMAC), Athene 24-26 September 2015.
8. Bernardini S., Armiento G., Bellatreccia F., **Casanova Municchia A.**, Cavallo A., Della Ventura G., Proposito M., Sodo A. Poster: Enrichment of toxic elements in Mn deposits associated with the Santa Severa (Latium, Italy) travertine quarry. Congresso congiunto SIMP-AIV-SoGeI-SGI - Firenze 2-4 Settembre 2015
9. Bernardini S., Bellatreccia F., **Casanova Municchia A.**, Della Ventura G., Sodo A. Applications of Raman Spectroscopy to the study of natural manganese oxides. Poster: Congresso congiunto SIMP-AIV-SoGeI-SGI - Firenze 2-4 Settembre 2015.
10. Barucca S., Bellatreccia F., Della Ventura G., Butini F., **Casanova Municchia A.**, Ricci M.A., Sodo A. Poster: Multi-methodological characterization of opals: Defining origin, structures, composition and gemological properties. Congresso congiunto SIMP-AIV-SoGeI-SGI - Firenze 2-4 Settembre 2015.

11. **Casanova Municchia A.**, Bartoli F., Caneva G., Della Ventura G., Ricci M.A., Boun Suy T., Sodo A. Multidisciplinary approach to characterize an unusual blackish patina on the Neang Khmau temple- Archaeological Khmer area (Cambodia). Presentazione orale: 8th International Conference on the application of Raman spectroscopy in Art and Archaeology, Wroclow 1-5 September 2015.
12. Barucca S, Bellatreccia F., Della Ventura G., Butini F., **Casanova Municchia A.**, Ricci M.A., Sodo A. Characterization of natural, synthetic and imitation opals. Presentazione orale: 8th International Conference on the application of Raman spectroscopy in Art and Archaeology, Wroclow 1-5 September 2015.
13. Bartoli F., **Casanova Municchia A.**, Boun Suy T., Sodo A., Caneva G. Black patinas on Khmer temples (Bantey Srei and Neang Khmau): Biological causes and chemical ones. Presentazione orale: the 24th Technical Session of the International Coordinating Committee for the Safeguarding and Development of the Historic Site of Angkor (ICC-Angkor). AKP Phnom Penh, 4-5 June 2015.
14. **Casanova Municchia A.**, Tecniche spettroscopiche e microscopiche avanzate per la quantificazione del degrado biologico. Presentazione orale: II Conferenza Nazionale dei Beni Culturali “La Biologia per la valorizzazione dei beni culturali: competenze e opportunità”. Roma, 18 Maggio 2014.
15. **Casanova Municchia A.**, Caneva G., Ricci M.A., Sodo A. Identification of endolithic survival strategies on stone monuments. Presentazione orale: 7th International Conference on the application of Raman spectroscopy in Art and Archaeology, Ljubljana 2-6 September 2013.

ACTIVITIES AND RESPONSIBILITIES

1. Co-Supervisor of Nationale PhD in Heritage Science (2025-to date)
2. Regularly acting as a reviewer in peer-reviewed international journals (Biodeterioration and biodegradation, Journal of Cultural Heritage)

PRIVACY

In compliance with the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize the recipient of this document to use and process my personal details for the purpose of recruiting and selecting staff and I confirm to be informed of my rights in accordance to art. 7 of the above mentioned decree.