MARCO MALAGODI

Via Giuseppe Bardelli 9, 20131 Milan (Italy)
mobile: 0039 349 644 52 17 – e-mail: marco.malagodi@unipv.it

PERSONAL INFORMATION

Date of birth: 18th November 1966
Place of birth: Rome (Italy)
Gender: Male
Citizenship: Italian

EDUCATION

1995 University of Rome "La Sapienza" - Degree in Chemistry
Development of molecular mutants of Pseudomonas aeruginosa to the oxidative denitrification of frescoes and stone surfaces with soluble salts to nitrate and nitrite

1996 Central Institute for Restoration, Rome (ISCR) – Advanced training course on "Restoration, Conservation and Preservation of Cultural Heritage"
Concentrations: Study of interactions between synthetic consolidant and protective products; diagnostic techniques (IR, FT-IR, gas chromatography, histochemical analysis). Analysis and characterization of the main biocides used in restoration. Study of their interactions with stone, wood, paper

1997 University of Rome "La Sapienza", Department of Chemistry, Rome - Specialization course in "Chemical and physical techniques for the control, conservation and restoration of Cultural Heritage"
Concentrations: Study of the artefacts on analytical techniques, both destructive and non-destructive. Invasive and non-invasive analytical techniques applied to artistic artefacts; XRF, Raman spectroscopy, FT-IR spectroscopy

1998 Université Paris III, scientific laboratories of the Louvre Museum, Paris, France - European Advanced Study Course "Sciences and technologies of the materials and of the environment for the protection of stained-glasses and stone monuments"
Concentrations: SEM applications; X-ray techniques; photographic techniques under Vis, UV, IR; micro-FT-IR techniques; micro-sampling methods; microclimatic investigations in museum environment

1999 Training Centre IAL of Rome and Lazio - Multimedia computer management of Cultural Heritage

Concentrations: development and use of image management programs, desktop publishing and internet programming and databases for the statistical development of results

EMPLOYMENT INFORMATION

Current position:

2019-present ***Associate Professor (CHIM/12)***

Department of Musicology and Cultural Heritage, University of Pavia

Head of Restoration and Conservation Laboratories for Musical Instruments

- Diagnostics on historical musical instruments
- Management of research activities
- Research in charge of several funding scientific projects

Previous employments:

2012-present ***Head of Non Invasive Laboratory of Diagnostics, Museum of Violin, Cremona***

- Performing researche on the collections of the Museum, with particular attention to the varnishes and organic binders.
- Scientific management of the diagnostic researcher team
- Skill-sharing within conservation department of the Museum, with the restores and curators

2010-2011 ***Researcher***

Arkedos s.r.l. – Academic spin-off of the University of Pavia

Responsible for:

- Research on cleaning products, consolidation, and protection of works of art
- Preservation project for the study of the collection of the Modern Art Gallery of Milan

2008-2010 ***Researcher***

Department of Earth Sciences, University of Pavia

Responsible for:

- Studies on the traceability of mobile works of art (paper, canvas, and wood)
- Study of the main techniques of identification and authentication of works of art
- Laboratory research on ancient musical instruments, wood characterization, varnishes studies
- Management of the laboratory activities of the “Arvedi Laboratory”

2006-2008 ***Project leader***

Department of Chemistry, University of Calabria
Responsible for:

- PON National Project on Recovery and Restoration of Underwater Archaeological Artefacts (Project MESSIAH)
- Formulation of new protective products for the protection of the artefacts
- Setting up and management of the laboratory for the artefact's diagnostics.

2004-2006 ***Scientific coordinator***
Syremont SpA (Montedison) – Conservation and Restoration company
Responsible for:

- Management of the research laboratory
- Scientific research of the European project "Biobrush" on biological cleaning systems for surfaces of artworks
- Development of techniques for the programmatic conservation of artworks

2000-2003 ***Scientific manager***
CNR –Research Institute for the conservation and valorization of Cultural Heritage
Responsible for:

- Physical and chemical characterization of the biocide products used in the restoration
- Testing biocide efficacy against biodeteriogens autotrophic and heterotrophic
- Analysis of inorganic pigments used on

1999 ***Consultant***
ENEA – Italian National Agency for New Technologies, Energy and Sustainable Economic Development (Diagnostic Laboratory for Cultural Heritage)
Contractor for:

- Physical and chemical studies on processes of artworks degradation

1999-2008 ***Consultant***
Central Institute for Restoration (now Institute for Conservation and Restoration ISCR)
Responsible for:

- Coordination of laboratory activities and on field research on mobile works of art (paintings, papers) and buildings (stone and frescoes)
- Conservation and microclimatic studies.

TEACHING ACTIVITY

2012-present *University of Pavia, Italy*
Course: "Physical Methodologies for Cultural Heritage", MS in Chemistry
Course: "Chemistry for Restoration", MS in Restoration and Conservation
Course: "Chemistry for Cultural Heritage", MS in Restoration and Conservation

2011 *University of Modena and Reggio Emilia, Modena, Italy "Cultural Heritage Materials: from diagnostics to conservation" Erasmus Intensive Program 2011 January 9th - 22th,*
Lecture: "Stone Surfaces of Historical Monuments: methods of protection and consolidation"

2010 *Université Paris-Est Marne La Vallée, Marne La Vallée, France "Materials and Patrimony: stone, glass, ceramics and concrete durability and conservation" Erasmus Intensive Program 2010 January 11th - 22th,*
Lecture: "Stone Surfaces of Historical Monuments: methods of protection and consolidation"

2005 – 2010 *University of Calabria, Italy*
Course: “Recovery and Conservation of wooden and paper artefacts”, MS in Diagnostics, Conservation and Restoration of Cultural Heritage

1997 – 2009 *Institute for Professional Restoration and Conservation of Cultural Heritage "ArsLabor", Rome, Italy*
Teaching activity in the field of chemical and biological applied to mobile works (paintings, canvas and tables) and in chief for the diagnostic laboratory, for the Training Course for "Assistant Conservator"

2007 – 2009 *Monumental Site "Protestant Cemetery of Rome," Management board, Rome, Italy*
Module: "Sampling Techniques and non-destructive Diagnostics"

2007 – 2008 *University of Catania, Italy*
Course: “Diagnostic Investigation of Microclimate Control in Museum Areas”, MS in Cultural Heritage Science

2008 *Enaip, Lombardy Region - Educational Services Centre of Milan, Italy - Training course "Architectural Technician for the Relief, Restitution and the Graphical Representation of Historic Buildings (Project ID 375601)*
Lecture: “Conservation of wood materials”

2006 – 2007 *University of Calabria, Italy*
Teaching activity in the Master Course "Diagnosis, preservation and restoration of underwater source (DIARSUB)"

2005 – 2007 *National Consortium CIRTER - Project Sit-PON Calabria - Restoration and Conservation, Italy*
Module: “Diagnostic analytical techniques for the Conservation of Architectural Buildings”

1998 – 2000 Training Institute I.A.L. CISL Rome – Lazio, Italy
Course: “Restoration and Conservation of Ancient Mosaic pavements”

1998 *Central Restoration Institute (now Institute for Conservation and Restoration), Rome, Italy - Summer school for restorers at the site of the Sacromonte of Varallo (NO), Italy.*
Coordinator of the cleaning of the frescoes of the 16th century, by using enzymatic cleaning (non-invasive techniques)

RESEARCH ACTIVITY

Case studies

2012-2022 Museum of the Violin in Cremona. *Object***:** Antonio Stradivari Violins (17^{th} – 18^{th} century). *Main duties*: Non-invasive diagnostic analyses (Raman, FT-IR, XRF spectroscopy, UV Fluorescence, microscopic analyses (SEM EDS); characterization of the wooden materials). Study of the conservation environment of the artworks.

2010-2011 University of Pavia and the National Museum of Musical Instruments in Rome. *Object:* "Vinaccia" decorated mandolins, 18th century. *Main duties:* Micro-invasive diagnostic analyses (micro-FT-IR, SEM-EDS analysis, cross and polished sections, gas chromatographic analysis, micro-Raman spectroscopy); coordination of the restoration intervention; characterization of the wooden supports.

University of Pavia and the "Vittadini" Musical Institute of Pavia. *Object:* "Baioni" double-bass, 1868. *Main duties:* Micro-invasive diagnostic analyses (micro-FT-IR, SEM-EDS analysis, cross and polished sections), non-invasive diagnostic tests (X-ray radiography, endoscopic analysis; micro-photogrammetry; analysis with ultraviolet light in UV fluorescence), coordination of the restoration stage, characterization of the wooden supports.

University of Pavia and the "G. Verdi" Music Conservatory in Milan. *Object:* Viola da gamba "Joannes Marcus", second half of the 16th century. *Main duties:* Micro-invasive diagnostic analyses (micro-FT-IR, SEM-EDS analysis, cross and polished sections; gas chromatographic analysis), non-invasive diagnostic tests (tomography, analysis with ultraviolet light in UV fluorescence); characterization of the wooden supports.

University of Pavia and the Civic Museum of Cremona. *Object:* Bas-relief made by Giacomo Bertesi, 17th century. *Main duties:* Micro-invasive diagnostic analyses (micro-FT-IR, SEM- EDS analysis, cross and polished sections), characterization of the wooden supports.

University of Pavia and the Archaeological Superintendence of Rome. *Object:* Glass mosaic tesserae and frescoes, 1st century A.D.. *Main duties:* Micro-invasive diagnostic analyses (SEM-EDS analysis, cross and polished sections; LA-ICP-MS, micro-Raman spectroscopy).

2009 **University of Pavia.** *Object:* Frescoes of the "Castiglioni" chapel, 16th century, Pavia. *Main duties:* Micro-invasive diagnostic analyses (micro-FT-IR; cross and polished sections; micro-Raman spectroscopy, liquid chromatography), non-invasive diagnostic tests (microclimatic investigation).

2006 – 2008 Professional Institute of Restoration in Rome "ArsLabor"*Object:* Wooden polychrome tables attributed to Antoniazzo Romano, representing St. John the Baptist and St. Sebastian, 16th century. *Main duties:* Micro-invasive diagnostic analyses (FT-IR, SEM analysis, X-ray fluorescence, cross and polished sections) and non-destructive analyses (UV fluorescence, oblique light, infrared reflectography, false colour); coordination of the restoration stage; characterization of the wooden supports, removal of the biological degradation.

2008 **The Archaeological Superintendence of Ostia Antica (Rome).** *Object:* Frescoes the Castle of Julius II (16th century). *Main duties:* Micro invasive diagnostic analyses (polished sections, optical analysis of the different compositional levels, micro-FT-IR and FT-IR) and non-destructive analyses (UV fluorescence, and oblique light reflectography).

2005 – 2007 Professional Institute of Restoration in Rome "ArsLabor", *Object:* Polychrome wooden Christ (Latera (VT), Italy), 16th century. *Main duties:* Micro-destructive diagnostic analyses

(FT-IR, SEM analysis, morphological analysis of wood, wood species identification) and non-destructive analyses (UV fluorescence), pest attack xylophagous intervention, coordination of all phases of consolidation and structural consolidation.

2005 – 2008 Central Institute for Restoration in Rome and the Archaeological Superintendence of Rome. *Object:* Frescoes of the underground rooms of the Domus Aurea (Rome). *Main duties:* Study of the development conditions of bio-deteriogens (cyanobacteria and algae) agents, removal of the inner lighting, cleaning tests, microclimate analysis.

2005 – 2007 Syremont SpA and the Archaeological Superintendence of Pompeii. *Object:* Mosaic flooring and walls, archaeological area of Pompeii (Italy). *Main duties:* Development of synthesis systems for the conservation of artefacts and for preventing from micro- and macro-biological attacks (antifouling mortars IAV).

2001 – 2003 CNR - Institute for Conservation and Valorisation of Cultural Heritage in Rome. *Object:* Frescoes, Cathedral of Orvieto (Italy). *Main duties:* Laboratory testing for the characterization of pigments and bio-deteriogens identification, selection of biocidal effectiveness.

2000 **Central Institute for Restoration in Rome.** *Object:* Wall paintings, Church of St. Andrea della Valle in Rome. *Main duties:* Analysis for the identification of fungal colonization on the frescoes, biocide efficacy testing, analysis of the degradation stages.

1999 **Central Institute for Restoration in Rome.** *Object:* Stone artefacts, from Augustus Forum of Rome. *Main duties:* Analysis of decay of different rock types present, evidence of application of consolidants and protective products, biocidal efficacy trials.

PEER-REVIEWED PAPERS

1. Invernizzi C., de Ferri L., Comite V., Fermo P., Malagodi M., Pojana G. (2022). Correlation between surface roughness and spectral features in IR-reflection spectroscopy. MICROCHEMICAL JOURNAL, vol. 172, ISSN: 0026-265X, doi: 10.1016/j.microc.2021.106874
2. Cazzaniga I., Gargano M., Invernizzi C., Ludwig N. G., Malagodi M., Canevari C., Rovetta T. (2021). A multi-analytical non-invasive approach to aqueous cleaning systems in treatments on bowed string musical instruments. COATINGS, vol. 11, p. 1-16, ISSN: 2079-6412, doi: 10.3390/coatings11020150
3. Albano M., Ghirardello M., Fiocco G., Manzoni C., Malagodi M., Comelli D. (2021). Complementary mapping techniques to characterize the wood finish of musical instruments. THE EUROPEAN PHYSICAL JOURNAL PLUS, vol. 136, ISSN: 2190-5444, doi: 10.1140/epjp/s13360-021-02033-3
4. Fiocco, Giacomo, Gonzalez, Sebastian, Invernizzi, Claudia, Rovetta, Tommaso, Albano, Michela, Dondi, Piercarlo, Licchelli, Maurizio, Antonacci, Fabio, Malagodi, Marco (2021). Compositional and Morphological Comparison among Three Coeval Violins Made by Giuseppe Guarneri “del Gesù” in 1734. COATINGS, vol. 11, ISSN: 2079-6412, doi: 10.3390/coatings11080884
5. Weththimuni M. L., Milanese C., Licchelli M., Malagodi M. (2021). Improving the protective properties of Shellac-based varnishes by functionalized nanoparticles. COATINGS, vol. 11, ISSN: 2079-6412, doi: 10.3390/coatings11040419
6. Volpi F., Fiocco G., Rovetta T., Invernizzi C., Albano M., Licchelli M., Malagodi M. (2021). New insights on the stradivari “coristo” mandolin: A combined non-invasive spectroscopic approach. APPLIED SCIENCES, vol. 11, ISSN: 2076-3417, doi: 10.3390/app112411626
7. Fiocco G., Invernizzi C., Grassi S., Davit P., Albano M., Rovetta T., Stani C., Vaccari L., Malagodi

M., Licchelli M., Gulmini M. (2021). Reflection FTIR spectroscopy for the study of historical bowed string instruments: Invasive and non-invasive approaches. SPECTROCHIMICA ACTA. PART A, MOLECULAR AND BIOMOLECULAR SPECTROSCOPY, vol. 245, ISSN: 1386-1425, doi: 10.1016/j.saa.2020.118926

8. Fermo P., Colella M., Malagodi M., Fiocco G., Albano M., Marchioron S., Guglielmi V., Comite V. (2021). Study of a surface coating present on a Renaissance Piety from the Museum of Ancient Art (Castello Sforzesco, Milan). ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH INTERNATIONAL, ISSN: 0944-1344, doi: 10.1007/s11356-021-16244-9
9. Invernizzi C., Fiocco G., Iwanicka M., Targowski P., Piccirillo A., Vagnini M., Licchelli M., Malagodi M., Bersani D. (2021). Surface and interface treatments on wooden artefacts: Potentialities and limits of a non-invasive multi-technique study. COATINGS, vol. 11, p. 1-24, ISSN: 2079-6412, doi: 10.3390/coatings11010029
10. Albano M., Grassi S., Fiocco G., Invernizzi C., Rovetta T., Licchelli M., Marotti R., Merlo C., Comelli D., Malagodi M. (2020). A preliminary spectroscopic approach to evaluate the effectiveness of water-and silicone-based cleaning methods on historical varnished brass. APPLIED SCIENCES, vol. 10, ISSN: 2076-3417, doi: 10.3390/app10113982
11. Macchia A., Ruffolo S. A., Rivaroli L., Malagodi M., Licchelli M., Rovella N., Randazzo L., La Russa M. F. (2020). Comparative study of protective coatings for the conservation of Urban Art. JOURNAL OF CULTURAL HERITAGE, vol. 41, p. 232-237, ISSN: 1296-2074, doi: 10.1016/j.culher.2019.05.00
12. Kasprzok L., Fabbri D., Rombola A. G., Rovetta T., Malagodi M. (2020). Identification of organic materials in historical stringed instruments by off-line analytical pyrolysis solid-phase microextraction with on-fiber silylation and gas chromatography-mass spectrometry. JOURNAL OF ANALYTICAL AND APPLIED PYROLYSIS, vol. 145, ISSN: 0165-2370, doi: 10.1016/j.jaap.2019.104727
13. Blumich B., Baias M., Rehorn C., Gabrielli V., Jaschtschuk D., Harrison C., Invernizzi C., Malagodi M. (2020). Comparison of historical violins by non-destructive MRI depth profiling. MICROCHEMICAL JOURNAL, vol. 158, ISSN: 0026-265X, doi: 10.1016/j.microc.2020.105219
14. Invernizzi C., Fiocco G., Iwanicka M., Kowalska M., Targowski P., Blumich B., Rehorn C., Gabrielli V., Bersani D., Licchelli M., Malagodi M. (2020). Non-invasive mobile technology to study the stratigraphy of ancient Cremonese violins: OCT, NMR-MOUSE, XRF and reflection FT-IR spectroscopy. MICROCHEMICAL JOURNAL, vol. 155, ISSN: 0026-265X, doi: 10.1016/j.microc.2020.104754
15. Poggialini F., Fiocco G., Campanella B., Legnaioli S., Palleschi V., Iwanicka M., Targowski P., Sylwestrzak M., Invernizzi C., Rovetta T., Albano M., Malagodi M. (2020). Stratigraphic analysis of historical wooden samples from ancient bowed string instruments by laser induced breakdown spectroscopy. JOURNAL OF CULTURAL HERITAGE, vol. 44, p. 275-284, ISSN: 1296-2074, doi: 10.1016/j.culher.2020.01.011
16. Fiocco G., Rovetta T., Invernizzi C., Albano M., Malagodi M., Licchelli M., Re A., Lo Giudice A., Lanzafame G. N., Zanini F., Iwanicka M., Targowski P., Gulmini M. (2019). A micro-tomographic insight into the coating systems of historical bowed string instruments. COATINGS, vol. 9, ISSN: 2079-6412, doi: 10.3390/coatings9020081
17. Di Martino D., Perelli Cippo E., Kockelmann W., Scherillo A., Minniti T., LORENZI, ROBERTA MARIA, Malagodi M., MERLO, CURZIO, Rovetta T., Fichera G. V., Albano M., Kasztovszky Z., Harsanyi I., Gorini G. (2019). A multidisciplinary non-destructive study of historical pipe organ fragments. MATERIALS CHARACTERIZATION, vol. 148, p. 317-322, ISSN: 1044-5803, doi:

10.1016/j.matchar.2018.12.028
18. Weththimuni M. L., Capsoni D., Malagodi M., Licchelli M. (2019). Improving wood resistance to decay by nanostructured ZnO-based treatments. JOURNAL OF NANOMATERIALS, vol. 2019, p. 1-11, ISSN: 1687-4110, doi: 10.1155/2019/6715756
19. Rovetta T., Invernizzi C., Fiocco G., Albano M., Licchelli M., Gulmini M., Alf G., Fabbri D., Rombola A. G., Malagodi M. (2019). The case of Antonio Stradivari 1718 ex-San Lorenzo violin: History, restorations and conservation perspectives. JOURNAL OF ARCHAEOLOGICAL SCIENCE: REPORTS, vol. 23, p. 443-450, ISSN: 2352-409X, doi: 10.1016/j.jasrep.2018.11.010
20. Maurizio Licchelli, Marco Malagodi, Claudia Invernizzi, Giusj Valentina Fichera (2018). A non-invasive stratigraphic study by reflection FT-IR spectroscopy and UV-induced fluorescence technique: The case of historical violins. MICROCHEMICAL JOURNAL, vol. 138, p. 273-281, ISSN: 0026-265X, doi: 10.1016/j.microc.2018.01.021
21. Fiocco G., Rovetta T., Gulmini M., Piccirillo A., CANEVARI, CLAUDIO, Licchelli M., Malagodi M. (2018). Approaches for detecting madder lake in multi-layered coating systems of historical bowed string instruments. COATINGS, vol. 8, ISSN: 2079-6412, doi: 10.3390/coatings8050171
22. Weththimuni M. L., Licchelli M., Malagodi M., Rovella N., La Russa M. (2018). Consolidation of bio-calcarenite stone by treatment based on diammonium hydrogenphosphate and calcium hydroxide nanoparticles. MEASUREMENT, vol. 127, p. 396-405, ISSN: 0263-2241, doi: 10.1016/j.measurement.2018.06.007
23. Fichera, GV, Rovetta, T, Fiocco, G, Alberti, G, Invernizzi, C, Licchelli, M, Malagodi, M (2018). Elemental analysis as statistical preliminary study of historical musical instruments. MICROCHEMICAL JOURNAL, vol. 137, p. 309-317, ISSN: 0026-265X, doi: 10.1016/j.microc.2017.11.004
24. Invernizzi C., Rovetta T., Licchelli M., Malagodi M. (2018). Mid and near-infrared reflection spectral database of natural organic materials in the cultural heritage field. INTERNATIONAL JOURNAL OF ANALYTICAL CHEMISTRY, vol. 2018, ISSN: 1687-8760, doi: 10.1155/2018/7823248
25. Crupi V., Fazio B., Fiocco G., Galli G., La Russa M. F., Licchelli M., Majolino D., Malagodi M., Ricca M., Ruffolo S. A., Venuti V. (2018). Multi-analytical study of Roman frescoes from Villa dei Quintili (Rome, Italy). JOURNAL OF ARCHAEOLOGICAL SCIENCE: REPORTS, vol. 21, p. 422-432, ISSN: 2352-409X, doi: 10.1016/j.jasrep.2018.08.028
26. Fichera G. V., Malagodi M., Cofrancesco P., Weththimuni M. L., Guglieri C., Olivi L., Ruffolo S., Licchelli M. (2018). Study of the copper effect in iron-gall inks after artificial ageing. CHEMICKÉ ZVESTI, vol. 72, p. 1905-1915, ISSN: 0366-6352, doi: 10.1007/s11696-018-0412-z
27. Fiocco G., Rovetta T., Malagodi M., Licchelli M., Gulmini M., Lanzafame G., Zanini F., Lo Giudice A., Re A. (2018). Synchrotron radiation micro-computed tomography for the investigation of finishing treatments in historical bowed string instruments: Issues and perspectives. THE EUROPEAN PHYSICAL JOURNAL PLUS, vol. 133, ISSN: 2190-5444, doi: 10.1140/epjp/i2018-12366-5
28. Daveri A., Malagodi M., Vagnini M. (2018). The Bone Black Pigment Identification by Noninvasive, in Situ Infrared Reflection Spectroscopy. JOURNAL OF ANALYTICAL METHODS IN CHEMISTRY, vol. 2018, ISSN: 2090-8873, doi: 10.1155/2018/6595643
29. Rovetta, T., Invernizzi, C., Licchelli, M., Cacciatori, F., Malagodi, M. (2018). The elemental composition of Stradivari's musical instruments: new results through non-invasive EDXRF analysis. X-RAY SPECTROMETRY, vol. 47, p. 159-170, ISSN: 0049-8246, doi: 10.1002/xrs.2825

30. Spinella, Alberto, MALAGODI, MARCO, Saladino, Maria Luisa, WETHTHIMUNI, MADUKA LANKANI, Caponetti, Eugenio, LICCHELLI, MAURIZIO (2017). A step forward in disclosing the secret of stradivari's varnish by NMR spectroscopy. JOURNAL OF POLYMER SCIENCE. PART A, POLYMER CHEMISTRY, vol. 55, p. 3949-3954, ISSN: 0887-624X, doi: 10.1002/pola.28
31. DONDI, PIERCARLO, LOMBARDI, LUCA, INVERNIZZI, CLAUDIA, ROVETTA, TOMMASO, MALAGODI, MARCO, LICCHELLI, MAURIZIO (2017). Automatic analysis of UV-induced fluorescence imagery of historical violins. ACM JOURNAL ON COMPUTING AND CULTURAL HERITAGE, vol. 10, p. 1-13, ISSN: 1556-4673, doi: 10.1145/3051472
32. Setragno, Francesco, Zanoni, Massimiliano, Antonacci, Fabio, Sarti, Augusto, MALAGODI, MARCO, ROVETTA, TOMMASO, INVERNIZZI, CLAUDIA (2017). Feature-based analysis of the impact of ground coat and varnish on violin tone qualities. ACTA ACUSTICA UNITED WITH ACUSTICA, vol. 103, p. 80-93, ISSN: 1610-1928, doi: 10.3813/AAA.919035
33. Alberti, R., Crupi, V., Frontoni, R., Galli, G., La Russa, M. F., LICCHELLI, MAURIZIO, Majolino, D., MALAGODI, MARCO, Rossi, B., Ruffolo, S. A., Venuti, V. (2017). Handheld XRF and Raman equipment for the in situ investigation of Roman finds in the Villa dei Quintili (Rome, Italy). JOURNAL OF ANALYTICAL ATOMIC SPECTROMETRY, vol. 32, p. 117-129, ISSN: 0267-9477, doi: 10.1039/c6ja00249h
34. GIROMETTA, CAROLINA ELENA, ZEFFIRO, ALBERTO, MALAGODI, MARCO, SAVINO, ELENA, DORIA, ENRICO, NIELSEN, ERIK, BUTTAFAVA, ARMANDO, DONDI, DANIELE (2017). Pretreatment of alfalfa stems by wood decay fungus Perenniporia meridionalis improves cellulose degradation and minimizes the use of chemicals. CELLULOSE, vol. 24, p. 3803-3813, ISSN: 0969-0239, doi: 10.1007/s10570-017-1395-6
35. Fiocco, Giacomo, Rovetta, Tommaso, Gulmini, Monica, Piccirillo, Anna, Licchelli, Maurizio, Malagodi, Marco (2017). Spectroscopic Analysis to Characterize Finishing Treatments of Ancient Bowed String Instruments. APPLIED SPECTROSCOPY, vol. 71, p. 2477-2487, ISSN: 0003-7028, doi: 10.1177/0003702817715622
36. Invernizzi, C., Daveri, A., Vagnini, M., Malagodi, M. (2017), Non-invasive identification of organic materials in historical stringed musical instruments by reflection infrared spectroscopy: a methodological approach, Analytical and Bioanalytical Chemistry, 409 (13), 3281-3288, doi: 10.1007/s00216-017-0296-8
37. Albano, M., Fichera, G.V., Rovetta, T., Guida, G., Licchelli, M., Merlo, C., Cofrancesco, P., Milanese, C., Malagodi M. (2017), Microstructural investigations on historical organ pipes, Journal of Materials Science, 52 (16), 9859–9871, doi:10.1007/s10853-017-1134-2
38. Alberti, R., Crupi, V., Frontoni, R., Galli, G., La Russa, M. F., Licchelli, M., Majolino, D., Malagodi, M., Rossi, B., Ruffolo, S. A., Venuti, V. (2016), Handheld XRF and Raman equipments for the in situ investigation of Roman finds in Villa dei Quintili (Rome, Italy), Journal of Analytical Atomic Spectrometry, Accepted Manuscript. doi 10.1039/C6JA00249H
39. Weththimuni, M. L., Canevari C., Legnani A., Licchelli M., Malagodi M., Ricca M., Zeffiro A., (2016), Experimental characterization of oil-colophony varnishes: a preliminary study, International Journal of Conservation Science, 7, 2, 813-826. Indexed by Elsevier Scopus ISSN 2067-533X
40. Setragno, F., Zanoni, M., Antonacci, F., Sarti, A., Malagodi, M., Rovetta, T., Invernizzi. C., (2016), Feature-Based Analysis of the Impact of Ground Coat and Varnish on Violin Tone Qualities, Acta Acustica united with Acustica, in Press, 103
41. Dondi, P., Lombardi, L., Malagodi, M., Licchelli, M., (2016) Automatic identification of varnish wear on historical instruments: the case of Antonio Stradivari violins, Journal Cultural

Heritage, 22, 968-973, doi.org/10.1016/j.culher.2016.05.010.

42. Fichera, G.V., Dondi, P., Licchelli, M., Lombardi, L., Ridolfi, S., Malagodi, M., (2016), A combined approach for the attribution of handwriting: the case of Antonio Stradivari's manuscripts, Applied Physics A, 122, pp 970. doi 10.1007/s00339-016-0497-6
43. Invernizzi, C., Daveri, A., Rovetta, T., Vagnini, M., Licchelli, M., Cacciatori, F., Malagodi, M. (2016), A multi-analytical non-invasive approach to violin materials: The case of Antonio Stradivari "Hellier" (1679), Microchemical Journal, 124, pp. 743-750. doi 10.1016/j.microc.2015.10.016
44. Canevari, C., Delorenzi, M., Invernizzi, C., Licchelli, M., Malagodi, M., Rovetta, T., Weththimuni, M. (2016), Chemical characterization of wood samples colored with iron inks: insights into the ancient techniques of wood coloring, Wood Science and Technology, 50 (5), 1057-1070, doi:10.1007/s00226-016-0832-2
45. Barca, D., Basso, E., Bersani, D., Galli, G., Invernizzi, C., La Russa, M.F., Lottici, P.P., Malagodi, M., Ruffolo, S.A. (2016), Vitreous tesserae from the calidarium mosaics of the Villa dei Quintili, Rome. Chemical composition and production technology, Microchemical Journal, 124, pp. 726-735, doi 10.1016/j.microc.2015.10.037
46. Dondi, P., Lombardi, L., Malagodi, M., Licchelli, M., Cacciatori, F. (2016), Color-based automatic detection of worn out varnishes on Stradivari's "Scotland University" violin back plate, Color Research and Application, 41 (3), 313-316, doi 10.1002/col.22012
47. Dondi, D., Zeffiro, A., Nola, P., Facchini, A., Arcioni, P., Malagodi, M., Licchelli, M., Nielsen, E., Buttafava, A., (2015), Structural modification of alfalfa stems during hot water and enzymatic hydrolysis for sugar production, Cellulose, 22 (3), pp. 1853-1860, doi 10.1007/s10570-015-0580-8
48. Dondi, P., Lombardi, L., Malagodi, M., Licchelli, M., Rovetta, T., Invernizzi, C. (2015), An interactive tool for speed up the analysis of UV images of Stradivari violins, Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 9281, pp. 103-110, doi 10.1007/978-3-319-23222-5_13
49. Dondi, P., Invernizzi, C., Licchelli, M., Lombardi, L., Malagodi, M., Rovetta, T. (2015), Semi-automatic system for UV images analysis of historical musical instruments, SPIE - The International Society for Optical Engineering, 9527, art. no. 95270H, doi 10.1117/12.2184744
50. Crupi, V., Galli, G., La Russa, M.F., Longo, F., Maisano, G., Majolino, D., Malagodi, M., Pezzino, A., Ricca, M., Rossi, B., Ruffolo, S.A., Venuti, V. (2015), Multi-technique investigation of Roman decorated plasters from Villa dei Quintili (Rome, Italy), Applied Surface Science, 349, pp. 924-930, doi 10.1016/j.apsusc.2015.05.074
51. Belfiore, C.M., Ricca, M., La Russa, M.F., Ruffolo, S.A., Galli, G., Barca, D., Malagodi, M., Vallefuoco, M., Sprovieri, M., Pezzino, A., (2015), Provenance study of building and statuary marbles from the Roman archaeological site of "Villa dei Quintili" (Rome, Italy), Italian Journal of Geosciences 135 (2), doi 10.3301/IJG.2015.19
52. Rovetta, T., Canevari, C., Festa, L., Licchelli, M., Prati, S., Malagodi, M. (2014), The golden age of the Neapolitan lutherie (1750–1800): new insights on the varnishes and decorations of ten historic mandolins, Applied Physics A, 118, 7-16 doi 10.1007/s00339-014-8882-5
53. Bonizzoni, L., Canevari, C., Galli, A., Gargano, M., Ludwig, N., Malagodi, M., Rovetta, T. (2014), A multidisciplinary materials characterization of a Joannes Marcus viol (16th century), Heritage Science, 2-15 doi:10.1186/2050-7445-2-15
54. Malagodi, M., Rovetta, T., Licchelli, M. (2014), Study of materials and techniques in painted ceiling panels from a palace in Cremona (Italy, 15 th century) Heritage Science 2 (1), 9

doi:10.1186/2050-7445-2-9
55. Licchelli, M., Malagodi, M., Weththimuni, M., Zanchi, C. (2014), Anti-graffiti nanocomposite materials for surface protection of a very porous stone, Applied Physics A, 1-15 doi 10.1007/s00339-014-8356-9
56. Basso E., Invernizzi C., Malagodi M., La Russa M. F., Bersani D., Lottici P.P. (2014), Characterization of colorants and opacifiers in Roman glass mosaic tesserae through spectroscopic and spectrometric techniques, Journal of Raman Spectroscopy, 45, 238-245 doi 10.1002/jrs.4449
57. Licchelli M., Malagodi M., Weththimuni M.L., Zanchi C. (2013). Nanoparticles for conservation of bio-calcarenite stone. Applied Physics A, doi 10.1007/s00339-013-7973-z
58. Malagodi M., Canevari C., Bonizzoni L., Galli A., Maspero F., Martini M. (2013). A multi-technique chemical characterization of a Stradivari decorated violin top plate. Applied Physics A, 112, 225-234 doi 10.1007/s00339-013-7792-2
59. Licchelli M., Malagodi M., Weththimuni M.L., Zanchi C. (2013). Water-repellent properties of fluoroelastomers on a very porous stone: effect of the application procedure. Progress in Organic Coatings, 76, 495-503 doi 10.1016/j.porgcoat.2012.11.005
60. Licchelli M., Malagodi M., Weththimuni M.L., Somaini M., Zanchi C. (2012). Surface treatments of wood by chemically modified shellac. Surface Engineering, 29, 121-127 doi 10.1179/1743294412Y.0000000069
61. Malagodi M., Basso E., Avagliano R., Licchelli M. (2012). Surface coating on Bertesi's wooden bas relief (17th century). Surface Engineering, 29, 107-113 doi 10.1179/1743294412Y.000000006
62. Simone C., Martini M., Bortolotto S., Guidi G., Malagodi M., Mazzilli M.T., Morandotti M.,Haus G., Tucci P., (2012). The TIVAL project: Integrating multidisciplinary perspectives. 491- 498 doi 10.1109/VSMM.2012.6365963
63. Clausi, M., Crisci, G.M., La Russa, M.F., Malagodi, M., Palermo, A., Ruffolo, S.A. (2011) Protective action against fungal growth of two consolidating products applied to wood. Journal of Cultural Heritage, 12, 28–33 doi 10.1016/j.culher.2010.06.002
64. Miriello D., Malagodi M., Ruffolo S. A., La Russa M. F., Crisci G. M., Pezzino A., Galluccio R., Barca D., Marasco E. (2010). Diagnostics, deterioration and provenance of stone materials from the Jefferson Page tomb (Non-Catholic Cemetery of Rome, Italy)". Environmental Earth Sciences, 60 (4), 829-836 doi 10.1007/s12665-009-0220-4
65. Ruffolo S.A, La Russa M.F, Malagodi M., Rossi Oliviero C., Palermo A.M., Schiavelli T. (2010). ZnO and ZnTiO3 nanopowders for antimicrobial stone coating, Applied Physics A: Materials Science&Processing, 100(3), 829-834 doi 10.1007/s00339-010-5658-4
66. La Russa M.F., Ruffolo S.A., Malagodi M., Barca D., Cirrincione R., Pezzino A, Barone G., Crisci G.M., Mazzoleni P., Miriello D. (2010). Petrographic, biological and chemical techniques used to characterize two tombs in the Protestant Cemetery of Rome (Italy), Applied Physics A: Materials Science&Processing, 100(3), 865-872 doi 10.1007/s00339-010- 5662-8
67. Crisci G.M., La Russa M.F., Macchione M., Malagodi M., Palermo A.M., Ruffolo S.A. (2010). Study of archaeological underwater finds: deterioration and conservation, Applied Physics A: Materials Science&Processing, 100(3), 855-863 doi 10.1007/s00339-010-5661-9
68. Crisci G.M., La Russa M.F., Malagodi M., Ruffolo S.A. (2010). Consolidating Properties Of Regalrez 1126 And Paraloid B72 Applied To Wood, Journal of Cultural Heritage, 11(3), 304-308 doi 10.1016/j.culher.2009.12.001
69. Crisci G.M., La Russa M.F., Malagodi M., Mariani F., Mazzoleni P., Pezzino A., Ruffolo S.A.

(2009). Study of alteration and degradation products of a Roman marble sarcophagus located in the medieval cloister of the old St Cosimato's Convent, now the new "Regina Margherita Hospital" (Rome), Conservation Science in Cultural Heritage, 9, 143-156 doi 10.6092/issn.1973-9494/174

Attendance to more of 80 Congress and workshop with abstract and proceeding publications.

Pavia, 15/02/2023

Marco Malagodi