

Program & Abstracts



5th International Meeting on Retouching of Cultural Heritage

18 - 19 OCTOBER 2019
Urbino · Italy

<http://rechgroup.pt/rech5.html>

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EDITION

Front page photo:	Francesca Tonini
Photos of Oral abstracts and Posters Abstracts :	Leonardo Severini
Editors:	Ana Bailão & Sandra Sústic

WELCOME



Dear Congress Participant, Dear RECH member,

This congress, now in its fifth edition, is an important event where people working with chromatic reintegration can meet face-to-face, and discuss, socialize and feel the pulse of the retouching world.

People have backgrounds in research about criteria's, techniques and retouching practices. The core of the congress program are the scientific presentations and posters, but aspects about documentation, distinctive and mimetic retouching can also be seen in the “demo corner” in the second day of conference.

Speakers include professional conservators and students, working on private or in academic institutions. They come from different countries, and have different backgrounds about criteria, techniques and retouching practices. Issues about retouching a mural painting, or a metal artefact, an artwork on paper, an easel paintings, a tile, a clothes backpack, a polychrome stone, among others, are present.

Diversity is the keyword for this event, but everyone is linked by passion for research, comparison and sharing of results. The congress is hosted by the School of Conservation and Restoration of the historic University of Urbino (founded in 1506), and takes place in the so-called Blue Room of Palazzo Battiferri. The Battiferri building is a significant example of the inclusion of a contemporary architecture in an ancient surrounding, restructured in the 90's by the Genoese architect Giancarlo De Carlo on commission from Carlo Bo, former rector of the University.

We do hope you also will find time to enjoy beautiful Urbino, and maybe other parts of Italy while you are here. The city of Urbino is a walled town in the Marche region of Italy, 35 km far from Pesaro, a coastal city on the Adriatic Sea. The city – a World Heritage Site – is located in a predominantly hilly area, in the southern area of Montefeltro, at the foothills of the Apennines. The most famous member of the Montefeltro family, Federico da Montefeltro, ruled as Duke of Urbino from 1444 to 1482. A very successful warlord, a skillful diplomat and an enthusiastic patron of art and literature, he began a restructuring of the city according to a modern conception - comfortable, efficient and beautiful.

In the second half of the 15th Urbino hosted – among the others – the painter and mathematician Piero della Francesca, the mathematician friar Luca Pacioli, Paolo of Middelburg doctor, astrologer, mathematician, and future bishop, the architects Luciano Laurana and Francesco di Giorgio Martini. This very original mix interweaves mathematics with the proportions of perspective, with the symbolic value of geometric figures, first of all polyhedra, with the spatial relationships between architectural volumes, with the celestial harmonies of astronomy and astrology, then inextricably linked. Today, as then, art and science find themselves in this prestigious venue, coexist in two days of intense work, and confront each other on the topic of retouching. Innovative proposals, based on historicized knowledge are compared in scientific terms in the world of current restoration.

The congress would not be possible without your active participation and – of course – the economic support of sponsors.

Thank you very much!

Good to see you in Urbino!

On behalf of the congress organizers and the RECH Group
Ana Bailão and Francesca Tonini

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GALA DINNER

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Collegio Raffaello building

- Piazza della Repubblica, 13



RESTAURANTS

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Nearby Palazzo Battiferri (Conference Place)

- Via Saffia 42



PROGRAM

18th October

08:00-9:30

RECEPTION

9:30-10:00

OPENNING

Moderator: Ana Bidarra

10:00-10:20

The transformation of Adriaen Thomasz. Key's Portrait of William of Orange
Carol Pottasch

10:20-10:40

Overpaints and Inpainting on "The Black Flag" by Ljubo Babić
Maja Sučević Miklin

10:40-11:00

Laugh at ourselves: Decision making on paper infills and reintegration of three rare 20th century portuguese humorous maps
Leonor da Costa Pereira Loureiro

11:00-11:20

DISCUSSION

11:20-11:40

COFFE-BREAK

11:40-12:00

Red Jacket and Queen Hermione: two figureheads saved from wreckage on the shores of Madeira Island
Elsa Murta, Sofia Trindade, Alexandre Filipe Fernandes, Michèle Portela, Inês Gomes, Ana Machado, Lília Esteves, Luís Piorro

12:00-12:20

Retouching matt contemporary paint layers. A new approach using natural polymers
Paola Carnazza, Serena Francone, Philip Kron Morelli, Maria Pia Sammartino

12:20-12:40

Filling/retouching of losses in a portuguese army model 1859 clothes backpack
André Filipe de Nunes Fernandes, Ana Bailão

12:40-13:00

DISCUSSION

13:00-15:00

LUNCH

Moderator: Leonor Loureiro

15:00-15:20

Intervention for the preservation and retouching of 18th century outdoor tiles at the Grijó Monastery: definition of the criteria of reintegration, techniques, and management of the expectations of return of the painting reading.
Sara Botelho de Araújo

15:20-15:40

Preserving the interpretation of the azulejos of Saint Fancis church, Leiria (Portugal): Criteria and limits
Margarida Filipe da Silva, Rute Fernandes, Ricardo Triães

15:40-16:00

Selecting materials for outdoor retouching of glazed ceramic tiles – Two case-studies
Ana Bidarra, Pedro Antunes

16:00-16:20

Xpectraltek

16:20-16:40

DISCUSSION

16:40-18:30

POSTER SESSION

Moderator: Ivana Svedružić Šeparović

- 08:00-08:20** "Grisaille reconstitution" as a colourless visible retouching method: the case of Les Puys d'Amiens, a set of paintings dating from the beginning of 16th century
Séverine Francoise, Laurence Mugniot, Frederic Pellas
- 08:20-08:40** A New Aesthetic Proposal For The Men-At-Arms By Donato Bramante. Conservation History, Methodological Approach And Technical Solutions
Michela Cardinali, Alessandro Gatti, Marie Claire Canepa, Cristina Quattrini, Marianna Ferrero
- 08:40-09:00** Dealing With Dramatic Losses: Recovery Of A War-Damaged Painting "Our Lady Of The Rosary" From Vrlika
Sandra Šustić, Ivan Režić, Mario Cvetković
- 09:00-09:20** Aesthetical presentation of a devotional artwork: Problematics and possible virtual solutions
Irene Montagnolo, Marco Bacci, Laura Baratin, Giovanni Checcucci, Maria Rita Ciardi
- 09:20-09:40** The use of a virtual image as a step to aesthetic presentation of an overpainted baroque painting
Ana Sterle; Lucija Močnik Ramovš
- 09:40-10:00** DISCUSSION
- 10:00-10:20** COFFE-BREAK
- Moderator:** Frederico Henriques
- 10:20-10:40** Digital retouching and reconstruction of the medieval vault paintings of the Zuiderkerk
Antje Verstraten, Megan Kisters, Luc Megens, Sanne Berbers
- 10:40-11:00** Documentation: One Artist, Two Paintings, Different Solutions
Liliana Cardeira, Ana Bailão, Frederico Henriques
- 11:20-11:40** The retouch of a canvas painting in a bad state of conservation, guided by the semi-automatic extraction of the lacunae area and the digital color analysis for virtual reintegration proposals
Amura Annamaria, Landi Luisa, Pisani Luigi, Soro Maria Veronica, Zantedeschi Giorgia
- 11:40-12:00** 'Retouching' IR images: an innovative method for improving IR imaging with Matlab for underprintings recovery
Silvia Bottura Scardina, Catarina Miguel, Filipe Themudo Barata, Alice Nogueira Alves
- 12:00-12:20** Restoration and virtual reconstruction of Lucanian painting
Ferrucci Fabiano, Maria Rita Ciardi, Amura Annamaria
- 12:20-12:40** Reproduction of decorative elements in a 18th century frame: 3D modeling, 3D printing and matching colour
Frederico Henriques, Ana Bailão, João Rocha e João Costa
- 12:40-13:00** DISCUSSION
- 13:00-15:00** LUNCH

Moderator: Francesca Tonini

15:00-15:20 **The case of Capogrossi in Rome: Criteria and limits in the retouching process of a contemporary mural painting**
Paola Mezzadri, Giancarlo Sidoti, Maria Carolina Gaetani

15:20-15:40 **The retouching in Maria Lai's outdoor artworks: documenting Ulassai's open-air museum.**
Rita Salis

15:40-16:00 **Retouching unvarnished acrylic emulsion paintings: a comparison of five suitable retouching media**
Clémence Jacqmin

16:00 – 16:20 **DISCUSSION**
ANNOUCEMENT OF RECH6

16:20 – 18:00 **DEMONSTRATIONS**

18th October

POSTER SESSION

- | | |
|------|---|
| I | Retouching and Surroundings. Tips and tricks for conservation students
Francesca Tonini |
| II | The reintegration of a wooden polychrome crucifix: issues, approaches and materials selection
Flavia Sorace, Marco Bacci |
| III | Polychromy on 15th century stone relief from Dubrovnik: Technical study vs. Cennino Cennini's recipe
Jure Balić, Martin Zohil, Vinko Lipanović, Ema Bonomi, Vinka Marinković, Sandra Šustić |
| IV | Restoring the sight of a polychromed wood sculpture - ethical and practical challenges
Bruna Silva Pereira, Ana Rita Esperança, Ana Bailão, Ana Bidarra, Teresa Desterro |
| V | Light up your retouch! How to fight metamerism in contemporary art retouching.
Serena Francone |
| VI | Retouching a PVC sculpture – challenges of white
Sara Russo, Simone Caglio, Tommaso Poli, Bruna Mariani, Isabella Villafranca-Soissons |
| VII | Approach to retouching of one damaged religious painting
Ruta Kasiulyte |
| VIII | Study of losses and creation of a work methodology for the chromatic reintegration of canvas from the faculty of fine arts of the university of Lisbon
Beatriz Domenech, Ana Bailão |
| IX | Chromatic reintegration in contemporary monochromatic non-varnished paintings
Marta Aleixo, Ana Bailão, Andreia E. Gomes, João Linhares, Margarita San Andrés, Sérgio Nascimento |
| X | Strategy to describe the mixing of colours used during the retouching process
Ana Bailão |
| XI | Wax and varnishes on the painting “Portrait of a women”
Maja Reberski |
| XII | Chromatic reintegration on mural paintings at the light of conservation-restoration criteria of the 21st century: The case study of São Martinho do Peso (Bragança-Portugal)
Alexandra Marco, Mariana Joana Lopes, Joaquim Inácio Caetano, Patrícia R. Moreira, |

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Oral abstracts

THE TRANSFORMATION OF ADRIAEN THOMASZ. KEY'S PORTRAIT OF WILLIAM OF ORANGE

Carol Pottasch

Royal Picture Gallery Mauritshuis, Plein 29, 2511 CS Den Haag; c.pottasch@mauritshuis.nl

Abstract

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A portrait of William of Orange by Adriaen Thomasz. Key (Antwerp, ca. 1545 - Antwerp ca. 1589) from the collection of the Mauritshuis was recently treated in the Conservation Department. The portrait is an important painting as it is likely the prototype for other portraits of William of Orange. [1] The panel (48 x 34 cm) appeared structurally sound, but varnish and overpaint removal was necessary for aesthetic reasons; a very discoloured and cracked varnish layer and countless discoloured retouches disfigured the painting. The main question addressed in the paper is related to the retouching and partial reconstruction of the painting based on other versions of the portrait.

The technical examination revealed many retouchings along an old crack running through the face, and showed that the entire background and a large part of the fur collar had been overpainted. X-radiography revealed that the structure and paint composition of the two planks differed. Cross-sections confirmed that the narrow left plank (8 cm wide) was not original; instead of a chalk-glue ground in keeping with the sixteenth century (as found on the rest of the panel), an oil-containing ground layer was found. As no mention was made of the application or replacement of a plank in files in the Mauritshuis Conservation Department since 1841, this intervention must have occurred before that time. [2]

During the recent varnish removal it proved impossible to leave the medium-rich resin-containing overpaint intact. The decision to remove all layers of the historic treatment was not made lightly. After removal of most non-original material, the remaining original paint in the face appeared to be in a good condition, but the background and coat were very abraded and the left (non-original) plank was almost bare.

The different possibilities for retouching will be discussed. How “far” should the conservator go in retouching and reconstructing the damaged parts of this important painting? What approach(es) should be used? Should one consider that the Mauritshuis painting was likely the prototype for other portraits of William of Orange? After examining Key’s painting technique closely ultimately an illusionistic approach was used and the decision was made to reintegrate the left plank into the composition, by reconstructing the missing part based on the other versions. [3] In this case the reversible loss compensation – done using layers of gouache and Mowilith 20 – amounts to more than 25% of the painting’s surface. The ethical implications of the decisions made in every step of this treatment are considered in this paper.

Keywords

Conservation theory; Gouache; Mowilith20; creative process; portrait; ethics

References

- [1] JONCHEERE, Koenraad - *Adriaen Thomasz. Key (c. 1545-c. 1589), Portrait of a Calvinist Painter*, Turnhout, Brepols N.V., 2007, pp. 101-102, 113. [MA Thesis, Paintings Conservation, Conservation & Restoration, University of Amsterdam](#)
- [2] MILLEGEN van, Anna - *Adriaen Thomasz. Key: portrettist van Willem van Oranje Drie versies van het Portret van Willem van Oranje vergeleken*, Den Haag, 2009.
- [3] Digney-Peer, Shawn; Thomas, Karen; Perry, Roy; Townsend, Joyce; Gritt, Stephen – *The imitative retouching of easel paintings*. In Hill Stoner, Joyce; Rushfield, Rebecca, ed. – *Conservation of Easel Paintings*, London and New York, 2012, pp. 607- 611.

Biography



Carol Pottasch is a paintings conservator and art historian. She holds BA and MA degrees in Art History from the University of Groningen, specializing on technical aspects of Lucas Cranach's painting. Currently she holds the position of Sr. Paintings Conservator at the Mauritshuis. She has examined, treated and published on paintings by Frans van Mieris, Adriaan Coorte and Rembrandt. At the moment she is working on the treatment and technical research project of the painting technique of Rogier van der Weyden's Lamentation in the collection of the Mauritshuis.

OVERPAINTS AND INPAINTING ON “THE BLACK FLAG” BY LJUBO BABIĆ

Maja Sučević Miklin

External Associate at Department of Conservation and Restoration of Art, Zamenhofova 14, Zagreb
maja.sucevicmiklin@gmail.com

Abstract

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This paper will present the conservation-restoration process done on the painting called “The black flag”, one of the important paintings in the Croatian modern art history from the author Ljubo Babić. It represents the day when the emperor Francis Joseph died. In the forefront is a large black flag with clouds and people walking in the distance. It is done in oil paint on a wooden panel in a manner typical to Babić's style of painting. (1)

The results of the restoration research determined that the painting was not just retouched (visible discoloured paint brushes strokes in daylight and UV light) but the probes of cleaning determined that this retouches were adjusted to the surface of paintings which was not the original but the overpaint. Almost the whole surface of the painting was heavily overpainted. There were no official records or documentation of the interventions but as the previous owner was the famous Croatian painter Josip Vaništa it was thought that the changes were made by Vaništa himself.

Overpainting followed the original image and covered the parts that were not damaged; it was done in dull colours (comparing to the original) applied in thick layer that was hard to notice in UV light because of all the subsequent coatings and varnishes. The emphasis will be on this kind of “mending” the painted layer by overpainting the whole surface even on the parts that were in good state which was very popular in past; different kind of examples of that kind of overpainting will be presented and discussed. (2, 3)

The cleaning of the overpaint was done carefully with solvents and scalpel but in texture of the surface of painting layer (especially lighter parts) and preparatory layer remained particles of dirt. State like this of the original paint determined the way of reconstruction of the painted layer and knowing the author's style of painting (the author treated the surface with diluted paint that enhanced the texture of the preparatory layer with impasto layers) was the key to inpainting process.

The first step of the inpainting was made in gouache. The painting was then varnished and the rest of the inpainting was done with paint that combines Canada balsam and pigments grained and mixed by hand adding varnish where it was needed; the process of inpainting will be presented step by step.

Keywords : *Overpainting; Inpainting; Canada balsam; Pigments*

References

- (1) Ljubo Babić : Retrospektiva 1905-1969, Moderna galerija, Zagreb, 1976.
- (2) TAFT, JR., W.Stanley; MAYER, James W. – *The science of paintings*. New York, 2001, pp. 15, 16, 40, 86-95.
- (3) BOMFORD, David - *Conservation of paintings*. London, 1997, pp. 48-71

Biography



Maja Sučević Miklin Since 2012 she has been working as external associate in the Croatian Conservation Institute (Department for Polychrome Wooden Sculpture and Department for Easel Painting) and as external associate at Department of Conservation and Restoration of Works of Art in Zagreb. She specialized in paintings on different supports and polychrome wooden sculpture. In 2014 she became a secretary of the Croatian Conservation-Restoration Association.

LAUGH AT OURSELVES: DECISION MAKING ON PAPER INFILLS AND REINTEGRATION OF THREE RARE 20TH CENTURY PORTUGUESE HUMOROUS MAPS

Leonor Loureiro

Private, leonorloureiro@gmail.com

ABSTRACT

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Portuguese 20th century humorous maps intended to describe a point of view on Europe and the World of that time. Their importance resides in rarity (11 examples known), and how concepts were conveyed, portraying countries as anthropomorphic animals while displaying layers of political messages in consonance with Portuguese Regime and censorship ideas of that time.

Albeit with a print run limited to a few thousand, so restraining awareness of their historical existence and information, in the past ten years three surviving and privately-owned examples were restored at IPT's Paper Conservation Laboratory. With differently author's designs – De Lagrange, Cesar Abbott, and Star – and production periods – 1916, 1941, and 1953 – they show different paper supports. Lack of proper raw materials resulted in use and reuse of all sort of fibres, creating a thinner and poorer quality sheet, further prone to photooxidation, foxing and other staining. Additionally, the three objects were folded several times due to their large dimensions, so damages due to tears, handling and lack of suitable housing were also evident.

Answers to critical questions as how to properly fill in lacunae with suitable papers that enabled design and colours reproduction needed to be addressed. Choosing a proper Japanese paper infill is the key to a perfect final chromatic reintegration and allows ease of watercolour application, colour homogeneity, and colour control penetration into paper (thus avoiding staining and bleeding), swiftly aiding the retouching process and preventing any action repetition. Intervention options focused on testing several available Japanese papers – Spider Tissue, Tengujo, Tengujo Kashmir, Kinugawa Ivory, Kitakata, and two Mulberry. Their typologies (handmade or machine made) and characteristics were explored either in single or in mixed double layers. Comparisons were made regarding adequacy towards compatibility to each original paper: texture, opacity, transparency, thickness, colour, tear strength, fibre length and homogeneity, glue absorbency, and ease of conservation work were accessed by visual and microscopy observation. Whenever possible, the lost printed design was reconstructed with watercolours. The overall purpose is a guide to any conservator-restorer onto the process. The achieved results confirmed that it is preferable to use a minimum of paper layers as possible, so to prevent distortions and stiffness. Depending on the original, Spider Tissue and Tengujo Kashmir were the papers preferred for consolidation, and Kinugawa Ivory or Kitakata previously toned papers for lacunae infill and ease on chromatic reintegration and shorten an expensive and time-consuming restoration operation. All combined resulted in a very satisfactory blending effect with the original papers and in consonance with current conservation trends.

KEYWORDS: *Satirical maps; Serio-Comic maps; Persuasive cartography; Paper conservation; Japanese paper; Schmincke watercolour.*

REFERENCES

- [1] BAYNTON-WILLIAMS, Ashley – *The Curious Map Book*. London: The British Library. Chicago: University of Chicago Press, 2015.
- [2] BRYARS, Tim, and HARPER, Tom – *A history of the 20th century in 100 maps*. London: The British Library, 2014.
- [3] HARPER, Tom – *Satirical maps of the world*. Available at: <https://www.bl.uk/maps/articles/satirical-maps> [30-12-2018].
- [4] LOUREIRO, Leonor da Costa Pereira – "Approaches to the conservation treatment and chromatic reintegration on watercolours, charcoal drawings, and a lampshade handpainting". In *RECH4 Postprints: RECH4 4rd International Meeting on Retouching of Cultural Heritage*, Split, Croatia. Lisboa, Portugal: Ana Bailão, 2017, pp. 166-175.
- [5] POULSSON, Tina Grette. *Retouching Art on Paper*. London: Archetype Publications Ltd., 2008.
- [6] UDINA, Rita – *The Diplomatic Neutral Colour*. Available at: <http://ritaudina.com/en/2017/01/02/retouching-inpainting-paper-conservation-neutral-colour-field/> [17 January 2017].

Biography



Leonor Loureiro received a Master's degree in Arts / Paper Conservation from the University of The Arts London, UK, in 2003, with a grant from Calouste Gulbenkian Foundation. She has collaborated with several Portuguese institutions (namely José de Figueiredo Laboratory, Instituto de Investigação Científica Tropical, Convento de Cristo de Tomar, and Santa Casa da Misericórdia de Torres Vedras) and universities within Conservation-Restoration and Cultural Heritage Preservation. Recently she earned the Project TRAMA Prize with the Project DELFIM MAYA. Since 2008 she is an Assistant at the Polytechnic Institute of Tomar, Portugal, and Coordinator of IPT's Paper Conservation Laboratory.

RED JACKET AND QUEEN HERMIONE: TWO FIGUREHEADS SAVED FROM WRECKAGE ON THE SHORES OF MADEIRA ISLAND

Elsa Murta (1); Sofia Trindade (2); Alexandre Filipe Fernandes (2); Michèle Portela (1); Inês Gomes (1); Ana Machado (1); Lília Esteves (1); Luís Piorro (1)

(1) Laboratório José de Figueiredo, Rua das Janelas Verdes, 1249-018 Lisboa;

(2) Direção Regional da Cultura da Madeira/Universidade de Évora

• Corresponding author:) emurta@dgpc.pt

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Abstract

Red Jacket "and" Queen Hermione ", from the Museum of Quinta das Cruzes in Funchal, were parts of the ornamentation of two sailboats as figureheads, made of a gymnosperm wood. They have a human form of full body and full figure.

The one called "Red Jacket" represents the Indian chief Seneca. He was a prominent figure in George Washington's time by resolutely defending his tribe's interests. It is a polychrome wooden sculpture, with 209,7 cm height [1], standing in a position of wilfulness, with native robes and, overlapping, a red robe and an oval silver medal decoration of great size that he wore at all times.

The figurehead named "Queen Hermione" represents a woman, 175, 5 cm height, embodied in long robes, holds a bunch of flowers next to the chest, the right hand falls along the body and holds a pattern of music [2]. The sailboat from which it belonged is unknown. It was made of a soft wood, maybe cedar.

Both sculptures had a scientific study, biologic identification, MO stratigraphy, μ Ftir analyses, X-Ray documentation and natural and ranking light documentation.

In terms of their state of conservation, the Red Jacket sculpture presented the effects of a large termite infestation and rotten wood that almost destroyed the inner body of the sculpture. Because of the infestation, the head was hollowed of its wood structure, with many resin based fillers and paper to cover the losses. The fillers that overlapped the original form and polychrome layers, had to be removed and a big hole was formed.

The sculpture of Queen Hermione wasn't infested as the Red Jacket, but had a serious problem of resin sap that flows through holes, dragging the polychromy, leaving visible big lacunae with large gaps of resinous wood support surface.

The solutions to the problematic formal reconstructions and polychrome reintegration of lacunae of the heavily infested wood head of the Red Jacket sculpture is still ongoing. To the sculpture representing Queen Hermione, there were several solutions experimented. The solvent cleaning and isolation of the damaged lacunae with diluted acrylic resins, may stop the resin sap to flow through fissure and holes of Queen Hermione's body. This method of reintegration of lacunae, proved to be the best method with the best results. The problematic of reintegration off both sculptures will be the subject of this communication [3].

Keywords: *Colour reintegration; Filler texture; Loss of polychrome layers; Loss of support; Termite infestation.*

References

[1] Inventory sheet of Red Jacket_INV mqc 2315 /

[2] Inventory sheet of Queen Hermione_INV mqc 2316.

[3] TONINI, Francesca, *La Scultura Ligne Tecnica e Restauro, Manuale per Allievi Restauratori*. Il prato (2015), pp.189-214

Biography



Elsa Filipe de Andrade Murta, Bachelor in Conservation and Restoration of polychrome sculptures by the Instituto de José de Figueiredo in Lisbon, in 1986. Master Degree in Decorative Arts by the Catholic University of Portugal – specialization on gilded wood decoration in 2011. Currently develops a Ph.D. degree at the University of Lisbon, studying the influence of the Flemish art in the Portuguese sculpture between the 16th and 17th centuries. The professional career began in 1984, and is currently coordinator of the conservation and restoration of sculpture in polychrome wood support and tutorials curricular internship students from national and foreign Universities.

RETOUCHING MATT CONTEMPORARY PAINT LAYERS. A NEW APPROACH USING NATURAL POLYMERS.

Paola Carnazza (1); Serena Francone (2); Philip Kron Morelli (3); Maria Pia Sammartino (4)

(1) Galleria Nazionale d'Arte Moderna e Contemporanea, viale delle Belle Arti 131, 00197 Rome (Italy), paola.carnazza@beniculturali.it

(2) Conservator, viale Kennedy 2, 22070 Bregnano (Como, Italy), materiadarte@gmail.com

(3) Conservator, Via Pietro Metastasio 6, 50143 Florence (Italy), info@kronmorelli.com

(4) "La Sapienza" University, Chemistry Department, piazzale A. Moro 5, 00185 Rome (Italy), mariapia.sammartino@uniroma1.it

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ABSTRACT

Nowadays different types of painting techniques, materials and application methods that characterise contemporary artworks, with a predominantly matt surfaces and uniform tones, make retouching one of the most complicated conservation treatments to carry out, since sameness is the main target. The retouching intervention carried out at the Galleria Nazionale d'Arte Moderna e Contemporanea in Rome on *Tempi prospettici*, an installation made by the Italian artist Carlo Alfano in 1969, gave the opportunity to start investigating a method to obtain different matt/glossy values through the use of natural polymers.

The artwork is composed by two elements in formica laminate. On one of the elements there is a squared area painted in black, which had adhesion and cohesion issues. Scientific analyses highlighted the presence of nitrocellulose as a binder, silica as a matting agent and probably carbon black as a pigment. The matt appearance of this original paint is due also to the technique used by the artist, who sprayed the nitrocellulose paint on the formica laminate instead of using brush. After several tryouts, funori solution - well known for its optical characteristics and its retractability [1] - was elected as the most adapt adhesive to re-establish cohesion [2]. Due to many losses and lacunas which left uncovered the white surface of the support, retouching was eventually necessary. To obtain the right aesthetic effect in relation to the degree of light refraction of the original paint, a series of water-soluble, non-toxic, easily reversible and retractably mediums have been evaluated. Approaches compatible with funori have been prioritised [3]. Tests have been carried out on the following natural polymers: funori, wheat starch, arabic gum and sturgeon glue. Moreover, cellulose ethers were tested. All mediums were studied both individually and mixed, in consideration to their different refractive index, in order to reproduce the same values of the original artwork. The ratio of medium and pigment, and the addition of silica to get a modulation of the matt appearance has been also evaluated. All samples were investigated through colorimetric and gloss-metric measurements and the values were compared with those of the original paint. This case study is part of an ongoing project, in which the main contemporary pictorial mediums are investigated in order to develop a gradation scale of matt/glossy mediums, in which single adhesives or mixtures will provide all conservators an easily method to choose the most suitable products to undertake their retouching.

KEYWORDS: *Matt paint; Retouching; Contemporary art; Funori; Arabic gum; Sturgeon glue.*

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FILLING/RETOUCHING OF LOSSES IN A PORTUGUESE ARMY MODEL 1859 CLOTHES BACKPACK

André Filipe de Nunes Fernandes (1); Ana Bailão (1,2,3)

(1) Instituto Politécnico de Tomar, Quinta do Contador. Estrada da Serra. 2300-313, Tomar, Portugal, andre.fnf@gmail.com

(2) Faculdade de Belas-Artes, CIEBA, Largo da Academia Nacional de Belas Artes 4, 1249-058 Lisboa, Portugal, ana.bailao@gmail.com

(3) Universidade Católica Portuguesa, CITAR, Rua de Diogo Botelho, 1327, 4169-005 Porto, Portugal

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ABSTRACT

In 2016 a group of several objects was removed from the Lisbon Military Museum collection storage in order to be inventoried on the recent inventory system database. Three of these objects were backpacks which were later identified as being the model 1859 clothes backpack. According to old museum catalogues [1] these backpacks were utilized in campaign in Mozambique in 1895 and were present in the combats of Marracuene and Coolella, and in the actions of Manjacase and Chaimite.

This re-discovery aroused attention and interest to place at least one of these backpacks in permanent exhibition. These cultural objects are witnesses of past events and studying them allows us to learn more about the past; therefore, they must be preserved in order to maintain certain aspects that are true to their time. In 2017 one of these backpacks underwent a conservation and restoration treatment within a curricular unit of the Conservation and Restoration Degree of the Polytechnic Institute of Tomar, in order to be exhibited. Now, 2019, a second backpack is being treated within the C.R. Master thesis on the same institute.

This model was manufactured in leather and canvas, and the exterior has a black coating. According to period instructions the canvas parts were waxed “the same way as footwear”, and the leather parts “after being painted” were waxed “according to the 1856 instructions” [2]. An 1855 article [3] is dedicated to the introduction of the same wax mentioned in the 1856 instructions; this article gives a glimpse of the importance attributed to the appearance of the equipment, and a polished shiny surface was mandatory.

This aspect was important in the 2017 intervention. The treatment of the canvas losses and tears was deemed a necessary step in achieving the goal of treatment, as well as being important in maintaining the structural integrity of the backpack. After consolidation of the black coating, the recipe of black wax was reproduced in order to be analysed with FTIR, and ended up being used as both a filler and inpainting material for the losses, since it provided the ideal consistency, texture and colour. The final step consisted in applying a protective layer of microcrystalline wax, which was buffed with a brush in order to provide the mandatory polished surface.

On the ongoing intervention, the use of a similar method for filling/inpainting which uses stabler materials is being studied for application on the second backpack.

KEYWORDS: *Filling; Retouching; Wax; Recipe; Military equipment*

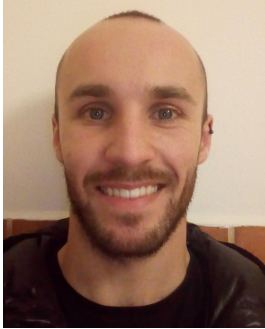
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Biography



André Fernandes: Born in 1994 in Lisbon, he graduated in Art and Heritage sciences in 2016 at the Faculty of Fine Arts of the University of Lisbon. Currently is taking a master's degree in conservation and restoration at the Polytechnic Institute of Tomar. He has dedicated his studies to leather conservation and the investigation of 19th and 20th century Portuguese military equipment, collaborating with the Military Museum of Lisbon since 2016.

INTERVENTION FOR THE PRESERVATION AND RETOUCHING OF 18TH CENTURY OUTDOOR TILES AT THE GRIJÓ MONASTERY: DEFINITION OF THE CRITERIA OF REINTEGRATION, TECHNIQUES, AND MANAGEMENT OF THE EXPECTATIONS OF RETURN OF THE PAINTING READING.

Sara Botelho de Araújo

Freelance conservator-restorer; sara.botelho.araujo@gmail.com

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ABSTRACT

The tile panels from Grijó Monastery, which can be dated between 1725 and 1750, corresponds to the period of *Joanina* grand production, it can be found placed on a exterior wall facing south and decorating a Monastery terrace. It's an assembling of high artistic quality tiles, though not signed, probably a work from the *Valentim de Almeida* workshop, and show different scenarios such as hunting scenes and the arrival of a coach. Such representations, though connected by the background landscape, don't actually represent any storyline. (1)

The intervention for the conservation and retouching of these panels has as objective to minimize the destructive effect of the degradation agents and as well as the return of the panels reading. The definition of the intervention criteria to return the panels reading implied diverse solutions both of materials and techniques. The guiding line of the intervention was the preservation of the remaining materials debating its importance and the way to do it making the most of the pre existing ones without compromising the work authenticity. (2)

The state of the panels' conservation was alarming, mainly because of the problematic of the liquid salty presence and the conditions to which the panels will continue to be exposed outdoors, which compromises the use of filler materials to the flaking gaps. (3) In order to preserve the tiles, a calcium carbonate based filler mixture was chosen to act as a sacrificial layer, such as providing a maintenance plan on these fills in order to preserve the reading of the panels. In this way, the color reintegration was done by using *al fresco* technique, so that the permeability of the mixture is not affected. (4) For this, the damages of the glaze had to be accepted, since the differentiation of finish among the materials is clear and affects the mimetics of the reintegration. By the state of conservation of the panels, it was necessary to implement a whole work of graphic and photographic documentation for the preparation of the new ceramic elements which will complete the big gaps and the losses of ceramic elements. The figurative forms off the main scenes were produced from a study of similar works and also of graphic representations of the same motifs. Although in a hypothetical scenario, and from a different tone from the originals, these new elements maximize the reading and interpretation of the original pieces (5)

KEYWORDS: *Al fresco* reintegration; Salt efflorescence; Rehabilitation; Tile recreation; Calcium carbonate filler; graphic study

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Biography



Sara Botelho de Araújo holds a degree in Conservation and Restoration(2012) from the Polytechnic Institute of Tomar and holds a master's degree in conservation and restoration of integrated heritage(2015) by the same institute with a master's thesis "The Conservation of Facade Tiles in Oporto" and was an interdisciplinary student of Master of Urban Rehabilitation. She dedicates her academic career to the study of decorative arts on buildings, but also to the structural pathologies of buildings. Since 2012 she is a freelance conservator, experiencing the contact with the built heritage, where she has already assumed the coordination of intervention in tile heritage.

PRESERVING THE INTERPRETATION OF THE TILES OF SAINT FRANCIS CHURCH, LEIRIA (PORTUGAL): CRITERIA AND LIMITS

Margarida Filipe da Silva (1); Rute Fernandes (2); Ricardo Triães (2); Ânia Chasqueira (2)

(1) Laboratório de Conservação e Restauro - Instituto Politécnico de Tomar, Quinta do Contador - Estrada da Serra, 2300-313 TOMAR (Portugal); margvafs@hotmail.com; fernandes.rute12@gmail.com

(2) Techn&Art - Technology, Restoration and Arts Enhancement Center, IPT, Quinta do Contador - Estrada da Serra, 2300-313 TOMAR (Portugal); rtriaes@ipt.pt; al.chasqueira@gmail.com

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ABSTRACT

The saint Francis church, located in the city of Leiria was a part of a Franciscan convent [1]. The convent received a great set of tiles, in the year of 1719, applied in two divisions next to “Capela dos Terceiros”. Their quality is remarkable. The tiles are defined by the light cobalt blue brush stroke decorated with bars and “silhares” typically baroque [2]. In 1963 the *tiles* were fully removed due to the bad state of conservation of the building. The set had around 3000 *tiles*, stored in the church in wood boxes. The set was divided into thirteen parts duly identified in the boxes and also in the *tiles*. They represent a total of nine panels with representations of Saint Francis and Saint Anthony’s lives. The methodology of intervention of conservation and restoration is based in the principles of the minimal intervention proposed in the international documents for the integrated heritage. The reconstitutions or chromatic reintegration was not an option, assuming that the actual state of the panels have the necessary conditions to a right interpretation of the scenes [3]. Following this assumption, we assume the relevance of leaving the marks of ageing, respecting the historicity of the panels since the moment of the removal until the salvage. In a partnership with the owner there are being studied ways of replacing the panels at the Saint Francis Church [4]. Whenever possible, we tend to maintain the original location, although this is sometimes impossible. This intervention pretends to recover the importance of the panel allowing to perpetuate their artistic and historical value.

KEYWORDS: *Tiles; Preservation; Conservation; Displaced heritage.*

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Biography



Margarida Filipe da Silva, 23 years old, born in Lisbon. In 2017 completed a degree in Conservation and Restoration specialized in architectural decoration, historical tiles, mural painting and decorative stucco (Escola Superior de Artes Decorativas – Fundação Ricardo do Espírito Santo Silva). Due to her preference, joined Tomar Polytechnic Institute for a master's degree in Conservation and Restoration in the same year, where is currently developing a curricular internship project, working with Portuguese historical tiles from the 18th century.

SELECTING MATERIALS FOR OUTDOOR RETOUCHING OF GLAZED CERAMIC TILES – TWO CASE-STUDIES

Ana Bidarra (1, 2, 3); Pedro Antunes (1)

(1) Cinábrio – Conservação e Restauro, Portugal, cinabriocr@gmail.com

(2) GeoBioTec Research Centre, Aveiro University, Portugal,

(3) Techn&Art, Tomar Polytechnic Institute, Portugal, bidarra.ana@gmail.com

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ABSTRACT

This work aims to discuss the challenges of selecting materials for outdoor retouching of glazed ceramic tiles. Facing not only ethical questions but also requests of durability, compatibility and aesthetic, it's important to find an answer that can reply to all of these solicitations. In these case-studies – a pattern ceramic tiles façade of a private house and several figurative panels from a train station - two different options were selected regarding the materials for the filling and the retouching of the glaze. In both cases the tiles were located outdoor and exposed to floatable meteorological conditions along the year with significant variations of temperature, humidity and in direct contact with rain. The interventions were performed in different times of the year. The first in the summer, where the temperature of the façade could reach more than 50°C and the other in the winter, where, in some cases, the water from the rain beaten directly in the panels making the choice of the retouching timings dependent on the weather forecast.

In the first case – the private house – the option was made on the use of commercial products that can be found in the construction industry supplier's stores. A well-known brand (Robbialac®) was chosen based on the study of the technical data and in its warranty of stability and durability. An acrylic paste was used for the fillings after the application of an acrylic film over the biscuit, in order to prevent the migration of any of the paste components to the biscuit. The retouching was then made using outdoor satin acrylic paints. In the second case – the train station tiles – the option was on the use of an epoxy resin (Milliput®) for the fillings and a non-yellowing epoxy resin (HXtal®) mixed with inorganic pigments for the retouching.

The façade was intervened in 2014, and the acrylic paste proved to be very durable, revealing no percentage of losses or risk of detaching, while the retouching suffered some losses and colour fading. The train station tiles are currently under treatment and the results are positive, although the choice of materials make the restoration process very time consuming. The retouching using the epoxy resin is very complex due to the viscosity of the material.

The study of the different materials posed as an important role for the selection of the different methods. The first was based on an empirical approach, relaying on home-made tests to check the efficiency of the materials and on the technical data sheet provided by the fabricant. The second approach was based on technical documentation provided by several studies on conservation and restoration of glass and ceramic objects. This study aims to discuss the advantages and disadvantages of each method in order to define a more accurate and efficient process for the retouching of outdoor ceramic tiles.

KEYWORDS: *Glazed ceramic tiles; Outdoor; Retouching.*

Biography



Ana Bidarra has a degree in Conservation and Restoration from the Polytechnic Institute of Tomar (Portugal), a Master in GeoSciences from the University of Aveiro and a PhD from the same University. Her research project was on the compositional and technological features of gold leaf from Portuguese baroque altarpieces. Author of several papers on conservation and on the technical study of art works. Assistant coordinator of ICOM-CC Sculpture, Polychromy and Architectural Decoration Working Group (SPAD) (2017/2020 triennium). Ana works as a conservator in private practice since 1999 and in 2013 co-founded a private conservation company (Cinábrio). Since 2018 she is also a teacher at Tomar Polytechnic Institute on Sculpture Conservation and Restoration, and Introduction to Conservation

THE RETOUCHING IN CONSERVATIVE INTERVENTION ON METAL ARCHAEOLOGICAL ARTIFACTS: REFLECTIONS AND PROPOSALS, BETWEEN THEORY AND PRACTICE.

Simona Pannuzi (1); Vilma Basilissi (1); Marta Giommi (2); Laura Rivaroli(2)

¹ISCR; simona.pannuzi@beniculturali.it; vilma.basilissi@beniculturali.it

³Free-lance

ABSTRACT

Regarding the restoration of metal artifacts from archaeological excavations, the reconstruction and chromatic treatment of the gaps determine, sometimes decisively, the correct reading of the object suggesting its original morphology and external coloring, in connection with the degraded surfaces.

However, for these types of artifacts it is particularly common to be faced with a remarkable diversity of reconstructions and integrations that can be related to conceptions usually based on opposing principles ranging from mimetic integrations to strict rigorism.

Following this second practice, widely adopted although sometimes with somewhat questionable results, the gaps should be treated by trying to keep the parts compensated "visually" by a volumetric restitution, characterized by a slight sub-level compared to the original surface of the artifact, and with a color rendering close to the original.

The study of some artifacts in iron or copper alloy, which were recently restored in ISCR, allowed a shared reflection on the criteria and methodology to be adopted for the restoration of these works. Working on these artifacts with dissimilar surfaces and textures has led to choosing the most suitable products and materials to be used to fill and retouch gaps, carry out laboratory tests to make additions and make their original appearance understandable.

With this study we hope to contribute to the definition of a conservative intervention protocol based on a correct and widely perceptive presentation of the restoration work for this type of artifacts, for their formal reconstruction and aesthetic retouching, aimed at its best fruition thanks to a critical restitution that really points to the "*return to unity*", as indicated by Cesare Brandi (1977).

KEYWORDS: *Colour reintegration; Metals; Aesthetic; Patina*

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Biography



Simona Pannuzi is graduated and specialised in Medieval Archaeology at the University of Rome “La Sapienza”. For almost twenty years has been functionary archaeologist of the Italian Ministry of Culture and she worked in the Archaeological Superintendence of Ostia. Actually in ISCR she is the Director of some researches about polychrome and gilding on the Italian and Bohemian sculptures, medieval and of the Renaissance, also with the collaboration of the Czechoslovakian University of Olomouc and the University of Rome “La Sapienza”, coordinating the research about polychrome and gilding of the Gandharan sculptures in collaboration with various partners and the research about polychrome and gilding of the altar of Orte Cathedral.

“GRISAILLE RECONSTITUTION” AS A COLOURLESS VISIBLE RETOUCHING METHOD: THE CASE OF *LES PUYS D’AMIENS*, A SET OF PAINTINGS DATING FROM THE BEGINNING OF 16TH CENTURY

Séverine Francoise; Laurence Mugniot, Frédéric Pellas

Freelance conservators of paintings, Paris, France; severine_francoise@yahoo.fr; laurence.mugniot@hotmail.fr; fredericpellas@free.fr

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ABSTRACT

Retouching large losses of ancient easel paintings is a major and re-occurring issue in conservation, with few obvious solutions. From an ethical standpoint, conservators are required to distinguish their retouching from the original art-work ^[1]. However in situations where the understanding and aesthetic contents of a painting is severely damaged, conservators are sometimes forced to choose between archeological treatment and a more interventionist retouching. This issue occurred during the conservation of the so-called “les Puys d’Amiens”, a set of paintings dated from the 16th century, created for the Amien’s cathedral. Every year a literary guild offered a painting dedicated to the Virgin Mary. As a result, the collection was painted by several unknown artists. Nowadays, these paintings are kept in the Picardie Museum (Amiens, France). From 2017 to 2019, seven of these paintings, originally on panel, were restored. Most of them were transferred on new supports, in the beginning of the XX^e century. The oldest was cut, partially trimmed and separated in two fragments. Five paintings were in a good condition whilst the other two, including one of the fragments, presented very large losses.

The restoration was assigned to a team of freelance conservators in association with the Restoration & Research Centre for French Museums (C2RMF, Paris) and under the supervision of an advisory committee composed of expert curators.

The challenge was to find a retouching solution that would enable presenting all seven paintings together, improve understanding of the damaged paintings while maintaining discernibility of the retouching. Different options were discussed ranging from neutral tone, lower tone or *tratteggio*, but all were rejected as they were judged aesthetically unsuitable for such detailed paintings, with very ornate original frames.

As a result, an experimental and discernible retouching technique allowing the reconstitution of paint losses without misleading the viewer was conceived and applied by conservators. The agreed solution was baptised “grisaille reconstitution” and consists in reconstituting figures, outlines and *modelés* whilst omitting colour restitution on purpose. According to research, no concrete examples of similar restoration method was found, but two cases ^[2] ^[3] and in particular the restoration of the Ovetari Chapel painted by Mantegna in Padua provided ample inspiration.

In the end, using a sketch from the 19th century, a photography dated early 1900 and other paintings of the same period & geographic area, conservators were able to propose a plausible reconstitution of the lost figurative parts which provides a more unified vision of the composition.

Keywords : *Grisaille, Reconstitution, Discernible retouching*

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Biography



Séverine Francoise: With a Master's degree in conservation-restoration from the National Institute of Heritage (INP, Paris), Séverine works as a freelance conservator of easel paintings, with a specialisation in old master panels, at different French museums. Over the last ten years, she has worked at various French museums and has collaborated on multiple projects with the French Museums Restoration Research Centre (C2RMF), based in Paris. More recently, she has led and coordinated a team of 9 conservators in charge of the conservation of the *Puys d'Amiens*.

A NEW AESTHETIC PROPOSAL FOR THE *MEN-AT-ARMS* BY DONATO BRAMANTE. CONSERVATION HISTORY, METHODOLOGICAL APPROACH AND TECHNICAL SOLUTIONS

Michela Cardinali; Alessandro Gatti; Marie Claire Canepa*; Cristina Quattrini; Marianna Ferrero

Centro Conservazione e Restauro "La Venaria Reale", via XX Settembre 18 – 10078 Venaria Reale (Turin), Italy.

*Corresponding author: marieclaire.canepa@centrorestaurovenaria.it

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ABSTRACT

During the recent exhibition of the 15th-16th century Lombard art section of the Pinacoteca di Brera in Milan, carried out in 2018, the conservation laboratories of the Centro Conservazione e Restauro "La Venaria Reale" had the opportunity to study and restore the famous cycle of detached wall paintings transferred to canvas *Men-at-Arms*, painted by Donato Bramante in 1488-89 [1].

The working team managed to reconstruct the complex conservation history of the cycle thanks to observation and scientific characterization of the materials. Our results have been compared with the information provided by archival research, especially the historical pictures kept by the Civic Photo Archive in Milan and by the Historical Archive of Brera [2].

The project allowed to trace the deep changes concerning the concept of *inpainting* from the late nineteenth century to date: in this proposal we would like to present our results, focusing on the overpainting dated back to the first nineteenth century, carried out after the detachment of the paintings from the wall. Our study is focused as well on the conservation treatment of the 1970s, in which many gaps had been retouched with the *neutro* technique, according to the aesthetic criteria and methodology of the period [3].

The conservation project arose from a specific need of the Pinacoteca to update the aesthetic presentation of the eight Bramante's paintings, which was fragmentary due to the numerous gaps. Our work aimed at better reading the images while preserving the reversibility criteria of the intervention.

The understanding of the historical events and the characterization of both the original materials and the ones applied during the previous interventions, led us to consciously set our conservation project: all the phases were carried out by an interdisciplinary team composed of conservators, art historians and conservation scientists.

The final target was to achieve the perfect balance between the history of the artworks and the conservation issues, finding, at the same time, an easier way for the public to read and enjoy the paintings, as requested.

KEYWORDS: *History of retouching; Inpainting; Previous restorations; Lacuna; Wall paintings; Renaissance*

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Biography



Michela Cardinali is graduated and senior specialized as conservator of painted surfaces on several supports and on lithic materials (Istituto Superiore Centrale per il Restauro, Rome) and she got the Degree in Conservation of Cultural Heritage at the University of Tuscia. Since 2006 she works for the Conservation and Restoration Center "La Venaria Reale" (CCR): first as a conservator specialized in the field of natural stone artefacts and derivatives and paintings on canvas and panel, and as a professor in the Master's Degree Program in Conservation and Restoration of Cultural Heritage of the University of Turin; in 2012 she became Director of the Conservation Laboratories and since 2013 she is Head of the School of Higher Education and Study.

RECOVERY OF A WAR-DAMAGED PAINTING “OUR LADY OF THE ROSARY” FROM VRLIKA

Sandra Šustić (1); Ivan Režić (2); Mario Cvetković (3)

(1) Croatian Conservation Institute – Restoration Department Šibenik, Milice i Turka 4, Mandalina, 20000, Šibenik

(2) Franciscan Province of the Most Holy Redeemer, Visovac, HR 22324 Drinovci, tisina.1978@gmail.com

(3) FESB, University of Split, Ruđera Boškovića 32, 21000, Split; mcvetkov@fesb.hr

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ABSTRACT

The restoration of the cultural heritage with dramatic losses – whether they are the results of a natural processes or a human action – is a subject increasingly discussed between conservators and art historians nowadays. The approaches in formulating general guidelines involve many different aspects to be considered ranging from technical and sociological to philosophical and psychological points of view. Although considerable research has been devoted to architectural and archaeological heritage, rather less observation has been paid to recovery of visual arts.

This study is related to the major recovery project of a 18th century oil painting on canvas depicting "Our Lady of the Rosary" which is celebrated as the patron saint of the parish community of Vrlika and its surroundings. During the Croatian War of Independence in 1992 the painting was taken off the main altar and vandalized. The central part of the composition, including almost the complete figures of Virgin Mary and the Child, was cut-out and taken away by the paramilitary units of the so called SAO Krajina. This deliberate destruction by a human hand terminated a century long tradition of annual feasts in Vrlika in which the painting was publicly displayed and carried by the townsmen.

Based on the cross referencing available visual materials; a high resolution old black and white photograph and the low resolution coloured photograph, the computer colorization algorithm, and also relying on the non-invasive technical analyses of the original paint layer, a major reconstruction was carried out in 2017. This one-year project was initiated and sponsored by a group of Franciscans from Vrlika with the primary intent of re-establishing the feast of "Our Lady of the Rosary" and customs of her popular cult.

In addition to details of technical execution and challenges related to this sort of intervention, a particular interest in the opposing views of the authenticity and the social value of the artwork is given. It can be concluded that the recovery of the artworks with dramatic losses is an extremely complex social phenomenon that is difficult to characterize by any general factor or through any general approach.

KEYWORDS: *War-damaged art, Dramatic losses, Reconstruction, Cult image, Social value, Authenticity.*

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Biography



Sandra Sustic received a degree in conservation-restoration of easel paintings and polychrome wood at the Arts Academy of the University of Split (equivalent MA) in 2007 and a Ph.D. in Art History (Department for Protection of Cultural heritage) at the Faculty of Humanities and Social Sciences in Zagreb, Croatia in 2016. Her areas of interest include theoretical and practical aspects of retouching of paintings, technical art history, historically informed reconstructions of paintings and history of conservation practice. Since 2007 she has worked with the Croatian Conservation Institute in the department of easel paintings and polychrome wooden objects. Since 2014 she has taught at the Conservation-Restoration Department of the Arts Academy, University of Split.

AESTHETICAL PRESENTATION OF A DEVOTIONAL ARTWORK: PROBLEMATICS AND POSSIBLE VIRTUAL SOLUTIONS

Irene Montagnolo (1); Marco Bacci (2), Laura Baratin (2), Giovanni Checcucci (2), Maria Rita Ciardi (2)

(1) Restorer; Italy, iris.monti90@gmail.com.

(2) Conservation and Restoration School, Department of Pure and Applied Sciences, University of Urbino, Piazza della Repubblica 13, 61029 Urbino, Italy; laura.baratin@uniurb.it, ritacia2001@yahoo.it,

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ABSTRACT

In this contribution, the accent is focused on the complexities and the possible solutions that a restorer has to take into account during the sensitive phase of aesthetical presentation of the devotional artworks. For this type of artefacts is often not possible to apply the logic of conservative restoration- which requires the minimum intervention - because the devotional aspect is an added value that has to be protected, since it carries a number of symbolic codes that have to be immediately understood by the religious community to which they are destined.

The complexity derives from trying to understand and define limits that the restorer has to respect, keeping in mind that the goal is to reduce the interference that a lacuna could cause in the reading of the artwork. [1] The object of this study is a wooden polychrome Crucifix, coming from Eremo of Monte Giove, Fano (PU) and property of the Congregazione Camaldolese, with a state of conservation that required a mandatory contemplation on the choice of the final aesthetical treatment.

Thanks to the modern digital instruments, which worked as a valid support through the comprehension of the executed intervention and in the education to the reading of the image, the adopted choice was to offer the intervention of aesthetic presentation on a “virtual model” [2] of the Crucifix, taking into account its religious and devotional function, along with the necessity to give back an image that had to be as whole and recognizable as possible.

A digital process that went from the integration of lacks and deteriorations, to the pictorial reintegration of the skintone and of the golden loincloth was implemented. To develop this research, the starting point consisted in measurable and correct datum thanks to the acquisition of the information with the portable laser scanner; the acquired data, in the form of a point cloud, were transferred in a software that generated a model made of surfaces and then mapped and overlapped to the high-definition pictures. The result was imported in a program that is specialized in the elaboration of digital images for the intervention of virtual aesthetic presentation.

The achieved results allowed to foreshadow operations that are not always materially practicable on the artwork, and they allowed to visualize the Crucifix as it should have been deported, giving back the value of historical witness and restoring the potential unity without erasing the signs of passing time[3].

KEYWORDS ; *Aesthetic presentation; Virtual restoration; Portable laser scanner; Crucifix; Religious art.*

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Biography



Irene Montagnolo. Graduated in 2013 in Cultural Heritage Sciences with specialization in History of Art at the University of Roma Tre. Graduated in 2018 in Restoration and Conservation of Cultural Heritage with specialization in artefacts painted on wood and textile supports, artefacts sculpted in wood, décor and structures in wood, artefacts and synthetic processed materials worked assembled and/or painted, discussed a thesis on the aesthetic presentation of religious works, at the University of Urbino Carlo Bo.

THE USE OF A VIRTUAL IMAGE AS A STEP TO AESTHETIC PRESENTATION OF AN OVERPAINTED BAROQUE PAINTING

Ana Sterle; Lucija Močnik Ramovš

University of Ljubljana, Academy of Fine Arts and Design, Erjavčeva ulica 23, Ljubljana;
ana.sterle96@gmail.com

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ABSTRACT

The baroque painting *Mater Dolorosa* belonging to The National Museum of Slovenia represents a popular iconographic motif of Our Lady of Sorrows (*lat. Mater Dolorosa*). The green colour of the drapery, poorly visible dagger, and see through different colours indicated misrepresentation of the painting's content. Through scientific investigations in 2012, an overpaint was found, hiding a sword and a different colour of the drapery. Before the 2018 intervention the painting has undergone two conservation-restoration interventions.

The profession commission decided the overpaint was to be selectively removed. The original and overpainted paint layers were of the same chemical composition – egg tempera. Different approaches of removing the overpaint were tested in the past sessions. Most of the overpaint was removed however some was left on the brittle areas for further research on removal methodology. Effective methods would do more harm than good to the original paint layer thus a compromise was made in 2018 to use the mechanical method.

Graphical documentation of the areas that needed to be removed and reintegrated was made for a transparent view of the upcoming work. To help with the removal and the reintegration process, a virtual image of the reintegrated painting and its options was made. The purpose was to get to know the painting's specifications better. During the making of the virtual image, the painting was researched in detail in order to correctly apply the theory to practice. Main sources were the X-Radiography scan, the cross-section results and the tests of the removed overpaint.

The overpaint removal resulted in a lot of imperfections in the paint layer due to the damage on the painting and some from removing the overpaint. The reintegration process consisted of different methods such as *tratteggio*, pointillism and mimetic reintegration, chosen according to the type of the damage.

Despite the painting's complexity, it was successfully conserved-restored by using a virtual image of the painting to plan the procedure and prevent unnecessary mistakes. It was especially interesting to compare the predicted and realised intervention. The conservation-restoration intervention was finished in such a way that conservators-restorers can continue research on the painting. The virtual image was tremendously helpful for the overpaint removal and the reintegration of the painting.

KEYWORDS: *Overpaint; Egg tempera; Graphical documentation; Virtual image; Reintegration.*

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Biography



Ana Sterle was born in Ljubljana, on the 11th of October 1996. As a child she participated in art workshops led by artist Peter Ciuha. She finished School of Economics in Ljubljana, where she also exhibited her art works. Throughout primary and secondary school, she participated in other hobbies; choir and solo singing, business workshops led by Matija Goljar and air rifle shooting, where she placed second in the National Championship in 2007. She is now a student of Conservation and Restoration of Art at the Academy of Fine Arts and Design in Ljubljana, currently studying at ESAPA in Spain.

DIGITAL RETOUCHING AND RECONSTRUCTION OF THE MEDIEVAL VAULT PAINTINGS OF THE ZUIDERKERK

Antje Verstraten (1); Megan Kisters (1) ; Luc Megens (2) :Sanne Berbers 24)

(1) Independent Art Conservator of Historic Interiors.

(2) Cultural Heritage Agency of The Netherlands (RCE)

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ABSTRACT

The 15th century vault paintings of the Zuiderkerk in Enkhuizen portray a narrative series based on typologies of the Old and New Testament. They are unique because of their scale - over 1300 square meters - and the fact that they are complete. The latter is unusual due to iconoclasm that took place in 1566. However, as a result of natural aging, discoloration and partial removal of overpaint during the early 20th century, the visibility and therefore the legibility has declined greatly. A pilot restoration in 2006 of one of the panels did not improve the legibility of the panels in a satisfactory manner.[1] Therefore, another strategy was suggested by the Stichting Vrienden van de Zuiderkerk: a digital visualisation of what the paintings originally looked like.

A pilot project was conducted in 2017 by both authors and Nina Timmer, during their post graduate appointment at the University of Amsterdam under supervision of Merel Lantman and in collaboration with the Cultural Heritage Agency (RCE).[2] A continuation of the trial was implemented at the end of 2018 in collaboration with the RCE. The aim of this project is to produce a credible and substantiated *digital version* of the original colours of the paintings. An additional goal is to make digitally *retouched* images.

Before the reconstruction of the original colours could be made, the image of the painting had to be digitally retouched. The many remains of the overpaint, the intense gloss of the later-applied wax coating and the visible older retouches were digitally removed to obtain a calmer image.

In order to substantiate the digital reconstruction, the paintings have been thoroughly studied. An elaborate literature study into comparable paintings has been conducted and contemporary manuscripts and painting techniques have been studied. Additionally, art technological research has been performed, which consisted of *in-situ* XRF measurements and of SEM-EDX analyses at the lab of the RCE to gain insight into what pigments have been used. The following pigments could be identified: vermilion, lead-tin yellow, carbon black, azurite, a copper green and ochre. To decide on a colour for the digital reconstruction, physical reconstructions were carried out and measured with a photo spectrometer. The CIE*Lab-values of these colours were implemented in the final reconstruction of the – digitally retouched – image of one of the panels, which can be viewed on an interactive app in situ as a crucial part of an audio/visual tour of the Church.

KEYWORDS: *Digital retouching; Digital colour Reconstruction; Colour measurement for reconstruction; in situ XRF for pigment determination*

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Biography



Antje Verstraten is a freelance art conservator and researcher who specializes in the conservation and restoration of historic interiors. In 2016 she graduated from the University of Amsterdam after conducting the master's programme 'Conservation and Restoration of Cultural Heritage'. Her subject of graduation was a study into the original blue paint layers in an interior designed by artist Theo van Doesburg. After her master's, she did a two-years post-master programme at the university, during which she did several internships. She interned at the National Museum in Copenhagen, and with three different freelance art conservators in the Netherlands.

DOCUMENTATION: ONE ARTIST, TWO PAINTINGS, DIFFERENT SOLUTIONS

Liliana Cardeira (1, 2); Ana Bailão (1,3); Frederico Henriques (1,2,3)

- (1) CIEBA, University of Lisbon, Faculty of Fine Arts, Largo da Academia Nacional de Belas-Artes 4, 1249-058 Lisboa, Portugal; lilianacardeira@gmail.com ; ana.bailao@gmail.com
- (2) Laboratório Hercules, University of Évora, Palácio de Vimioso Largo Marquês de Marialva, 8, 7000-809 Évora, Portugal;
- (3) CITAR, Universidade Católica Portuguesa, Rua Diogo Botelho, nº 1327, 4169-005 Porto, Portugal.
frederico.painting.conservator@gmail.com

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ABSTRACT

Retouching a painting is always a challenge for conservators-restorers (CR) especially when is missing information about the forms, shape, size, light, shadows and also colour (hues, tones or tints) [1]. The first usual question is: retouch or not to retouch? This decision is generally based on the value and on the function of artworks [2 - 3]. The CR skill and reliable sources of documentation related with the artwork are also important issues to have in mind. The second question is about the retouching technique [3] more suitable.

To this end, a free and open access geographic information system (GIS) software called QGIS® was used [4]. During the analysis several vector maps of the degradation phenomena – lacuna were produced. The aim of this study is to show how a geographic information system can help in choosing the reintegration technique to apply.

Thus it is intended to show the retouching technique choices for two paintings from the Portuguese painter Adriano de Sousa Lopes (1879-1944) [5] (*Batalha entre gregos e troianos* and *Portrait Senhora do chapéu*). These two paintings belongs to the collection of Faculty of Fines Arts, University of Lisbon.

The two treated paintings, from the 20th century are very different and with losses of different sizes and shapes. One required significant retouching in connecting the compositional elements, and the other, with small losses needed a different approach in the intervention. Solutions were found according with the characteristics of the paintings, the kind of losses, among other criteria. Pointillism and *selezione cromatica* were the selected techniques.

KEYWORDS: *Criteria; Documentation QGIS; Losses; Reintegration; Techniques.*

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Biography



Liliana Carneira is a PhD candidate in Science of Art at the Faculty of Fine Arts of the University of Lisbon (FBAUL). Graduated in the Science of Art and Heritage and a Master's Degree in Conservation, Restoration and Production of Contemporary. She also have a post-graduate course in Museology and Museography. She has been developing her work in the field of conservation and restoration on the academic paintings of Adriano de Sousa Lopes, belonging to Painting Collection of FBAUL.

THE RETOUCH OF A CANVAS PAINTING IN A BAD STATE OF CONSERVATION, GUIDED BY THE SEMI-AUTOMATIC EXTRACTION OF THE LACUNAE AREA AND THE DIGITAL COLOR ANALYSIS FOR VIRTUAL REINTEGRATION PROPOSALS.

Amura Annamaria (1), Landi Luisa (1), Pisani Luigi (1), Soro Maria Veronica (1), Zantedeschi Giorgia (1)

(1) School of Conservation and Restoration, Department of Basic Sciences and Applications, University of Urbino Carlo Bo, Republic square, 13, 61033, Urbino, Italy. annamaria.amura@uniurb.it, luisa.landi@uniurb.it, luigi.pisani@uniurb.it, sorove@libero.it, gio.zante@hotmail.it.

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ABSTRACT

This work proposes a methodology of digital analysis of the state of conservation of the painting in order to solve some difficulties related to the pictorial reintegration of paintings on canvas that show an excessive number of different lacunae in terms of size and extent. The case study consists of a small-size oil on canvas painting by an unknown artist, representing a Madonna con Bambino, San Giuseppe e San Giovannino. This artwork has been chosen for didactic and research aim, in reason of the difficulties occurred during the intervention of restoration [1]. The huge amount of the lacunae on the preparatory and pictorial layers made the representation painted extremely discontinuous and hard to read. These lacunae were difficult to analyze and graphically localize and required a careful evaluation of the approach to be used during the intervention of reintegration and pictorial retouching. For that reason, we decided to use computer graphic methods that allowed us to produce virtual processing, outlining different operating proposals [2][3]. The methodology followed is divided into two phases: the interrogation of vector traces and the colorimetric analysis of the surface of the painting. The photographic reproduction of the artwork on a 1:1 scale was analyzed with image segmentation and edge detection algorithms [4], automatically extracting the vector trace of all the areas of the lacunae and the contours of the overall area of the canvas. The vector data were interrogated and emerged that the lacunae areas of the painting concerned the 32% of the total painted area. Through data interrogation three different types of lacunae have been identified and classified in: "small", "medium", "large", providing to the operator a key parameter in the choice of the lacunae to reintegrate [5]. Through this semi-automatic drawing procedure has been eliminating the long work of manual graphic documentation, creating an objective and queryable database [6]. For the digital color analysis, colorimetric average of the fields of color surrounding the lacunae has been carried out which has allowed us to advance several virtual integration proposals as a white grouting (chalk and glue); integration with color neutral background laid on the exposed canvas; integration with color neutral background laid on a material texture filling; color mimetic integration laid on the exposed canvas; color mimetic integration laid on a material texture grouting; juxtaposed colored lines integration laid on grouting ("tratteggio" technique, roman school). The software used for virtual processing has been Photoshop, MatLab, QGIS.

KEYWORDS: Colour reintegration; Raster analysis; Virtual proposals; Raster to vector; Feature extraction, Database.

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Biography



Amura Annamaria is a Ph.D. Candidate in Computer Science at University of Urbino with a research project in *“Digital Image Analysis for the Automation of Graphic Documentation of Cultural Heritage.”* She has had several teaching support contracts in computer science and design courses. She has a B.d. in *Technology for the Conservation and Restoration of Cultural Heritage, Class 41*, and a M.d. in *Graphics of Images, LM12, Documentation and Photography for Cultural Heritage*. Her research interests include digital photography, Image analysis, features extraction from diagnostic Images, raster to vector automation method, GIS database, virtual restoration, Graphic documentation.

'RETOUCHING' IR IMAGES: AN INNOVATIVE METHOD FOR IMPROVING IR IMAGING WITH MATLAB FOR UNDERPRINTINGS RECOVERY

Silvia Bottura Scardina (1)(2)(3)(4)(5); Catarina Miguel (2); Filipe Themudo Barata (4)(6); Alice Nogueira Alves (1)(3)

- (1) Faculdade de Belas-Artes, Universidade de Lisboa, Largo da Academia Nacional de Belas Artes 4, 1249-058 Lisboa, Portugal; silvia.scardina@campus.ul.pt.
- (2) HERCULES Laboratory, Institute for Advanced Studies and Research, Universidade de Évora, Largo Marquês de Marialva 8, 7000-809 Évora, Portugal; cpm@uevora.pt.
- (3) Universidade de Lisboa, Faculdade de Belas-Artes, Centro de Investigação e Estudos em Belas-Artes (CIEBA), Largo da Academia Nacional de Belas Artes 4, 1249-058 Lisboa, Portugal; a.alves@belasartes.ulisboa.pt.
- (4) Centro Interdisciplinar de História, Culturas e Sociedades, Universidade de Évora (CIDEHUS), Palácio do Vimioso, Largo Marquês de Marialva 8, 7000-809 Évora, Portugal.
- (5) HERITAS Consortium, Universidade de Lisboa – Universidade de Évora; silvia.scardina@campus.ul.pt.
- (6) History Department at Social Sciences School, Universidade de Évora, Largo dos Colegiais 2, 7000-803 Évora, Portugal; ftbarata@uevora.pt.

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ABSTRACT

Early printed books could be illustrated with engraved prints and later painted. If coloured, the initial design of these decorations would, indeed, undergo important changes or even disappear [1]. IR imaging technologies allow the retrieval of the original appearance of these illustrations, or *underprintings*, with the result of providing generally good representations. Sometimes, paints reflect or extinct excessive IR radiation on local areas [2] and accordingly, the overall image quality results degraded. In aiding readability of digital images, Image Processing methods proved to be useful by removing visible flaws [3] or filling local lacunas via interpolation algorithms [4], for instance. Unfortunately, these tools have not been implemented to improve digital IR imaging results to date. This paper presents an innovative methodology developed in MATLAB environment to solve this inadequacy. An explorative survey focusing on the quantitative assessment of a procedure limited to IR reflectographies will be followed. Neither the analytical conditions nor the possible application of interpolation algorithms have not been contemplated at this stage.

As a case study, a 16th-century French printed Book of Hours (BPE-Portugal, Inc.438) was chosen. VIS photographs and reflectographies were acquired to compare the painted images to the recovered underprintings, respectively. Four illustrations of different size and artistic quality were chosen for the purpose: *Printer's device* (f.1r), *Annunciation to the shepherds* (f.9r), *St Anthony with swine* (f.61v) and *Jesus taking up his Cross* (f.97r). After acquiring and stitching reflectographies with an image manipulation software, the final IR images were imported and pre-processed in two phases. During the first stage, images were converted to a grayscale dynamical range readable by the software. In the second, a mask cleared from the surrounding text was made to serve as a basis for the final image building. Later, the areas to merge for the final reconstruction were selected as draggable freehand regions from intermediate matrices averaged on several single-grayscale-level images chosen basing on local histograms. After repeating the procedure for multiple times until completion and refining, each underprinting was also reconstructed manually with a graphic tablet. The first 'automated' and the other 'manual' reconstructions will be then segmented into ROIs to compare against unpainted versions of the same for assessing their accuracy. For the comparison, full-image, pixel-based (MSE, Tanimoto's method), correlation-based (Pearson's coefficient) and structural-similarity (SSIM) indices will be used for quantitative image quality assessment. The expected result is to highlight an effective similarity between the pristine and the automated reconstructions and validate the method.

KEYWORDS: MATLAB; Digital reconstructions; Image Processing; IR reflectography; Early printed books; Illumination.

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Biography



Silvia Bottura Scardina is an Italian PhD student in Fine Arts of the University of Lisbon, integrated member of the research department Centro de Investigação em Belas-Artes and fellow of the same university. She was awarded a degree in Conservation and Restoration of Librarian Heritage at 'Tor Vergata' University in Rome and a Master of Science in Conservation Science at 'La Sapienza' University of Rome. She is member student of the Consortium HERITAS for doctoral studies and collaborates with the research department Centro Interdisciplinar de História, Cultura e Sociedades of the University of Évora, HERCULES Laboratory of the same university.

RESTORATION AND VIRTUAL RECONSTRUCTION OF LUCANIAN PAINTING

Ferrucci Fabiano (1), Maria Rita Ciardi (2), Amura Annamaria (3)

(1), (2), (3) School of Conservation and Restoration, Department of Basic Sciences and Applications, University of Urbino Carlo Bo, Republic square, 13, 61033, Urbino, Italy

(1), (2) Consorzio L'Officina, Consorzio Restauro e Conservazione Opere d'Arte, Via Savoia 78, 00198 Roma RM, Italy, 06 6872331. ritacia2001@yahoo.it, fabiano.ferrucci@gmail.com, annamaria.amura@uniurb.it

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ABSTRACT

This contribution, accompanied by a video projection, present the restoration and virtual integration of a painted tomb from the Lucan period (4th century BC) now dismount and kept in the deposits of the National Archaeological Museum of Paestum [1]. The museum contains about 500 painted plates; the most important collection of pre-roman painting in Italy, together with that of Etruscan painting. Since the beginning of the nineties, the workgroup has been involved in the restoration of the lucanian paintings, having restored most of them [2]. Over the years the workgroup has developed an approach to intervention that avoids reconstructions directed at the originals but entrusts the reconstructive phase of the image to virtual models. The virtual reintegration that is carried out is based on these elements: identification of the traces of original colour on the surfaces [3]; pigment analysis [4]; study of the executive technique; iconographic comparison with other painted pieces of the same corpus; reconstruction by levels (coloured backgrounds, decorative elements; figurative elements). The video shows the restoration phases on the work, such as cleaning and consolidation and the subsequent reintegration on virtual models [5], showing how the intervention carried out in this way respects the authenticity values of the work.

KEYWORDS: Painted Tombs; Virtual Model; Color Reintegration; Virtual Reintegration, Lucanian Painting.

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Biography



Ferrucci Fabiano Restorer of Cultural Heritage graduated from the Central Institute for Restoration in Rome in 1989; following the ICR specialization course in 1992. Graduated with honors in art history at the University of La Sapienza. He has worked in important archaeological areas, such as Paestum, Ostia Antica, the Fori Imperiali, Ercolano, Pompei. He has been working on Campanian-Lucanian painting for 30 years. Since 2001 he has been an Adjunct Professor at the University of Urbino. He is the author of 37 scientific publications.

REPRODUCTION OF DECORATIVE ELEMENTS IN A 18TH CENTURY FRAME: 3D MODELING, 3D PRINTING AND MATCHING COLOUR

Frederico Henriques (1, 2, 3); Ana Bailão (1, 2); João Rocha (1); João Costa (1)

- (1) Centro de Investigação em Ciência e Tecnologia das Artes (CITAR), Universidade Católica Portuguesa, CITAR, Rua Botelho 1327, 4169-005 Porto, Portugal
- (2) Centro de Investigação e Estudos em Belas- Artes (CIEBA), Faculdade de Belas-Artes da Universidade de Lisboa, Largo da Academia de Belas-Artes, 1249-058, Lisboa, Portugal,
- (3) Laboratório HERCULES; Universidade de Évora, Palácio do Vimioso; Largo Marquês de Marialva, 8, 7000-809 Évora

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ABSTRACT

The acquisition of a 3D digital model is being established as a common practice in many Cultural Heritage applications [1], as well as the use of digitization technology [2]. Computer aided technologies are being used for diagnostic and non-invasive documentation [3], for analytical and interactive visualization purposes [4], and have been used in restoration projects [5], and so on. Accurate 3D surface model can be obtained through 3D scanner or photogrammetric technique. The focus of this project is the adoption of 3D models for 3D reconstruction of ornaments with photogrammetry.

This case study describes the application of photogrammetry for 3D modelling, the post-processing of the 3D file (OBJ.) with computer graphic software and 3D printing of ornaments to support an intervention of conservation and restoration of a frame from the 18th century. The investigation focuses on the issues concerning the reconstruction of the missing ornaments and the matching colours of the obtained 3D prints.

About the frame, it is from the 18th century. It is still on the painting that was originally made for, the Portrait of D. José, Principe of Brazil, by the painter António Amaral. The frame is from an anonymous artist/carver and is made of pine, joined together with animal glue. There were extensive damages and longitudinal cracks had appeared. The ornaments were also loose and some of the decorative elements had been lost. Moreover, there was some mechanical damage and some glued pieces from past interventions. One detail was missing on one of the four sides of the frame. In addition, the bronzing was of a later date and was also worn and soiled.

The standard procedure for replacing missing ornaments normally is to obtain replicas by taking casts from preserved details on the same frame. However, in this case, due to the fragility of preparation layer and metallic surface of the frame, it was decided that the missing pieces should be done in a way that could be possible to reduce manipulation, preventing further damage. After some research it was decided that the 3D print of the missing decorative ornaments could be an option. The final model was printed in Inkjet Powder Bed 3D Printing. The system of the printer is powder based or binder jetting (ASTM terminology). The powder used was gypsum. For the matching colours, tests were done to match the roughness of the original surface and the metallic effect of the paint. Iridescent pigments were used for the chromatic reintegration [6].

KEYWORDS: Photogrammetry; Restoration; Frame; 3D printing ornaments; Matching colours

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Biography



Frederico Henriques: PhD in Painting Conservation at Catholic Portuguese University (2012); Diploma in Conservation and Restoration at Escola Superior de Conservação e Restauro (1997) and Polytechnic Institute of Tomar (2005). Since 2014 is researcher in Documentation and Spatial Analysis of Cultural Heritage at Research Centre for Science and Technology of the Arts (CITAR/UCP).

THE CASE OF CAPOGROSSI IN ROME: CRITERIA AND LIMITS IN THE RETOUCHING PROCESS OF A CONTEMPORARY MURAL PAINTING

Paola Mezzadri (1), Giancarlo Sidoti (2), Maria Carolina Gaetani (3)

- (1) Conservator - Restorer, Istituto Superiore per la Conservazione ed il Restauro, Via di San Michele 25, Rome, Italy; paola.mezzadri@beniculturali.it
- (2) Chemist, Istituto Superiore per la Conservazione ed il Restauro, Via di San Michele 25, Rome, Italy; giancarlo.sidoti@beniculturali.it
- (3) Conservator - Restorer, Istituto Superiore per la Conservazione ed il Restauro, Via di San Michele 25, Rome, Italy; mariacarolina.gaetani@beniculturali.it

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Abstract

This abstract focuses on the reintegration treatments applied to a contemporary mural painting, which was designed and carried out by the Italian artist Giuseppe Capogrossi in 1954. This forgotten masterpiece is located on the ceilings of the main double staircase at the entrance of the *Airone*, an ex-cinema theatre in Rome. The building, located inside a central court enclosed by five blocks of flats was commissioned by a public corporation, and was designed and planned during the Fifties by the famous architects Adalberto Libera, Eugenio Montuori and by the engineer Leo Calini. During that period, Capogrossi had already developed a visual vocabulary of irregular comb or fork-shaped signs. This particular painting was developed on the basis of the architects' plans, even though it could be linked to the Informal artistic movement. The abstract geometric style of the painting, which is made of a graphic and modular repetition of brilliant and "pop" colours, was connected together by utilizing modular elements. Overall, in line with the architectural plan, the painting recalls the imagery of a large crowd flowing inside the cinema, their countless eyes watching around.

Unfortunately, the main project was twisted, transformed and damaged. The building is now abandoned since 1999. The decoration, strictly connected to the function of the original project, has been completely covered by synthetic coatings; first due to water infiltration, and then due to the changing use of the building for different purposes.

After a brief introduction based on the conservation history of the building and on the painting itself, it will be described criteria and limits in the reintegration process of a sample area of this highly degraded polyvinyl acetate (PVAc) based mural. The massive decay process of the painting surely was one of the main factors in developing some choices in the reintegration project as including or excluding some materials.

All these materials, based on natural polymers and synthetic polymers will be theoretically compared with one another and it will be explained why some of these could be appropriate and effective, while others could not chromatically work in this particular case. The theoretical selection procedure certainly was influenced by the necessity to find materials that were similar to the original one in terms of chromatic gloss but different at the same time in terms of solubility, hence reversible.

The purpose of this research represents the first step in the theoretical discussion that will also lead to develop appropriate trials in the retouching field materials in order to identify the most suitable reintegration techniques - both in terms of methodology and materials applied - for all the 63 m² of the Capogrossi mural painting at the *Airone* ex cinema - theatre.

KEYWORDS: *Capogrossi; Contemporary mural painting; retouching techniques; pilot methodology; synthetic polymers; natural polymers.*

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Biography



Paola Mezzadri holds degrees in "History of Art and Conservation of Cultural Heritage"(BA) from RomaTre University and in "Conservation and Restoration of Cultural Heritage"(MA) from Istituto Superiore per la Conservazione ed il Restauro (IsCR) of Rome, Italy. She has worked, as a Professional, on all the works of art executed in natural and artificial stones: mural paintings, mosaics, and all the decoration applied to the architectural field collaborating with several Institutions such as The Vatican Museums, The Pontifical Commission for Sacred Archaeology, The International Institute for Restoration and Preservation Studies. She has made also experiences abroad in Portugal in the retouching field of oil paints materials both on wall and on canvas but now she focused her research on conservation projects of synthetic paints on wall. At the moment she is Conservator for the Istituto Superiore per la Conservazione ed il Restauro in Rome, Italy, doing conservation projects on wall paintings most of the time and improving her knowledge in the restoration field of contemporary art applied in the architectural field.

THE RETOUCHING IN MARIA LAI'S OUTDOOR ARTWORKS: DOCUMENTING ULASSAI'S OPEN-AIR MUSEUM.

Rita Salis

University of Pisa, Italy, ritasalis@gmail.com

Abstract

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During her career Maria Lai (1919-2013) has devised a series of site-specific artworks and interventions in Sardinia, which represent a unique heritage for its close relationship with art, history, local traditions and the population¹. With *Legarsi alla montagna* (1981) the entire hometown of Ulassai, was involved in a relational artwork. From 1981 until 2009, Maria Lai had realized other 15 monumental outdoors artworks in Ulassai, which became an open-air museum, using different materials such as concrete, iron, steel, ceramic, acrylic painting and forex panels.

After a few years the first conservative problems emerged: the colors of the works painted with acrylics began to fade. Hence, Maria Lai decided to intervene by repeatedly retouching the most damaged works. After her death this procedure was employed again during emergencies by unskilled workers, without a unitary methodical approach. Six artworks, all made of concrete of different shapes and sizes later painted with acrylic colors (*Telaio Soffitto*-1982, *La strada del rito*-1992, *La Scarpata*-1993, *Il gioco del volo dell'oca* - 2002, *La casa delle inquietudini* -2005-2006, *Pastorello mattiniero con capretta*-2005), show visible traces of different interventions and repainting of the surfaces with different shades.

I started my project with the aim of systematically documenting the artworks's history and conservation by collecting bibliography, archival materials, historical photographs and videos. I also interviewed Maria Lai's friends and staff, comparing their responses in order to provide a truthful and accurate description of the conservation condition.

The research showed that the artist had a clear idea for the purchase of colors and very precise intentions on the material aspects of the works. For *La strada del rito* she used 366 concrete panels (about 60x60x6 cm), during the execution she also used colored concrete in addition with local stones in order to give a natural look to the work of art. After a few years the work presented deterioration problems and after Maria Lai's death unskilled workers retouched some panels in black and white, thus significantly changing the artist's idea.

All the results revealed information about the creative process, the artworks' maintenance and conservation problems, pointing out how important it is to document changes to preserve the future of this heritage.

KEYWORDS: *Environmental Art; Site-specific; Acrylic; Colour reintegration; Documentation*

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¹ This work is an abstract of my thesis "La vita delle opere: arte ambientale di Maria Lai a Nuoro e a Sassari" for my post-degree specialization in Historic and Artistic Heritage at Pisa's University supervisor professor Antonella Gioli.

Biography



Rita Salis is an art historian, in 2018 she obtained a post-degree specialisation diploma with honours in Historic and Artistic Heritage at Pisa's University. In 2012 she received her First level master in "Conservation and restoration of Contemporary Works of Art" (Opificio delle Pietre Dure - Florence). In 2009 she obtained a master's degree with honours in Art History at the University of Pisa. Rita has had many experiences both in public and private institutions, including: the Soprintendenza of Cagliari, the National Gallery of Modern Art (Rome), the Museum of Graphic Arts (Pisa) and the Secession Museum (Vienna).

RETOUCHING UNVARNISHED ACRYLIC EMULSION PAINTINGS: A COMPARISON OF FIVE SUITABLE RETOUCHING MEDIA

Clémence Jacqmin

clemence.jacqmin@gmail.com

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ABSTRACT

During the 60's, acrylic paintings gained popularity among the artists, and this media allowed them to create easily and quickly large paintings, monochrome paintings or very thinned aspects of the pictorial layer. Also, depending on the desired effect, the aspect of the paint layer can be **mate** or **glossy** (depending on the use by the artist, and the composition of the paint itself[1], such as pigments or additives).

Despite these aesthetics benefits that the acrylic paint provides, acrylic films have many flaws such as **sensibility to polar organic solvents**[2] (and in some extent water[3]) and are prone to accidental pictorial alterations (more than oil because acrylic remains flexible and "soft" after drying). Most of the needed retouching caused by accidental alterations of the paint layer is directly on the film (and not on lacunae, or filling, as this type of alterations is rare on acrylic paintings) so the notion of **reversibility** is crucial. This is why this study is focused on retouching media, that are suitable for acrylic paintings.

Those materials suitable for acrylic paintings[4][5] are then soluble in either water or aliphatic hydrocarbons. The tested materials are **Aquazol®** 200[6] and 500, **Klucel® G**, **Arabic gum**, and **Regalrez® 1094** mixed with pigments. Ready to use materials (**Aquacryl®**, **QOR®**, and **Winsor & Newton®** watercolours) were also tested to see if they could be useful for the conservator (and mostly gain time).

Various criterias were tested during two phases of tests: first, all the materials were tested mixed with titanium white and their gloss and color were measured, to see which material is more prone to produce matter films. A set of samples were then exposed to **artificial light aging** under Xenon light, and another set exposed to **high relative humidity** in order to isolate the impact of light and humidity on the gloss and color of the resins (like yellowing), and how the retouching could behave in poor conservation conditions.

The second phase was more empirical: the resins were mixed with five different pigments to see the difference of coverage and saturation between materials. Most importantly, the materials were tested on naturally aged acrylic paintings by a panel, to see which material(s) they would like to use, recommend, or use themselves.

The aim of this study wasn't to find the right retouching material, but rather to enlarge the possibilities for the retouching of acrylic painting. According to the different tests, this study suggests the use of various materials, depending on both the aspect of the painting and the alteration.

KEYWORDS: *Acrylic painting; Stability; Matte retouching; QOR; Aquazol; Regalrez.*

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Biography



Clémence Jacqmin. After studying art history at Paris 1- Pantheon Sorbonne, Clémence Jacqmin obtained her Master degree in Conservation of Paintings in June 2018 at the Superior National School of Visual Arts La Cambre, in Brussels, Belgium. The title of her master thesis was “Retouching unvarnished acrylic emulsion paintings: a comparative study of suitable retouching materials”. She now works as an independent conservator in France and Belgium.

Posters abstracts

RETOUCHING AND SURROUNDINGS: TIPS AND TRICKS FOR CONSERVATION STUDENTS

Francesca Tonini

Ca' Foscari University in Venice and Carlo Bo University in Urbino (Italy); francitonini@gmail.com

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Abstract

The question of retouching in Italy dates back to at least the 16th century - with Giorgio Vasari - and goes through the following centuries with different theories on the reconstruction of losses. In 1963 the “Teoria del restauro” by Cesare Brandi was published, and some years later the proposals by Umberto Baldini, all based on the fundamental parameters of reversibility, recognizability and minimal intervention, now internationally shared.

The question of retouching still raises extensive discussions and debates among the experts, but here we deliberately do not enter into the theoretical aspects of the matter, but prefer to focus on the practical context in which the retouching practice is performed.

The aim is to provide the students of conservation-restoration schools, who are approaching the study and practice of restoration – and in particular the retouching phase, some useful tools to best accomplish this phase of intervention.

The illustrated proposals are the result of personal experience as a professional restorer and professor, and come out from the fruitful matching of ideas and best practices with colleagues and students from various parts of the world.

In the retouching activity, education, manual skills, colour sensitivity, and knowledge of materials and techniques are indispensable. Not less useful, however, are the setting up of the work space, the choice of light, the care of clothing, the implementation of procedures for the protection of health and personal and environmental safety.

Last but not least, the consideration that retouching is a sedentary job, and that a good result is also achieved by interrupting this physical and mental mood with movement and breathing, to improve posture and regain freshness and objectivity also in the visual approach.

Even so, we will contribute to achieve a valuable result.

KEYWORDS: *Retouching; Materials; Environment; Safety; Tips.*

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Biography



Francesca Tonini is graduated in Restoration, and in Conservation of Cultural Heritage with a thesis on baroque wooden sculpture. She is Adjunct Professor at the Ca' Foscari University in Venice and the School of Restoration at the Urbino University. Member of ICOM-cc, and Consulting Advisor for the "Projecto Retablos-Conservation of Wooden Polychromed Altarpieces". She has taken part in various international conferences, seminars and workshops as a speaker, and a member of the scientific committees. As an editor she has written many essays and articles on the study and restoration of wooden sculpture. In 2015 she published the handbook "La scultura lignea. Tecniche e restauro. Manuale per allievi restauratori". She is currently Adjunct Professor of Restoration at the Ca' Foscari University in Venice, and at the Carlo Bo University in Urbino.

THE REINTEGRATION OF A WOODEN POLYCHROME CRUCIFIX: ISSUES, APPROACHES AND MATERIALS SELECTION

Flavia Sorace (1); Marco Bacci (1)

(1) University of Urbino Carlo Bo, Department of Pure and Applied Sciences, Conservation and Restoration of Cultural Heritage, Via Aurelio Saffi 2, 61029 Urbino (PU), Italy; flavia2295@hotmail.it; marcobacci2005@yahoo.it

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ABSTRACT

Wooden polychrome sculptures have different methods of reintegration and retouching which result from each piece specific needs and its fruition. The practical decisions are the result of an exchange of ideas between restorer, client, chemist and Superintendence of cultural heritage, whose aesthetic choices may result in very different solutions. Therefore, the different phases concerning the aesthetic proposal end up being a compromise between aesthetic decisions and conservation requirements.

This work will review two different interventions of plastic and pictorial reintegration that a wooden polychrome sculpture representing a Crucifix has undergone. This eighteenth century sculpture is from the hermitage of Monte Giove in Rosciano (PU) and belongs to the Eremiti Camaldolesi Congregation. The Crucifix, restored in the laboratory of the University of Urbino, unveiled a serious degradation of the constituent materials: large lacunae of the wood, some of which altering the plastic forms and polychromy and a shrinkage crack caused a deep vertical split in the torso and an alteration of the original volume.

These issues presented an opportunity for further discussion and study relating to the potential solutions for each type of damage. The aesthetic criteria, the materials compatibility and the preservation of the original image with its function resulted in a reconstruction of the plastic forms by choosing to not bonding the reconstructed elements to the original wood, but making them movable with magnets. This solution has made the intervention reversible and also distinguishable through retouching technique of pointillisme. On the other hand, the torso crack has been reintegrated with a filler that would allow to follow the wood movements, a fluoroelastomers based mixture with cellulose pulp and wood powder. Pigments have been added to the filler to adjust the tone of the compound, in order to avoid applying a fine surface filler or a pictorial coat.

These two different interventions are discussed analyzing the critical approaches, the materials selection and the aesthetic results.

KEYWORDS: *Wooden sculpture; Lacuna; Polychromy; Reintegration; Reconstruction.*

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Biography



Flavia Sorace. Graduated as restorer and conservator of cultural heritage in April 2019 at the Carlo Bo University of Urbino. She is actually working as a trainee at the Laboratório José de Figueiredo - Departamento de Museus, Conservação e Credenciação in Lisbon.

GILDING AND POLYCHROMY ON 15TH CENTURY STONE RELIEF FROM DUBROVNIK: TECHNICAL STUDY VS. CENNINO CENNINI'S RECIPE

Jure Balić (1); Martin Zohil (1); Vinko Lipanović (1); Ema Bonomi (1); Vinka Marinković (2); Sandra Šustić (3)

(1) Arts Academy of the University of Split (student), Zagrebacka 3, 21000 Split - Croatia;; jure.balic95@gmail.com; martinzohil1@gmail.com; vinko_pinta@hotmail.com; emabonomi34@gmail.com;

(2) Croatian Conservation Institute, Split Department for Conservation, Porinova 2a, 21 000 Split - Croatia, vmarinkovic@h-r-z.hr

(3) Croatian Conservation Institute (HRZ), Šibenik Department for Conservation, Milice i Turka 4, 22 000 Šibenik – Croatia, ssustic@h-r-z.hr

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ABSTRACT

Over the past few decades, a lot of attention has been given to the preservation of polychrome and gilded stone altarpieces, sculptures and architectural objects. However, in Croatian conservation literature there is a significant lack of comprehensive studies on the original methodology and polychrome schemes of the surviving artefacts.

A 15th century gilded polychrome stone relief from Dubrovnik – a decorative part of the pulpit depicting four Dominican saints – underwent a laborious technical study and conservation treatment at the Croatian Conservation Institute in 2016. This offered a valuable opportunity for understanding the materials from which it was made as well as the technological choices in its original production. The aim was to systemize all relevant information for the reconstruction process of the damaged polychrome decoration.

Due to the difficulty of judging the existence of original isolation and ground layers two experimental reconstructions were made using historically informed materials – one based on the information of the paint samples taken during the conservation treatment; the other based on documentary research of Cennino Cennini's recipe (M., CLXXIV) with five intermediate layers prior to gilding.

Both reconstructions provided a valuable insight into the function of these layers – in particular the visibility of isolating layers, their impact on the absorption features and the drying time. Moreover, an interesting comparison of the final effect of the gilding and polychromy was addressed with applications in final retouching of the relief.

KEYWORDS: *Gilding and polychromy, Stone relief, Historically informed reconstruction, Ground layers, Cennino Cennini's recipe, Mimetic retouching*

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Biography



JURE BALIĆ was born in Omiš, Croatia in 1995. He completed the School of fine arts in Split (The Painting department). He is currently a fifth year student in the field of conservation - restoration of stone artefacts.

RESTORING THE SIGHT OF A POLYCHROMED WOOD SCULPTURE: ETHICAL AND PRACTICAL CHALLENGES

Bruna Silva Pereira (1); Ana Rita Esperança (1); Débora Amarelo (1); Ana Bailão (1,2); Ana Bidarra (1); Teresa Desterro (1)

(1) Polytechnic Institute of Tomar, Quinta do Contador. Estrada da Serra. 2300-313. Tomar. Portugal; bruna.silva.pereira@outlook.pt; anarita.esp@gmail.com; bidarra.ana@gmail.com

(2) Faculty of Fine Arts, CIEBA; Catholic University of Portugal, CITAR; ana.bailao@gmail.com

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Abstract

The aim of retouching is to decrease deterioration evidences in the work of art and retrieve the visual interpretation of its ichnographic shapes and contents [1]. This case study will focus on the retouching process of the eyeballs of a wood sculpture depicting Saint Teotónio. The object is a full size sculpture, made of chestnut, with a full body, standing upright, wearing episcopal robes. Two polychrome techniques had been used: oil for the flesh tones and tempera for the white garment and the rest of the body. The edgings of the clothes are decorated with gold leaf, and the lower part of the robe with vegetal and geometrical shapes, made with an estofado technique.

Prior to the retouching process of the flesh tones, investigations were done. According to Maria José González López et al [2], between the 17th and the 18th centuries the skin tones of the sculptures in Spain and Portugal were usually obtained with:

- a layer of a pinkish tone, made with lead white and black or earth colours, for flesh colour;
- a layer of a bluish tone, made with azurite or smalt blue, for beards;
- or even a layer of a reddish tone for eyes and cheeks, made with lake pigments.

This information help us to achieve the hues to retouch the face of the Saint. But the eyeballs, originally in glass, and now made with an acrylic filling paste, were an issue. Ethics in conservation and restoration of pupil and iris in sculptures were discussed. Since it is an object of devotion, it was decided to conduct the reintegration. To avoid painting the pupil and the iris over the filler, removable systems were proposal for reconstruction such as: use of magnetic materials, easily removable, which could function like lenses, according with the size, shape and texture. Different types of resin were tested. The lenses were made with acrylate 2 ethyl hexine. This material is used in the production of homopolymers and copolymers. It has good resistance to water and sunlight, and also has good dispersion. Acrylate 2 ethyl hexine can be dosed through drops. After five minutes drying, the pupil was made with Varello acrylics using a dropper bottle of Ivory Black (PBk9).

KEYWORDS: *Polychromed wood sculpture, retouching; eyeballs; magnetic; lenses; acrylate 2 ethyl hexine*

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LIGHT UP YOUR RETOUCH! HOW TO FIGHT METAMERISM IN CONTEMPORARY ART RETOUCHING

Serena Francone

Conservator, viale Kennedy 2, 22070 Bregnano (Como, Italy), materiadarte@gmail.com

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ABSTRACT

Metamerism is a central issue in the aesthetic intervention on contemporary artworks, also due to market-related reasons. A different metameric behavior of the retouched area with respect to the original pictorial material is due, essentially, to the different chemical nature of the paint used by the artist to that applied by the conservator. For economic reasons, carrying out scientific analyses to find out the composition of the original paint layers is not always possible. Therefore, a series of considerations must be made: will the artwork be exposed outside or inside? Which kind of light will be used to illuminate it? These questions led to different decision making processes. Of course, the best solution is to carry out the retouching under the same illuminant which will be used in the artwork's exhibition. No problems occur when the artwork is exposed inside with a unique illuminant. Problems arise when the artwork is exposed outdoor or with more than one light source, as in the extreme case of black-light art.

In this research, samples of paint of same colours made using different pigment mixtures were observed outside under daylight in different hours and inside under LED lamps with different colour temperature and different wavelenghts. The choice of LED lamps as artificial illuminants is due to the wide diffusion nowadays in daily life and also in museums, thanks to their limited UV and IR emission. The appearance of samples under fluorescent lamps were also compared. A photographic documentation under the different illuminants was made. The ImageJ software has been used to evaluate metamerism.

KEYWORDS: *Retouching; Contemporary art; Metamerism; Natural light; LED lamps; Fluorescent lamps.*

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RETOUCHING A PVC SCULPTURE – CHALLENGES OF WHITE

Sara Russo (1), Simone Caglio (2, 3), Tommaso Poli (4), Bruna Mariani (1), Isabella Villafranca-Soissons (5)

- (1) Accademia di Belle Arti Aldo Galli, Como, Italy; artsara.russo@gmail.com
- (2) Freelance, Scientific analysis for cultural heritage, Milan, Italy; info@simonecaglio.it
- (3) Department of Material science, Università degli Studi Milano-Bicocca, Milan, Italy
- (4) Department of Chemistry, Università degli Studi di Torino, Turin, Italy; tommaso.poli@unito.it
- (5) OpenCare Restauri s.r.l., Milan, Italy; isabella.villafranca@opencare.it

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ABSTRACT

When dealing with plastic artworks, it is of crucial importance to carefully calibrate investigations and interventions since plastic presents subtle intrinsic chemical and physical equilibrium and a slight variation could trigger unforeseen and unexpected outcomes [1,2]. To these technical difficulties, deontological considerations must be added. For a contemporary artwork it is important to plan the operative choices in such a way that they respect the artist's intentions and messages [3]. To respect the artist's message it is often necessary to restore the morphological integrity. The present work describes the retouching performed on a PVC sculpture from the 60s by the Italian artist Remo Bianco [4]. The artwork consists of four white opaque and embossed plastic masks covered with an artificial snow finish [5]. The retouching was performed in the areas where the monochrome appearance was perturbed. The greatest difficulties in the design phase concerned the plastic's nature and surface characteristics, such as: opacity, the white monochrome surface, one-layered colour and extremely limited intervention surface thickness (1 mm or less). The literature on plastic artwork's materials and their conservation treatment was scant. Few apt intervention materials with an adequate chemical, physical and mechanical behaviour were already suggested in standardized procedures. Considering all of the above, materials selection criteria were set and mock-ups were designed and developed. Different materials have been tested alone and mixed together in different percentages. Application tests have also been carried out and the results have been verified under different lights. The mock-ups allowed us to evaluate the interactions between the materials and to select the most suitable solution. The rationale, the analysis and the strategies that led to the selection of materials and operational choices are presented. The restoration project was completed in accordance with objectives, restoring the artwork's morphological surface integrity respecting its aesthetic and conceptual value.

KEYWORDS: Plastic conservation; PVC; Retouching; Monochrome surface

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Biography



Sara Russo recently graduated with high honours in restoration of historic heritage with a thesis concerned the treatment and intervention of a polyvinylchloride sculpture. She is deep interested in conservation of synthetic materials and contemporary art and has collaborated with institutions active in conservation of plastic objects as *Fondazione Plart* in Naples and *Open Care - servizi per l'arte* in Milan. She works at *Fondazione Antonio Ratti* in Como (Italy) as history archive responsible.

APPROACH TO RETOUCHING OF ONE DAMAGED RELIGIOUS PAINTING

Ruta Kasiulyte

Lithuanian art museum Pranas Gudynas centre for Restoration, restcentras@muziejus.ldm.lt;
rutakasiulyte@gmail.com

ABSTRACT

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Painting “Miracle of s. Stanislaw” was damaged and adopted to not original frame. This roughly changed format and composition of the painting. All painting layers were badly damaged by wetting with water. This caused scour of the binding media from the ground. Whole painting surface suffered from flaking of paint layer. Layer of dirt on the surface has hidden the author’s signature on the left down corner of the painting. Support format of the painting was reconstructed, and new underframe was made according to the original form of the painting. Paint layer was consolidated. Crumbled places of paint layer were filled by hand made protein glue ground. When darkened dirty was removed the signature of the painting author was revealed. The author is Anthony Przeslanski (1879-1965). This case nicely append the history of religious paintings in Lithuania.

Retouching process was long and accurate because damaged area was large and lacunae were very fine. The retouching was carried out using watercolours.

Restored picture has another look of original painter’s intention of composition. Reconstructed parts of ground and paint layer are unified in the whole of painting.

KEYWORDS: *Consolidation; Reconstruction; Signature; Watercolours.*

Biography

Ruta Kasiulyte works in P. Gudynas Centre for Restoration of Lithuanian Art Museum as restorer of painting from 2001. She started to study art from school time on. She studied in Vilnius Art Academy where gained MA degrees in Painting (1996) and Easel Painting Restoration (2000). 2004 finished special professional studies for Conservation of Cultural Heritage at Vilnius University, Faculty of Chemistry. Ruta Kasiulyte published some articles about technical and theoretical questions of restoration of modern painting. She took part in some conferences for conservators in Europe as an author of presentation or poster.

STUDY OF LOSSES AND CREATION OF A WORK METHODOLOGY FOR THE CHROMATIC REINTEGRATION OF CANVAS FROM THE FACULTY OF FINE ARTS OF THE UNIVERSITY OF LISBON

Beatriz Domenech (1); Ana Bailão (2)

- (1) Instituto Universitario de Restauración del Patrimonio de la Universitat Politècnica de València, Camino de Vera s/n 46022 València, Spain; beadomga@gmail.com
- (2) Faculdade de Belas-Artes, CIEBA, Largo da Academia Nacional de Belas Artes 4, 1249-058 Lisboa; Universidade Católica Portuguesa, CITAR, Rua de Diogo Botelho, 1327, 4169-005 Porto, Portugal; Instituto Politécnico de Tomar, ana.bailao@gmail.com

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ABSTRACT

The present study begins with the photographic documentation of pictorial works belonging to the heritage of the Faculty of Fine Arts of the University of Lisbon. These are canvases dated between the nineteenth and twentieth centuries and occupy various themes, such as academic, animal, landscape, portrait and decorative painting. The photographic examination has focused on the losses in the canvases since a large number of them are located in compromised areas of the representations, making it difficult to read into the artworks.

For this reason, a detailed analysis of the losses has been completed, approaching on aspects such as depth in the pictorial strata, their location in the figure or in the background, the colorimetric environment in which they are surrounded, etc. In addition, a quantitative study has been carried out using a Geographic Information System (GIS) called QGIS® with the aim of accounting the losses and finding out the percentage they occupy regarding to the amount of original paint that is preserved.

Therefore, through the collection of these data, it is intended to establish a relationship of affinities and differences between the losses of the different works in order to make a proposal of a work methodology to intervene them appropriately due to the complexity they present, thus establishing the limits of the chromatic reintegration to be made.

KEYWORDS: *Reintegration of losses; Chromatic reintegration; Reintegration criteria; QGIS®; Geographic Information System*

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Biography



Beatriz Domenech. Graduated in 2014 in Fine Arts at the Universitat Politècnica de València, specializing in conservation and restoration of easel paintings. In 2015 she graduated in a Master degree of Conservation and Restoration of Cultural Heritage at the same university. During last years, she has actively participated in several conservation and restoration projects. Currently, she is developing a PhD in Retouching of Easel Paintings..

CHROMATIC REINTEGRATION IN CONTEMPORARY MONOCHROMATIC NON-VARNISHED PAINTINGS

Marta Aleixo (1); Ana Bailão (1, 2); Andreia E. Gomes (3); João Linhares (3); Margarita San Andrés (4); Sérgio Nascimento (3)

(1) Faculdade de Belas-Artes, Universidade de Lisboa; marta.sofia.aleixo@gmail.com

(2) Faculdade de Belas-Artes, CIEBA, Largo da Academia Nacional de Belas Artes 4, 1249-058 Lisboa; Universidade Católica Portuguesa, CITAR, Rua de Diogo Botelho, 1327, 4169-005 Porto, Portugal; Instituto Politécnico de Tomar, ana.bailao@gmail.com

(3) Centro de Física, Universidade de Minho, Gualtar Campus, Gualtar, 4710-057 Braga, Portugal. andrea.gomes.ni@gmail.com ; jlinhares@fisica.uminho.pt ; smcn@fisica.uminho.pt

(4) Departamento de pintura y restauración de la Facultad de Bellas Artes, Universidad Complutense de Madrid

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ABSTRACT

Contemporary monochromatic non-varnished oil or acrylic paints present very particular problems in the conservation and restoration, namely regarding to their chromatic reintegration [1]. At a technical level, this type of paintings presents abrasions, especially in the laterals due to the absence of frames in most cases, fingerprints and stains, mainly caused during handling. Being non-varnished works, the cleaning becomes a more complex process than usual, being sometimes partial, or even impractical due to the technique or the mixture of techniques employed by the artist. Carrier of aesthetic and conceptual values, these paintings also difficult the process of colour reintegration due to issues associated with the artistic intention and the message that are usually associated with the materials and their plastic qualities [2]. The aging and the way that observer perceived matching of colours caused by the new materials and techniques used in reintegration are extremely important factors to account for in the decision-making process, since any chromatic condition alteration will affect the pictorial discourse of the works, more than in traditional paintings. Also metameric matches with brighter and saturated colours is more difficult to achieve than with greyed, whitish or dark colours. Our aim with this ongoing research is to analyse and access possible solutions for the chromatic reintegration of some monochromatic paintings of the Portuguese artist Jorge Martins [3]. Mock-ups of the Martins' painting were made to test the materials used and to evaluate the impact of the aging and physical interaction over the surfaces. The most common damages like small lacunae, abrasions, fingerprints and stains were done over the surfaces [4] of the mock-ups, including physical damaging and artificial aging by the means of an aging camera (SunTest XXL+ Atlas). Accelerated exposure simulates colour changes, the mock-ups were subjected to a radiation of 300-400 nm, with an energy radiation of 60.5 W / m² at an exposure time of 410.5 hours between 30°C and 40°C. The tests were made according to ASTM D 4303-03, Standard Test Methods for Lightfastness of Colorants Used in Artist's Materials. To access the changes induced by artificial aging and physical interaction the mock-ups were imaged using a hyperspectral imaging system (HI), before and after changes. Radiance data was acquired from 400 to 720 nm in 10 nm steps and the reflectance retrieved. The CIELAB colour coordinates were then estimated assuming the CIE D65 illuminant and CIE 1931 observer. The colour difference between the original and the aged mock-up was estimated and values of CIEDE>2.2 were considered to be visually distinguishable. The colour gamut was also estimated and increases in the volume were assumed as an increase on the chromatic diversity. Chromatic spatial variation was also estimated to infer the extent at which the changes impacted the overall artwork.

KEYWORDS: *Monochromatic painting; Non-varnished contemporary paints; Chromatic reintegration; Colour measurement*

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Biography



Marta Aleixo. Graduated in Science of Art and Heritage at the Faculty of Fine Arts of the University of Lisbon (FBAUL). Currently doing a Master degree in Conservation, Restoration and Production of Contemporary Art, with a dissertation entitled *Strategies of Chromatic Retouching in the paintings of Jorge Martins*, at the same institution.

STRATEGY TO DESCRIBE THE MIXING OF COLOURS USED DURING THE RETOUCHING PROCESS

Ana Bailão

Faculdade de Belas-Artes, CIEBA, Largo da Academia Nacional de Belas Artes 4, 1249-058 Lisboa;
Universidade Católica Portuguesa, CITAR, Rua de Diogo Botelho, 1327, 4169-005 Porto, Portugal; Instituto
Politécnico de Tomar, ana.bailao@gmail.com

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ABSTRACT

In the conservation and restoration (CR) final report writing about colour could be difficult. Also, can be confusing and incomplete if a technical description is not used.

The aim of this reflection is propose a strategy that actually helps the CR students when they are learning to mix colours and the CR professionals when they have to describe which colours they use for the chromatic reintegration treatment.

Specify as much as possible the pigment used for the mixing, the mixing itself and the quantity of pigment used is possible. The tendency to use the common name written by the manufactures in the tube paint is not sufficient to a conservator-restorer since the common name not always is precise, i.e., not always have a correlation with the paint composition. If we now consulted a final report the information commonly found is that watercolours (with indication of the brand) were used and that synthetic organic pigments were also used, by example. But, depending of the brands, a colour can be pure, with one pigment, or could be made with two or more pigments. So, we need objectivity.

The kind of information that the conservator restorer needs to describe can be correlated by analogy with an equation. The colour index name, the adding pigments and the quantity can directly state in the equation. But the equations can also be colorized equations to help the reader to understand the diagram. In this way our eyes could read the equation like a map and not a string of symbols. The technical description of the performed retouching made this way seems clearer.

Creating Colorized Equations of the mixings can also be surprisingly fun. The aim of this abstract is to explain the rules to written the colour mixing more precisely.

KEYWORDS: *Chromatic reintegration; colour equation; mixing, matching*

Biography



Ana Bailão. Guest assistant professor at Faculty of Fine Arts, University of Lisbon. PhD in Conservation of Paintings at the Portuguese Catholic University, in collaboration with the Centro de Investigação em Ciência e Tecnologia das Artes (CITAR) and the Instituto del Patrimonio Cultural de España (IPCE), Madrid. The doctoral research was about the criteria and methodologies which might help to enhance the quality of painting retouching. Professor at the Department of Science of Arte and Heritage, University of Lisbon and Polytechnic Institute of Tomar. The projects are presented through publications, lectures, exhibitions and presentations. Teaching about conservation and restoration, especially chromatic retouching, since 2008. Since 2004 carrying out conservation and restoration works.

WAX AND VARNISHES ON THE PAINTING "PORTRAIT OF A WOMEN"

Maja Reberski

Independent conservator-restorer, Vojakovačka 9, 10110 Zagreb, Croatia, zmayareb@gmail.com

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ABSTRACT

Due to the very dark back layer of the image, it was necessary to take pictures, except under normal light, also with UV (enables visibility of varnishes and old procedures), IR light (shows us the bottom painting or drawing) and the upright light (image is illuminated from the side) to clearly see the small cracks and the surface texture of the image. Only then it could be clarified how many subsequent layers exist in the image. The UV photo showed subsequent layers, and the IR photo showed the state of the image below. The details of hairstyles and ornaments on women's hair were discovered.

During the restoration, there were more interventions on the picture. There were three different layers of varnish, additional layer of oil paint, and intervention in wax. The greatest degradation of the image was due to the wax application and the last layer of lacquer. The largest destruction of the latest layer of varnish and the crusting of the painted layer is in the zone on the left side of the image, on the woman's hair. In the zone of the neck and the bottom right is the area of the largest surface of the oil copy, as well as the loss of the base and the painted layer. Wax was applied to the facial and neck joint zone and greatly degraded the painted layer. Only with the help of UV and IR light was it possible to see all the damage and decide on the ways and procedures.

CONSERVATION AND RESTORATION WORKS INCLUDED

- photographing under normal light, UV and IR spectrum
- data analysis and selection of procedures
- cleaning probes
- dribbling the painted layer
- removing of old varnish layers
- cleaning the image
- removal of compensation in wax
- back up in the base layer - plaster
- light isolation before new interventions
- compensation in the picture layer (retouch)
- protective layer, new varnish

KEYWORDS: UV fluorescence, Wax, Varnishes, Oil on canvas, Portrait

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Biography



Maja Reberski in 2007 passed the professional state exam and obtained a license from the Ministry of Culture of the Republic of Croatia for the specialty of stone plastics, wall painting and polychrome wooden sculpture. From 2001 to 2006 works independently and in collaboration with fellow restorers on various projects restoration and conservation of masonry, stone plastics, wooden polychrome sculptures, and other techniques. From 2006 to 2014 was co-founder and permanent professional associate ATIKA, crafts & restoration, Zagreb. In 2014 works independently, and becomes President of Croatian Conservation-Restoration Association.

CHROMATIC REINTEGRATION ON MURAL PAINTINGS AT THE LIGHT OF CONSERVATION-RESTORATION CRITERIA OF THE 21ST CENTURY: THE CASE STUDY OF SÃO MARTINHO DO PESO (BRAGANÇA-PORTUGAL)

Alexandra Marco (1,2,3); Mariana Joana Lopes (1); Joaquim Inácio Caetano (4); Patrícia R. Moreira (1,2,3); Manuela Pintado (3); Eduarda Vieira (1,2)

- (1) Escola das Artes, Universidade Católica Portuguesa. Rua Diogo Botelho 1327, 4169-005 Porto, Portugal; alexandra.marco.ma@gmail.com; mariana.jcl@hotmail.com; prmoreira@porto.ucp.pt; evieira@porto.ucp.pt
- (2) CITAR – Centro de Investigação para a Ciência e a Tecnologia das Artes, Universidade Católica Portuguesa. Rua Diogo Botelho 1327, 4169-005 Porto, Portugal
- (3) CBQF – Centro de Biotecnologia e Química Fina, Universidade Católica Portuguesa. Rua Arquitecto Lobão Vital 172, 4200-374 Porto, Portugal; mpintado@porto.ucp.pt
- (4) ARTIS – Instituto de História da Arte, Faculdade de Letras, Universidade de Lisboa (FL-UL). Alameda da Universidade, 1600-214 Lisboa, Portugal joaquimcaet@gmail.com

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ABSTRACT

In São Martinho do Peso Church (Bragança), some 16th century mural paintings were discovered behind the altars in the main chapel and in both sides of the nave. The two murals in the nave walls were detached in 2002 and applied onto expanded polyurethane supports, hanging nowadays in the lateral walls of the nave.

Changes in paintings may be due to natural aging or damages. So, conservation-restoration interventions are thought and set out to prolong the life of the art-works. Nevertheless, that is not always the case. For example, regarding the detachment of mural paintings in northern Portugal (as this case study demonstrates), most damages are due to the process itself (because of the thin and frailty of the layers that constitute such sets) rather than the conditions of the environment where they are placed after detachment [1].

Because of the different scale size of mural painting in comparison with canvas or wood panel painting, the reintegration of the lacunae should be treated differently. However, due to the aggressive process of detachment of murals, most of the ground layer and pictorial layer may be lost, in which case the fragment remaining would be entirely repainted (not reintegrated), creating an artistic or historic false.

Hereupon, we are going to analyse this case in light of the conservation principles – from the 19th century with Camillo Boito's [2] postulate *conservare non restaurare* concerned with the embellishment tendency and with it, the loss of historical authenticity, to the concept of minimum intervention and to ICOMOS Principles for the preservation and conservation of mural paintings [3] underlining the necessity of preserving *in situ* the mural paintings. The restoration must not damage the original in compliance with the ethical principle of *Primum non nocere* – do no harm.

It is important for an appropriate balance in theoretical knowledge and practical skills of the conservator-restorers and that a meticulous preliminary examination and a complete documentation of all interventions exist and are available for consultation. Whenever the existing ethical standards of conservation are ignored it may irreversibly damage the cultural heritage or contribute to the acceleration of the original materials deterioration.

Such case studies allow us to understand the conditions in which an artwork can be found in the present, learning from them, giving it context and maybe providing a guideline for sustainable preservation for future cases.

KEYWORDS: *Mural paintings; Chromatic reintegration; Detachment; Authenticity; Conservation-restoration practices*

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Biography



Alexandra Marco graduated in Conservation and Restoration of Cultural Heritage and as a Master Degree with specialization in painting, by the Catholic University of Porto in the field of characterization of microbial colonization and removal of black stains from mural painting of the 15th and 16th century in granite religious buildings in the north of Portugal. At the present moment is a FCT Ph.D. grant research student in Conservation of Cultural Heritage at the same University. She is also an integrated member of Centre for Research in Science and Technology of the Arts (CITAR).



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AGARAGAR

PRODUCTOS DE RESTAURACION Y BELLAS ARTES



KREMER

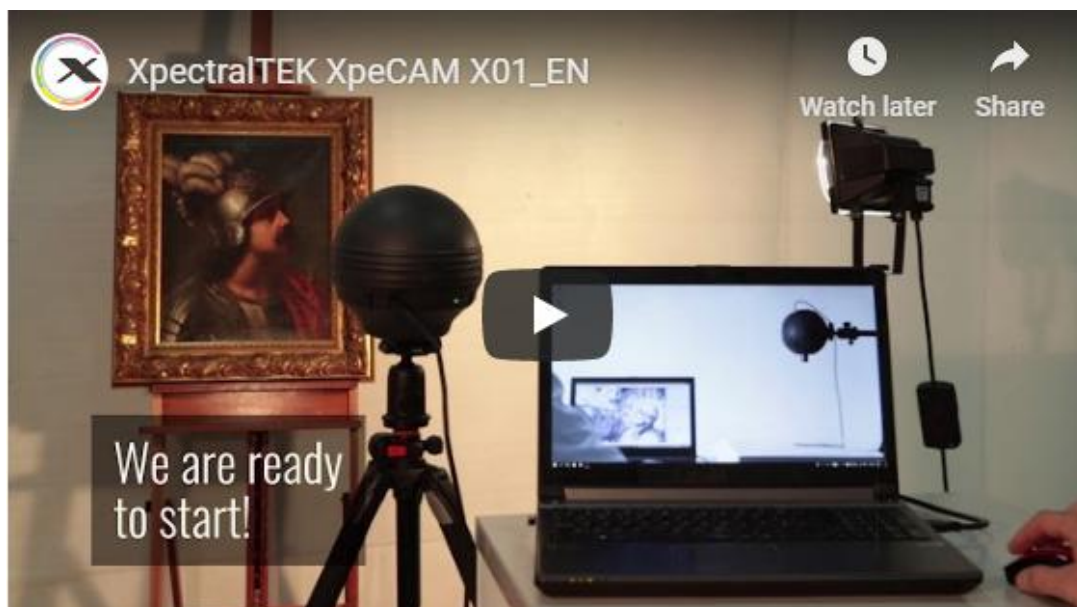
PIGMENTE

DEMOS

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I - XPECTRALTEK

Every conservator/restorer dream is to have a non-invasive, portable and user-friendly tool to optimize their work. We are helping to reach that goal by developing a centralized solution that allows you to acquire images and analyse them when and where you want to. The goal of our demonstration is to show the future end users of this solution how easy it is to do an acquisition, upload the images acquired to the cloud and then analyse them by the parameters you decide. You'll be able to understand much more about the art pieces you are working on and so take better decisions.



Available at: https://www.youtube.com/watch?v=ZBo_bvnacmM

II - DEMONSTRATION ON TWO TWIN MOKE-UP: MATCHING THE COLOUR INTO A LACUNA WITH ITALIAN TRADITIONAL HATCHING DIFFERENTIATED PAINTING TECHNIQUES

Paola Minoja (master degree in conservation ISCR - Rome)

Leonardo Severini (master degree in conservation OPD - Florence)

The demonstration will consist in a pictorial reintegration test carried out on prepared samples on which a lacunae will be filled with gesso/colla, levelled and then retouched live. There will be the opportunity to see the execution of the retouching work in all its construction phases using two different methods both based on strokes of pure colours juxtaposed that maintain a close up visible inpainting: first vertical *tratteggio* (Rome - ISCR) with watercolours on a white fill, second *selezione cromatica* (Florence- OPD) with varnish colours on a varnished lacuna with gouache flat under-toned base.



III - THE LAYERING SYSTEM OF MIMETIC RETOUCHING

Sandra Šustić, Croatian Conservation Institute

There's no established formula for a layering system in mimetic retouching, as the type of layers you need depend on the type of the paint layer you are retouching. Understanding how each layer works independently, and as part of a system, will help to build a mimetic integration of the damaged paint layer. This demonstration is aimed at painting conservators interested to explore some of the basic assets in retouching Old Masters paintings. The demo combines the observation sample test with practical application guidelines. The aim is to identify and utilize important attributes of the paint layer, such as: colour dimensions, texture and direction of the brushstrokes, traces of patina and various elements of degradation.

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