inart 2nd International Conference on Innovation in Art Research and Technology

21-25 March 2016, Ghent, Belgium

Book of Abstracts

Ghent, 21-25 March 2016

Monday, March 21, 2016		
8:00 - 9:00	Registration	
9:00 - 9:30	Opening Ceremony – Conference Room A	
9:30 - 10:10	Plenary lecture – Conference Room A & B **António Candeias** *Heritage Conservation and Art Research – a critical perspective*	
10:10 - 10:40	Coffee Break	
	Conference Room A	***Conference Room B***
10:40 - 11:00	**Ina Reiche** *Coupling scanning macro-XRF and confocal micro-XRF to study the three successive versions of the painting L'Homme blessé by G. Courbet*	**Lucy't Hart** *Monitoring the Impact of the Indoor Air Quality on Metallic Heritage*
11:00 - 11:20	**Martina Griesser** *Application of Neutron-based Analytical Techniques for the Non-destructive Investigation of the Coinage of Antique Bronze Coins*	**Evert B. Reijers** *Acidic degradation patterns of photographic dyes*
11:20 - 11:40	**Olivier Schalm** *Laminated altered layers in historical glass: density variations of silica nanoparticle random packings as explanation for the observed lamellae*	**Cátia Salvador** *Innovative mitigation strategies to easel paintings safeguard*
11:40 - 12:00	**Ingalill Nyström** *Forensic Art History: The Anders Ädel Pigment Dispute 1839-1841*	**Jan Krejčí** *Influence of Solvents on Cellulose Average Degree of Polymerization*
12:00 - 14:00	Lunch break	
14:00 - 14:40	Plenary lecture – Conference Room A & B **Terje Grøntoft** *Assessment of indoor air quality and the risk of damage to cultural heritage objects using MEMORI® dosimetry*	
14:40 - 15:00	Sponsor talk – BRS	
15:00 - 15:20	Sponsor talk – Bruker	
15:20 - 15:50	Coffee Break	
	Conference Room A	***Conference Room B***
15:50 - 16:10	**Aoife Daly** *Non-invasive tree-ring analysis-archaeology & art*	**Maduka L. Weththimuni** *Shellac-based nanocomposites for protection of wood surface*
16:10 - 16:30	**Marcello Manfredi** *Non-invasive Characterization of Colourants by Portable Diffuse Reflectance Infrared Fourier Transform (DRIFT)*	**Tomas Markevičius** *Innovative application of advanced nanomaterials designing future treatment technology for ART conservation*
16:30 - 16:50	**Alessia Coccato** *Combined historical, physical anthropology, archaeological, and archaeometrical approaches to understand glass beads from the Kongo Central province, Democratic Republic of*	**Marianne Odlyha** *Preservation of cellulose and collagen-based materials using novel nanoparticle-based treatment and non-destructive evaluation techniques*

	Congo (DRC)
18:00	Welcome reception – Cultuurkapel Sint-Vincent

Tuesday, March 22, 2016

9:00 - 9:40	Plenary lecture – Conference Room A & B **Howell G.M. Edwards** *Biodegradation of Art Works and Archaeological Artefacts Studied by Raman Spectroscopy : Space Mission Science Data Applied to Cultural Heritage Preservation*	
	Conference Room A	***Conference Room B***
9:40 - 10:00	**Aurélie Mounier** *Pigments & Dyes in a collection of medieval illuminations (14th – 16th century)*	**Alice Gimat** *Paper decay induced by iron gall ink: an investigation of the mechanism using cellobiose*
10:00 - 10:20	**Clara Granzotto** *Improved MALDI mass fingerprinting for identification and discrimination of Acacia gums in samples from works of art*	**Tânia Rosado** *Stone weathering by microbial activity – The case of Convent of Christ*
10:20 - 10:50	Coffee break	
	Conference Room A	***Conference Room B***
10:50 - 11:10	**Federica Pozzi** *Conquering space with matter: an in-depth study of Alberto Burri's materials and techniques*	**Kepa Castro** *Characterising the underwater corrosion system of iron nails coming from a shipwreck*
11:10 - 11:30	**Astrid Harth** *Assessing issues of attribution by means of technical research: a disputed Van Dyck reconsidered*	**Rafaela Debastiani** *Analysis of pigments from fragments of Roman wall paintings from Germania Superior*
11:30 - 11:50	**Armida Sodo** *Chemical and Spectroscopic investigation of the Raphael's Cartoon for the School of Athens from Pinacoteca Ambrosiana*	**Hilde De Clercq** *Rehabilitation of farms – limits of salt content*
11:50 - 14:00	Lunch break	
14:00 - 14:40	Plenary lecture – Conference Room A & B **Mary-Kate Donais** *The Saint Anselm College Italy Excavations - Research and Training*	
14:40 - 15:00	Sponsor talk – B&W Tek	
15:00 - 15:20	Sponsor talk – Smarttech LTD	
15:20 - 15:40	Sponsor talk – Hirox Europe	
15:40 - 16:20	Flash presentation 1	
16:20 - 18:00	Poster session 1 + Reception	

Wednesday, March 23, 2016

Conference Excursion (Lunch and Dinner included)

Thursday, March 24, 2016

9:00 - 9:40	Plenary lecture – Conference Room A & B **Jan Jehlička** *Comparison of Miniature Raman Spectrometric Devices and Gemtesting Systems for Identification of Gemstones*	
	Conference Room A	***Conference Room B***
9:40 - 10:00	**Antonio Hernanz** *Raman microscopy of hand stencils rock art from Yabrai Mountain, Inner Mongolia Autonomous Region, China*	**Fauzia Albertin** *Tomography reads inside ancient books*
10:00 - 10:20	**Philippe Colomban** *On-site identification of Sceaux porcelain and faience using portable Raman instrument*	**Jan Van den Bulcke** *Looking inside valuable wooden objects with X-ray CT @ UGCT*
10:20 - 10:50	Coffee break	
	Conference Room A	***Conference Room B***
10:50 - 11:10	**Claudia Conti** *Non-destructive subsurface investigation of art materials with Micro-SORS*	**Adele DeCruz** *Observations on the use of OCT to examine the varnish layer of paintings*
11:10 - 11:30	**Debbie Lauwers** *A novel concept towards in-situ Raman mappings using a portable Raman spectrometer*	**Tom Callewaert** *Segmentation of thin varnish layers in OCT images of works of art*
11:30 - 11:50	**Christoph Herm** *Analysis of Wilhelm Ostwald's "Colour Organ" with Raman Micro-spectroscopy*	**Manuel Dierick** *The use of micro-CT in cultural heritage research*
11:50 - 14:00	Lunch break	
14:00 - 14:40	Plenary lecture – Conference Room A & B **Manfred Schreiner** *Multispectral Imaging and Material Analysis for the Visualization and Documentation of Manuscripts*	
14:40 - 15:00	Sponsor talk – XG Lab	
15:00 - 15:20	Sponsor talk – Fondis Bioritech	
15:20 - 16:00	Flash presentation 2	
16:00 - 17:40	Poster session 2 + Reception	
19:30	Conference dinner – Hotel Monasterium PoortAckere	

Tuesday, March 22, 2016

Oral Session A3

Oral Session B3

Sponsor Session 2

Poster Session 1

Conquering space with matter: an in-depth study of Alberto Burri's materials and techniques

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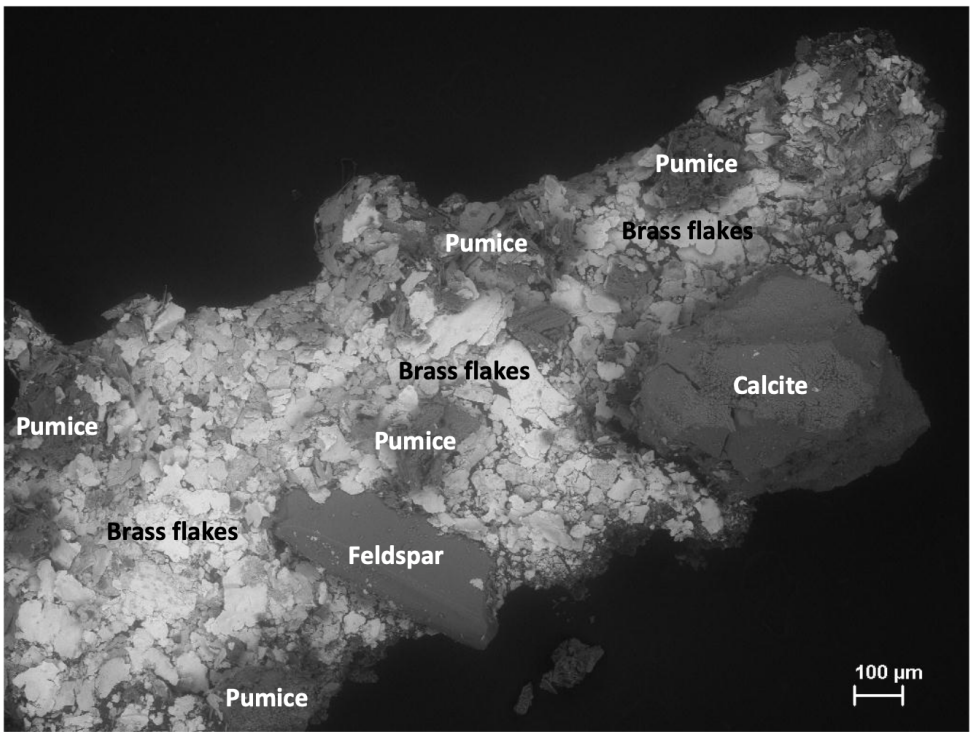
Keywords: Alberto Burri; modern art; painting; materials and techniques; scientific analysis; non-invasive techniques; micro-invasive techniques.

Alberto Burri (1915-1995) was a pioneering Italian painter and sculptor. Born in Città di Castello, a small town in the region of Umbria, he earned a medical degree from the University of Perugia. While serving in the Ethiopian campaign and in World War II, first as a frontline soldier and then as a physician, he was captured and sent to a prisoner-of-war camp in Hereford, Texas. It was there that Burri disavowed the medical profession and began to paint. He held a pivotal position in the modern post-war era, exhibiting in Rome and New York in the early 1950s [1]. He worked in series that were titled according to materials and process used, manipulating matter by burning, slashing, tearing and sewing. Burri systematically incorporated unconventional materials, such as household linens and items of clothing, burlap sacks, tar, and newly manufactured industrial products (plastic sheeting, wood veneer, cold-rolled steel) into his creations.

The present contribution describes an in-depth scientific investigation of a selection

The present contribution describes an in-depth scientific investigation of a selection of 14 paintings by Burri, each belonging to one of his series: *Sacchi* (sacks), *Bianchi* (whites), *Catrami* (tars), *Muffe* (molds), *Gobbi* (hunchbacks), *Legni* (woods), *Combustioni plastiche* (plastic combustions), *Ferri* (irons), *Cretti* (monochromatic fields of induced craquelure), and *Cellotex* (compositions on flayed fiberboard). Compared to previous works on Burri [2,3], elemental information obtained non-invasively via X-ray fluorescence (XRF) spectroscopy was here combined with detailed characterization of the organic and inorganic pigments, fillers, extenders, and binding media by means of micro-invasive techniques, including pyrolysis - gas chromatography / mass spectrometry (py-GC/MS), Fourier-transform infrared (FTIR) and Raman spectroscopies, and scanning electron microscopy / energy dispersive X-ray spectrometry (SEM/EDS).

Results delivered by this technical study have provided a deeper understanding of the multifaceted nature of Burri's working practice and elucidated his liberal experimentation with materials. Through the joint use of traditional pigments and binders along with industrial products newly introduced to the market, the artist encapsulated space into highly dramatic compositions at the boundaries between painting and relief sculpture.



Back-scattered electron image of a sample removed from Burri's *Muffa T* (Godwin-Ternbach Museum, Queens, New York, accession number X.2012.858, 1952).

SEM/EDS analysis revealed that the mold-like accretions that permeate the surface of the painting were primarily built up using composite conglomerations of pumice stone, calcite, feldspar and other silicate minerals, mixed in with an abundance of brass flakes.

References:

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Assessing issues of attribution by means of technical research: a disputed Van Dyck reconsidered

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Keywords: Issues of attribution; painting; imaging and analytical techniques

Over the past decades, technical study of artworks proved valuable for addressing issues of attribution.[1] By revealing new information about painting materials and techniques, advanced imaging tools and chemical analyses (e.g. Infrared reflectography, Macroscopic X-ray fluorescence and XRF analysis) challenge and broaden the current interpretative value of technical investigations of artworks.[2-3] However, despite the recurring introduction of improved diagnostic techniques for the study of paintings and the increasing knowledge of painters' modus operandi, 'advances in the methodology

the increasing knowledge of painters' modus operandi, advances in the methodology of attribution have seemed to progress at a snail's pace'[4]. Hence, the main problem in this research field is how to transform technical data into meaningful information favoring or opposing a specific attribution. This issue can be solved by identifying distinctive materials and techniques as markers in a set of reference artworks for a specific master, workshop, school or period.[5]

In this study we assess how an object-based methodology can assist in addressing attribution problems. The method was applied on a case study, i.e. the painting *Saint Jerome* attributed to Anthony van Dyck[6] of the Antwerp Museum Maagdenhuis, which presented useful evidence on the issue of markers. For the painting *Saint Jerome*, in-depth art historical and archival research did not result in a clear attribution to Van Dyck. Limited information on the painting's origin and history could be retraced as the earliest written document on the picture's provenance dates from 1841. Therefore, Van Dyck's working procedures were studied by systematically gathering available compositional data derived from a set of 37 reference paintings.[7-16] Additionally, the Antwerp painting's origin, history, iconographic program, formal features, current condition, physical and technical aspects were examined. Hence, the obtained compositional data of the painting could be studied within a broader art historical and technical context to determine whether the identified painting materials and techniques could be used as markers. This holistic approach thus allowed us to simultaneously assess art historical and technical data in order to systematically refine our observations and conclusions. As such, the selected markers could be determined for the painting under study, allowing a comparison with the working procedures of Van Dyck. In what follows, we elaborate on the results of the proposed object-based methodology applied to the specific case.

Based on the identified working procedures of Van Dyck, the layer build-up, chemical composition and microstructure of the painting were determined by chemical analysis and imaging techniques (e.g. IRR, XRR, Portable XRF, FE-SEM-EDX and MA-XRF scanning). From this working procedure, a set of 4 markers could be identified opposing the painting's current attribution to Van Dyck. First, the identified type of support of the painting *Saint Jerome*, which is plain-weave canvas with a low density, deviates from Van Dyck's choice of canvas supports. More specifically, he preferred plain and tabby-weave canvas with a high density. Second, the picture is painted on top of a red chalk-based ground with a grey priming. This canvas preparation type differs from Van Dyck's usage of white and pale colored chalk-based grounds with various types of primings. Third, the identified blue pigment employed in the painting *Saint Jerome* for the depiction of the blue drapery is smalt. Van Dyck, however, favored the usage of the organic pigment indigo to construct blue draperies. Fourth, the identified complex method of paint application to depict the flesh tones in the painting *Saint Jerome* substantially diverges from Van Dyck's art practice, who models the human flesh in a single layer. In conclusion, the materials and techniques used in the picture *Saint Jerome* clearly deviate from Van Dyck's working process. These findings thus led us to the conclusion that the painting is not by Anthony van Dyck.

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