



European Materials Research Society

2024 Spring Meeting

May 27 - 31 / Strasbourg Convention Centre

SYMPOSIUM N

Cultural heritage and materials science: unveiling the past, inspiring the future

Symposium Organizers:

A. João Pedro VEIGA (Main organizer), Universidade Nova de Lisboa, Caparica, Portugal

B. Koen JANSSENS, University of Antwerp, Belgium

C. Hongjie LUO, University of Shanghai, P. R. China

Monday May 27

N01_Pigments and artists materials

VARSOVIE - GROUND FLOOR

08:45	2028	INV	Influence of binder composition on the response of tempera paintings to Yb-doped fibre laser: new insights	RIVAS BREA Teresa
09:15	3034		Monitoring the drying and aging of egg-tempera paint by single-sided NMR and FT-IR spectroscopy	GERONY Floriane
09:45	2497		From Freedom to Faded: Exploring the color fading of Street Art Murals in Milan	GUARNIERI Nicolò

Monday May 27

N02_Pigments and artists materials

VARSOVIE - GROUND FLOOR

10:30	1950	INV	Art through science: when lead white reveals the secrets of the masters of Renaissance painting	WALLEZ Gilles
11:00	3038		Non-invasive (chemical) imaging of works of art – two case studies illustrating current possibilities	JANSSENS Koen
11:15	1095		Unveiling the pigment palette and painting techniques in Gallo-Roman wall paintings from Limonum (Poitiers, France)	IULIANO Adriana
11:30	2958		Technical studies of the gilding used in 16th and 17th century Western European paintings	DEBRIE Juliette
14:45	1653		Research, Protection and Restoration of a Pair of Lacquer Drum Chairs with Painted Figures	LI Bing

Monday May 27

N03_Methods in CH Conservation

VARSOVIE - GROUND FLOOR

13:45	1180	INV	Susceptibility Evaluation of Polymeric Consolidants Used in Conservation of Art and Cultural Heritage	GU Ji-Dong
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14:15	29		The self-stratifying technique applied on unfolding the unearthed bonded silk	GONG Yuxuan
14:30	302		Technical advantages of traditional limewashes for conservation of fragile surfaces of cultural heritage	DETTMERING Tanja
14:45	335		Smart materials for the environmentally friendly cleaning and protection of cultural heritage artifacts	RATHOUSKY Jiri
15:00	228		Reflections on performance of sacrificial materials for surface restoration of immovable cultural heritage	DAI Shibing
15:15	2071		Persistently luminescing materials used during the WW2: Composition, properties and possible restoration	VALENTA Jan
15:30	3015		Sustainable Preservation of Plastics: Mapping Environmental Conditions that Prevent Mechanical Damage in Plastics Objects during Sustainable Environmental Management	OLENDER Jacek
15:45	19		Present and Future of Thermoplastic Elastomers (TPEs) as Potential Alternative to Conventional Rubbers	NASKAR Kinsuk

Monday May 27

N04_Heritage Materials

VARSOVIE - GROUND FLOOR

16:30	461	INV	Tomographic study of a magic roll	ITIÉ Jean-Paul
17:00	2728		Versatile Multifunctional Boron Nitride Polymer Aerogels for VOCs Sensing	MESSINA Elena
17:15	2340		The origin of celluloid composites: an interdisciplinary study about billiard balls	NEVES Artur
17:30	1007		Temporary consolidation of marine artifact based on PVA/TA reversible hydrogel	HAN Xiangna
17:45	906		Progress of some novel consolidants for conservation of heritage relics	JI Shidong
18:00	1460		Preserving Paper-Based Cultural Heritage: Non-Invasive Techniques and Protocols for Assessing and Restoring flooded Ancient Books	CHIRIU Daniele
18:15	645		Characterization of wheat starch paste for paper conservation	LUO Yanbing

Tuesday May 28
N05_Microbial Corrosion

VARSOVIE - GROUND FLOOR

08:45	1744	INV	Corrosion mechanisms and microbial corrosion of excavated cultural relics	ZHANG Kexin
09:15	809		Microbial Deterioration Prediction and Assessment of Architectural Paintings Based on Htgrothermal Coupled Transfer in the Forbidden City, China	MA Yan
09:30	1237		Combating Mold and Insect Infestation: Unveiling a Novel Archive Packaging	MAI Bingjie
09:45	1719		Microbial corrosion on underwater pottery relics with typical biological condensation disease	ZHAO Meng

Tuesday May 28
N06_Metals Corrosion

VARSOVIE - GROUND FLOOR

10:30	1526	INV	Metallurgy of as cast bronzes from archaeological site: investigation on the effect of mould materials on the microstructural features	PICCARDO Paolo
11:00	1462		Electrochemical probe for localized corrosion measurements on cultural heritage artefacts	SPOTORNO Roberto
11:15	1615		2024 alloy with thick corroded layer as a mock-up of ancient aircraft aluminium alloys: synthesis and characterization	KADDAH Roua
11:30	1087		Syntheses and characterization of thick corrosion layers on steels to simulate corroded artefacts	RASSIF Yasser

Tuesday May 28
N07_Glass and Ceramic 1

VARSOVIE - GROUND FLOOR

13:45	2834	INV	Through the limelight: Analysing the earliest collection of magic lantern glass slides in Portugal	VILARIGUES Márcia
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14:15	2776		When from technology comes beauty: a scientific insight into the inlaid gem-glass family from the National Archaeological Museum in Aquileia	DI MARTINO Daniela
14:30	2276		Physical and structural characterization of new leadless glazes developed for the National Manufacture of Porcelain of Sèvres.	LE BESCOND DE COATPONT Aziliz
14:45	2451		Effect of composition and water cleaning on the chemical durability of Cultural Heritage model glasses in humid atmosphere	LAW Thalie
15:00	1741		Study on glaze Color mechanism of Changsha Kiln in Tang Dynasty: 3d elements and their Valence and microstructure	LI Qiang
15:15	3039		Luminescent glass materials development through the study of historical yellow stain glass	RUIVO Andreia
15:30	2991		The glaze and colours of two 17th-century azulejo panels from Belém, Lisbon: a material characterisation study	COENTRO Susana
15:45	882		The growth mechanism of ϵ -Fe ₂ O ₃ crystals in Chinese ancient glazes and color generation of purple-gold glazed porcelains	WANG Fen

Tuesday May 28

N08_Glass and Ceramic 2

VARSOVIE - GROUND FLOOR

16:30	2473	INV	Decipher, Understand, and Compare the Enameling Techniques of Imperial Porcelain of the Qing Dynasty by Non-Invasive On-site Analysis	COLOMBAN Philippe
17:00	238		Color and Texture of the High-Fired Ancient Chinese Glazes	LI Weidong
17:15	1313		Use of lead-tin "calx" in the production of tin-opacified Renaissance glazes from Della Robbia and Palissy productions	BOUTENEGRE Lise
17:30	874		Micro-structural Study of the Coloring Variation of Chinese Sauce Glaze Replications	WANG Tian
17:45	2044		Study on the Chemical Composition and Preparation Technology of White and Black wares in Xin'an kilns, Henan province, China	REN Zhao

18:00	2954	Characterization of colored glazes on architectural bricks from Neo-Assyrian and Achaemenid periods	BEAUVOIT Emmie
18:15	729	Technological integration and innovation in architectural ceramics in the Yuan Dynasty: chemical investigation for the glazed tiles of the Prince Anxi' s mansion, China	SHI Ruoyu

Wednesday May 29
N09_Cultural Heritage

VARSOVIE - GROUND FLOOR

08:45	483	INV	Hazard Assessment through Atlas (Art-Risk 5): Climate-Construction Interaction in Historic Cities.	ORTÍZ Pilar
09:15	31		An International Comparison of the Cultural Competitiveness of World Heritage Sites in China	CHENG Wei
09:30	1078		Biocompatible fluorescent carbon dots nanoparticles for anti-counterfeiting of cultural artefacts	DUARTE Théo
09:45	604		DNA and gold nanoparticles-based biosensors to protect archeological goods	GAILLARD Margaux

Wednesday May 29
N10_Water interaction

VARSOVIE - GROUND FLOOR

10:30	111	INV	In-situ synthesis of the hydroxyapatite consolidant within the deteriorated waterlogged ivories from Sanxingdui excavation site	MA Xiao
11:00	1235		Study on Controllability of In-situ Groundwater Evaporation Guidance for Wooden Structure Ruins in Northwest China	CAO Jing
11:15	524		Lignin-based biomass nanomaterials for waterlogged archaeological wood conservation	ZHANG Jingwen
11:30	213		Preventing the secondary salt deterioration in the repaired area of basal erosion of earthen sites based on capillary barrier effect	JIA Bobo
11:45	521		Influence of the wettability characteristics of mural materials on the salt-water behaviors: taking Xi'an Sanhuang mural as an example	XIA Qixing

Wednesday May 29
NP01_Poster session

ETOILE - FIRST FLOOR

13:45	01_1252	105	01_1252 Preliminary study on shrinkage interfering factors of superplasticizer-free lime grouts for conservation of historic masonry	WU Yang
13:45	02_1400	105	02_1400 Plant-based polymeric thin films tailored for heritage wood conservation and obtained by atmospheric pressure plasma skirt jet	LAZEA-STOYANOVA Andrada
13:45	03_1463	105	03_1463 Characterization of Sardinian Historical Pigments: Non-Destructive Techniques and Multivariate Analysis at the University Library of Cagliari	CHIRIU Daniele
13:45	04_1721	105	04_1721 Derivation of promising technologies in materials science-related fields to cope with climate change	YOO Ran
13:45	05_188	105	05_188 Development of new generation multifunctional bio-polymer based ZnO/CuO nanostructured coating for the control of deterioration of cultural heritage	MANDAL Sanhita
13:45	06_189	105	06_189 Cultural Resources Management in America and Its Lessons to Cultural Heritage Conservation in China	SONG Lulu
13:45	07_20	105	07_20 Multi-functional TiO ₂ -based nanocomposite coating with durable superhydrophobicity and enhanced photocatalytic and antimicrobial properties for the safeguard of outdoor stone artworks	CAO Yijian
13:45	08_2095	105	08_2095 Preservation and Reproduction of an Ancient Human Humerus through X-ray Microscopy and 3D Printing	ALEMANNO Valentina
13:45	09_2159	105	09_2159 A methodological approach to the study of micro-plant fossil from stone knives: Evidence from the Zhengluo region of central China during late YangShao Period	TAO Dawei
13:45	10_2164	105	10_2164 A methodological approach to the study of micro-plant fossil from stone knives: Evidence from the Zhengluo region of central China during late YangShao Period	TAO Dawei
13:45	11_2263	105	11_2263 Temporal-spatial distribution of water in grotto sandstones characterized by nondestructive testing	ZHANG Yue

13:45	12_246	105	12_246 Earth inspector (Art-Risk 1.0): An APP for Monitoring Degradation in Earthen Historic Fortifications.	ORTÍZ Pilar
13:45	13_2552	105	13_2552 Characterization Analysis of a 19th Century Icon: The Holy Trinity from Kavakli	MALLETZIDOU Lamprini
13:45	14_2568	105	14_2568 The green color in the glass wall mosaic tesserae of St Sophia, Thessaloniki: An archaeometric investigation	MALLETZIDOU Lamprini
13:45	15_2614	105	15_2614 The study of weathering of historical oil paints	ZÁRYBNICKÁ Lucie
13:45	16_2666	105	16_2666 Effect of Pressure on Structural, Electronic, Magnetic and Fermi Surface Properties of EuNi ₂ P ₂ : An Ab-initio Study	ROQAN Iman S
13:45	17_2690	105	17_2690 Temporal-spatial distribution of water in grotto sandstones characterized by nondestructive testing	ZHANG Yue
13:45	18_2712	105	18_2712 Using molecular biology techniques to species identification of leather Cultural Heritages	WU Qian
13:45	19_2716	105	19_2716 Characterization of historical mortars from built heritage: an adapted methodology for the case of small samples	VEIGA Joao Pedro
13:45	20_2722	105	20_2722 A non-invasive introductory archaeometric study of Gharb Al Andalus Ceramics from Alto da Queimada (Palmela, Portugal)	VEIGA Joao Pedro
13:45	21_2738	105	21_2738 POW camp 65 (Altamura, Southern Italy): a case study for archaeometry and contemporary archaeology.	MASTRORILLI Monica
13:45	22_2937	105	22_2937 SyncLab for cultural heritage – joint X-ray imaging and spectroscopy measurements at the synchrotron and in the laboratory	MANTOUVALOU Ioanna
13:45	23_3027	105	23_3027 Thermoset composites with intrinsic self-healing functionality	MARICONDA Annaluisa
13:45	24_488	105	24_488 Study on the Protection and Restoration of a Land-and-Water Painting in Qing Dynasty	BAI Jing
13:45	26_857	105	26_857 Influence of climate change on cultural heritage decay : data collection methodology for monitoring weathering via computer models	CORMIER Adèle
13:45	27_894	105	27_894 Analysis on the Production Technology of the Protector of the Dharma Carving at Dazu Rock Carvings	ZHAO Qianqiao

13:45

28_964

105

28_964 Novel anti-microbial formulations
as promising coatings applicable for
conservation of cultural heritage objects

DITU Lia-Mara

Thursday May 30
N11_Building Materials 1

VARSOVIE - GROUND FLOOR

08:45	1112	INV	Notre-Dame de Paris: the contribution of (material) science to the rebirth of a cathedral	DILLMANN Philippe
09:15	2737		Materials chemistry advance in safeguarding historical concrete reinforcing bars: innovative mesoporous silica based smart nanocarriers for corrosion inhibition	MASTRORILLI Monica
09:30	2648		Innovative materials for corrosion protection in Concrete Heritage: from material design to in situ application	DI CARLO Gabriella
11:15	1651		Preliminary study on materials and technique of wall painting from affiliate building remain excavated in Emperor Qinshihuang's cemetery	ZHANG Weixing

Thursday May 30
N12_Building Materials 2

VARSOVIE - GROUND FLOOR

10:30	22	INV	Enhanced consolidation efficacy and durability of highly porous calcareous building stones enabled by nanosilica-based treatments	CAMAITI Mara
11:00	646		Quantitative Research on the Development Difference of Scaling Off on the Sunward Side and Nightside of Earthen Sites	DU Yumin
11:30	1432		Research on the Craftsmanship of Gilding Buyao Unearthed from Western Jin Tombs at Xiaoweiying Tombs in Qinyang, Henan Province	YAN Haitao
11:45	1071		Accurate identification and extraction of volatile organic salts on the Han Dynasity Eaves Tiles	ZHAO Na

Thursday May 30
N13_Organic Materials 1

VARSOVIE - GROUND FLOOR

14:15	628	Rediscovering Literati Elegance: Fragrant Echoes of 1,000-Year-Old Incense from the Fan Tomb, Xi'an, China	QI Xuekai
14:30	2074	Comparative Study of the Lacquering Materials and Techniques in Different Period of Times in China	WEI Shuya
15:15	1258	Artificial deteriorating silk and its application in cultural relics restoration	YANMEI Li
15:30	332	Automation in organic residue analysis in ceramics: a step toward to upscaling analyses	DING Li
15:45	1103	Researching and Analyzing the Performance of Ming Dynasty Silt Cultural Layer at the Zhouqiao Relics Site in Kaifeng	LI Yanhong

Thursday May 30
N14_Organic Materials 2

VARSOVIE - GROUND FLOOR

16:30	2602	INV Through the Fire and Flames: Investigating the organic markers of wall paintings under a compartment fire protocol	MALLETZIDOU Lamprini
17:00	2832	Oligoesters additives for the tuning of Castor Oil-based Polyurethanes properties	BANDELLI Damiano
17:15	307	Exploratory study of in situ consolidant for fragile organic relics in high humidity environments in archaeological sites	ZHAO Xing
17:30	1524	Observations on the correlation between the non-uniformity of traditional handmade paper and its forming techniques	CHENGQUAN Qiao
17:45	835	Capture of volatile organic compounds by porous hybrid materials (MOFs) for the conservation and exhibition of mummies in the museum	DASGUPTA Sanchari
18:00	731	Discussion of the potential use of the traditional Chinese papers in the facing treatments of oil painting restoration.	LI Bo