Lasers in the Conservation of Artworks

LACONA XIII

Florence - September 12-16, 2022

Organized by
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PROGRAM

Monday 12/09/2022

14:30-18:30	**Registration and Welcome Drink**

Tuesday 13/09/2022

08:30-09:00	**Registration**		
09:00-09:30	**Welcome address: A Nardini** (Tuscany Region), **S Rossi** (OPD), **E Schmidt** (Uffizi Gallery)		
09:30-10:00	**Marco Leona** (Invited speaker)	***Lasers & Light in an Art Museum***	2
10:00-10:20	**P Targowski**	*A mystery of a 17c. Hebrew grammar book – back to the 11th century*	10
10:20-10:40	**D Ciofini**	*Laser induced photothermal texturing for enhancing solvent action in removal of unwanted oil-based paints*	171
10:40-11:10	**Coffee break**		
Session 1: *Laser Treatments of Metal Artefacts*			
11:10-11:30	**W Kautek**	*Pulse-Laser-Induced diagnostics of historical and artificial copper patina*	99
11:30-11:50	**D Prokuratov**	*The use of femtosecond laser pulses in the cleaning of archaeologically corroded iron and copper objects*	101
11:50-12:10	**M Baruffetti**	*The restoration of the amalgam gilded bronze elements and of the enamelled and gilded strips of the Baptismal Font of Siena: remarks on laser ablation in combination with other cleaning methods*	103
12:10-12:30	**G Rotondi**	*A new method for laser ablation in underwater irradiation conditions of large bronze artifacts*	105
12:30:12:50	**S Courtier** **V Detalle**	*A new approach for the restoration of gilded surfaces: Revealing original decors of the "Bargueño" (16th century) by Er:YAG laser processing controlled by optical coherence tomography (OCT)*	109
12:50-13:10	**R Lahoz**	*Innovative procedure for assessing laser interaction mechanisms on copper alloys and its validation on archaeological corrosion products*	112
13:10-14:30	**Lunch break**		
Session 2: *Laser Treatments of Stone and Glass artefacts, and Bones*			
14:30-14:50	**J Brand**	*Comparison between short pulse and ultrashort pulse laser cleaning of heritage stonework*	118
15:10-15:30	**LA Angurel**	*Application of ultra-short pulse lasers in the restoration of historical stained-glasses*	120
14:50-15:10	**M Laboure**	*Laser cleaning of graffitis and cleaning evaluation using FTIR*	122
15:30-15:50	**AJ López**	*Evaluation of femtosecond laser texturing of natural stones for conservation applications in the field of Cultural Heritage*	124
15:50-16:10	**A Andreotti** **C Di Marco**	*Combined used of Er:YAG and Nd:YAG lasers for the cleaning of marble sculpture from the portico of the Monumental Cemetery of Pisa*	126
16:10-16:30	**Coffee break**		
16:30-16:50	**MA Rahman**	*Application of Femtosecond UV Laser for Selective Cleaning of Archaeologically Significant Pleistocene Bones*	129
	Poster Pitch 1: *Laser Treatments of Metal and Stone Artefacts*		
16:50-17:30	**E Promise** (132), **J Brand** (134), **B Dajnowski** (136), **Y Ding** (137), **K Nakahara** (139), **E Kourti** (141), **I Osticioli** (143), **AL Castro Do Amaral** (145), **V Pouli** (115)		
17:30 -17:50	**L Bartoli**	*Laser products for conservation by El.En.*	

Wednesday 14/09/2022

08:30-13:00	**Excursion** **- Brancacci Chapel** Church of Santa Maria del Carmine in Florence Thank to the kind collaboration of the Municipality of Florence **- Museo Nazionale del Bargello** Thank to the kind collaboration of the Musei del Bargello, Ministry of Culture, Florence **- Other sites** under definition

13:00-14:10 **Lunch break**

Session 3: *Photonic Diagnostics of Painted Surfaces*			
14:10-14:40	**Austin Nevin** (Invited Speaker)	***Applied photonics vs. conservation in practice***	5
14:40-15:00	**V Tornari**	*A combined ND diagnostic investigation by DHSPI, SIRT, THZ, NMR, on Giotto fresco*	13
15:00-15:20	**C Riminesi**	*Non-destructive diagnostic investigations on the architectural layout of the Brancacci's chapel in Firenze*	15
15:20-15:40	**M Francucci**	*Detection of low contrast paintings by post-processing data collected with three laser stimuli elastic channels*	17
	Poster Pitch 2 *Photonic Diagnostics of Painted Surfaces*		
15:40-16:20	**I Cortea** (27), **A Nevin** (30), **J Auber-Le Saux** (32), **C Richardson** (35) **PK Śwituszak** (37), **Rippa** (39), **I Shaheen** (41)		

16:20-16:40 **Coffee break**

Session 3 (continued)			
16:40-17:00	**J Schenatto**	*Non-destructive methods of analysis applied to the study of Oscar Pereira da Silva paintings*	20
17:00-17:20	**C Cucci**	*Hyperspectral imaging leafs through the Picasso Blue Period: the case-study Copa Blava (Blue Glass)*	22
17:20-17:40	**A Dal Fovo**	*Novel integration of non-invasive imaging techniques for the analysis of an egg tempera painting by Pietro Lorenzetti*	24
	Poster Pitch 2 (continued)		
17:40-18:10	**G Chiarello** (42), **I Cortea** (44), **K Petrakis** (46), **L Ghervase** (48) **M Dinu** (50), **A Suzuki** (51)		

Thursday 15/09/2022

09:00-09:30	**Giorgio S Senesi** (Invited Speaker)	***LIBS: a powerful analytical tool for the geochemical diagnostics of stone artifacts***	6
09:30-09:50	**J Agresti**	Photothermal aspects in photonic diagnostics and laser treatments	54
Session 4: Advances in Compositional Photonic Diagnostics			
09:50-10:10	**A Giakoumaki**	*Development of a hybrid portable instrument performing LED-Induced Fluorescence, LIBS and Diffuse Reflectance for an integrated study of diverse surface layers/deposits on monuments*	57
10:10-10:30	**X Bai**	*Remote spectroscopic system combined LIBS, LIF Raman spectroscopy and reflectance spectroscopy for cultural heritage*	59
10:30-10:50	**F Mirani**	*Laser-driven particle acceleration for elemental characterization of artworks*	62
	Poster Pitch 3: Advances in Photonic Diagnostics		
10:50-11:20	**S Richiero** (85), **F Surma** (87), **I Donate Carretero** (89), **AJ López** (91) **V Knotek** (91), **GS Senesi** (95)		
11:20-11:40	**Coffee break**		
Session 4 (continued)			
11:40-12:00	**A Philippidis**	*Observation and mitigation of light-induced alterations of lead pigments in their study via Raman microscopy*	65
12:00-12:20	**I Osticioli**	*Advances on temperature controlled Raman spectroscopy*	67
12:20-12:40	**P Carmona**	*Development of new SERS sensors based on the laser irradiation of the major hydration product of Portland cement*	69
12:40-13:00	**S Kogou**	*Combining multimodal ground based remote sensing with machine learning for monitoring and identification of salts on historical buildings*	71
13:00-13:20	**A Busacca**	*Deep learning models for MA-XRF imaging Spectroscopy of paintings*	73
13:20-14:30	**Lunch break**		
Session 5: *Advances in Imaging Diagnostics*			
14:30-14:50	**M Oujja**	*In-depth structural and compositional assessments of aged terpenoid varnish layer*	76
14:50-15:10	**V Parfenov**	*Use of Laser Additive Technologies for Restoration of Artworks*	78
15:10-15:30	**S Mazzocato**	*A novel paradigma for accurate laser microprofilometry of poly-chrome artworks based on dual reflectance-heights surface dataset*	80
15:30-15:50	**D Cimino**	*Integrating Thermal Quasi-Reflectography in manuscript imaging diagnostic protocols to improve non-invasive chemical investigation*	82
Session 6: *Laser treatments of fibrous and membranous material artefacts*			
15:50-16:10	**N Brockmann**	*Application of laser technology for the cleaning of silk Comparison of different laser parameters and the effects of cleaning on the fibre*	147
16:10-16:40	**Coffee break**		
	Poster Pitch 5: *Fibrous and Membranous*		
16:40-17:05	**C Mammoliti** (151), **M Bertasa** (153), **A Di Matteo** (155), **AC Machado** (156), **M Dinu** (158) **S Vegni** (160), **C Chillè** (162), **G Rossignoli** (164), **V Scaglia** (166), **C Donati** (168)		
Session 7: *Laser treatments of Painted Surfaces*			
	Poster Pitch 6: *Laser Treatments of Painted Surfaces*		
17:10-18:00	**M Iwanicka** (193), **M Havlová** (195), **F Azolini** (197), **C Riminesi** (199), **C Ricci** (201) **G De Cesare** (203), **K Nakahara** (205), **D Ciofini** (207), **C Chillè** (209), **A Brunetto** (211)		
~ 20:30	**Social Dinner**		

Friday 16/09/2022

Session 7: *Laser treatments of Painted Surfaces*			
09:30-09:40	**V Detalle** **D Martos-Levif**	*Laser cleaning of the painted frames of the Issenheim altarpiece in Colmar (FR)*	171
09:40-10:00	**B Dajnowski**	*Waiting for Science to Catch Up to the Problem: The Development and Application of a Custom-Designed Green Laser System to Remove Decades Old Penciled Graffiti on Raw Canvas from Morris Louis' Masterwork, Beta Upsilon.*	176
10:00-10:20	**EA Furgiuele**	*Egyptian Limestone Polychrome Statues: Laser Cleaning in Comparison with Traditional Methods*	177
10:20-10:40	**A Dajnowski**	*You Can Clean But Cannot Touch. Graffiti Removal From Prehistoric Pictographs at Hueco Tanks State Park & Historic Site Using Laser Ablation Process*	178
10:40-11:00	**T De Seauve**	CW-laser thermal restoration of oxidized lead white in mural paintings	180

11:00-11:30 **Coffee break**

Session 7 (continued)			
11:30-11:50	**A Suzuki**	*2D high lateral resolution XRPD mapping for the in-depth characterization of CW NIR laser irradiation to thermally induce the conversion of plattnerite into red lead pigment*	182
11:50-12:10	**A Faron**	*Finding a path for resolving laser cleaning problems – selected aspects of the preliminary studies and implementation process of a new type of IR laser with high repetition of pulses to conservation-restoration practice*	184
12:10-12:30	**E Dimitroulaki**	*Photoacoustic monitoring of UV laser ablation of aged varnish coatings on Heritage objects*	186
12:30-12:50	**M Camaiti**	*In-situ and rapid assessment of Er:YAG laser cleaning on easel paintings by a portable hyperspectral sensor*	188
12:50-13:10	**F Zenucchini**	*Laser applications in the conservation of archaeological artifacts: polychrome wooden objects from ancient Egypt*	190

13:10-14:30 **Lunch break**

14:30-15:15	**Best Poster Award, Closing remarks: Publications, LACONA XIV …**