



ASSOCIAZIONE  
ITALIANA DI  
ARCHEOMETRIA

**X** CONGRESSO NAZIONALE

14-17 FEBBRAIO 2018 **TORINO**

**AIAR**

**VENTICINQUE ANNI DI AIAR**

**ABSTRACT BOOK**



**UNIVERSITÀ DEGLI STUDI DI TORINO  
DIPARTIMENTO DI SCIENZE DELLA VITA E BIOLOGIA DEI SISTEMI  
VIA ACCADEMIA ALBERTINA, 13  
TORINO**

## ORGANIZZATORI



UNIVERSITÀ  
DEGLI STUDI  
DI TORINO



POLITECNICO  
DI TORINO



UNIVERSITÀ DEL PIEMONTE ORIENTALE



Istituto Nazionale di Fisica Nucleare  
Cultural Heritage Network



ISTITUTO NAZIONALE  
DI RICERCA METROLOGICA



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Vallée d'Aoste  
Regione Autonoma  
Valle d'Aosta



CENTRO  
CONSERVAZIONE  
RESTAURO  
LA VENARIA REALE

**TecnArt**  
Tecnologia e ricerca per l'Arte

Assessorat de l'Éducation  
et de la Culture  
Assessorato Istruzione  
e Cultura

## CON IL CONTRIBUTO DI



UNIVERSITÀ  
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DI TORINO



Fisica  
Torino



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Ministero  
dei beni e delle  
attività culturali  
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CITTA' DI TORINO



Società Chimica Italiana  
Divisione di Chimica  
Ambiente e Beni Culturali



G.A.B.E.C.  
GEOLOGIA - AMBIENTE - BENI CULTURALI  
SIMP  
Società Italiana di Mineralogia e Petrologia

ME MUSEO  
EGIZIO



museo  
galileo

Istituto  
e Museo  
di Storia  
della Scienza



## CON LA COLLABORAZIONE DI



DBios



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DIPARTIMENTO DI SCIENZE DELLA TERRA  
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UNIVERSITÀ DEGLI STUDI DI TORINO



GRUPPO ARCHEOLOGICO  
TORINESE

Si ringrazia Lorena Canottiere per la realizzazione del logo del Congresso

## **COMITATO SCIENTIFICO**

Maurizio Aceto  
Francesca Alberghina  
Emma Angelini  
Lorenzo Appolonia  
Rosa Boano  
Susanna Bracci  
Diego Elia  
Roberto Giustetto  
Celestino Grifa  
Monica Gulmini  
Mauro Francesco La Russa  
Alessandro Lo Giudice  
Carmine Lubritto  
Ferruccio Petrucci  
Emanuela Sibia

## **COMITATO ORGANIZZATORE**

Debora Angelici  
Elisa Calà  
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Sabrina Grassini  
Paola Iacomussi  
Ambra Idone  
Marco Nervo  
Alessandro Re  
Evdokia Tema

## **COMITATO ORGANIZZATORE SCUOLA**

Eliano Diana  
Giorgio Di Gangi  
Beatrice Failla  
Silvia Ferrarese  
Anna Piccirillo  
Rosanna Piervittori  
Selena Viel

## **SESSIONI**

## **CODICE**

Caratterizzazione e Diagnostica

C&D

Conservazione Preventiva e Restauro

CP&R

Materiali Innovativi e Nanotecnologie

MI&N

Provenienza e Datazione

P&D

Tutela e Valorizzazione

T&V

Bioarcheologia & Interazione Uomo-Ambiente

B&IUA

Diffusione e divulgazione scientifica nei Beni Culturali

DDSBC

Innovazione tecnologica

ITec

Mercoledì 14 Febbraio 2018

Dalle ore 10.00 Registrazione

### Aula Magna

- 14.00 - 14.30 Saluti istituzionali  
14.30 - 14.50 Apertura lavori - Carmine Lubritto "AIAR oggi e domani"  
14.50 - 15.50 Conferenza a invito - Christian Greco "Archeologia dell'invisibile"  
15.50 - 16.20 Pausa caffè  
16.20 - 18.20 Sessioni orali parallele

### Aula Magna - Caratterizzazione e diagnostica

Chair: Sabrina Grassini

16.20	J. Vernet, G. Ghiara, P. Piccardo, G. Voland	Tin oxides inclusions in early archaeological bronzes can be a marker of metal recycling?
16.40	M. Capris, M. Bortolotti, L. Lutterotti, B. T. Marciniak, D. Martorelli, G. Peponi, S. Gialanella	A multi-analytical approach to the study of ancient coins: the case of the Venetian "sesino".
17.00	M. Di Fazio, A. C. Felici, F. Catali, C. De Vito	Study of dezincification in orichalcum Roman coins
17.20	D. Di Martino, C. Cucini, E. Perelli Cippo, G. Gorini, M. P. Riccardi	Bulk and point measurements as tools for the reconstruction of ancient metallurgical techniques: the filigree of the Chiaravalle Cross and the nails of the archaeological site of Valle delle Forme (Val Camonica, BS)
17.40	A. Elsayed, E. Angelini, S. Grassini	Microstructural and morphological characterisation of ancient bronze coins from the archaeological site of Al-Fustat city in Egypt
18.00	G. Berruto, E. Diana, R. Giustetto, M. Venturino	Sea treasures and ancient trade: archaeometrical investigation on Iron Age bronze fibulae with inserts

### Aula B - Conservazione preventiva e restauro

Chair: Rosa Boano

16.20	L. D'Alessandro, S. Sottile, C. Pelosi, G. Calabrò, C. Colantonio, M. Melis	Hyperspectral Imaging system for Cultural Heritage diagnostics: an innovative study for copper painting application
16.40	G. Gregori, M. Rossani, P. Del Vesco, M. Borla, A. R. Zink, A. Paladin, C. Wurst, F. Maixner, M. Cibir, K. Sterflinger-Gleixner, G. Pinar, M. Samadelli	Studies aimed at the preservation of the mummified remains of the Museo Egizio in the framework of Mummy Conservation Project
17.00	C. Oliva, S. Aicardi, M. Borla, D. Angelici	The animal mummies of the Museo Egizio: study and conservation
17.20	Z. Vangelatos, M. Delagrammatikas, O. Papadopoulou, P. Vassiliou	A Computer Simulation Study of Free and Constraint Steel Clamps in a Marble Wall of a Classic Period Monument
17.40	M. Monego, G. Targa, C. Previato, A. Menin, V. Achilli	Integration of geomatic methodologies applied in a multidisciplinary approach to the study, conservation and valorization of Cultural Heritage: the case study of the Sarno Baths (archaeological site of Pompeii)
18.00	L. Bertrand, I. Joosten, K. Keune, A. Simon, F. Zanini	Best Practices for a Safe Analysis of Paintings and Painting Materials with Ionizing Radiation

### Aula C - Provenienza e Datazione

Chair: Alessandro Lo Giudice

16.20	L. Casas, E. Tema	Investigating the precision of archaeomagnetic dating during the last 3000 years
16.40	A. Galli, M. Caccia, M. Martini, L. Panzeri, F. Maspero, S. Fiorentino, M. Vandini, E. Sibilia	Thermoluminescence dating of glass: applying the "pre-bleached with blue LEDs" protocol to Umayyad mosaic tesserae
17.00	L. Liccioli, G. Fabiani, S. Barone, M. Fedi, M. Togni	Radiocarbon wiggle matching as a high-resolution dating method: the example of Villa Rucellai in Florence
17.20	A. M. Gueli, V. Garro, O. Palio, S. Pasquale, G. Politi, G. Stella, M. Turco	The chronology of the Valcorrente site in Belpasso (CT) obtained by ThermoLuminescence
17.40	M. Ferrante, G. Pardini, S. Nisi, P. R. Trincerini, M. L. Di Vacri	Precise lead isotope ratios measurements for geographic attribution of some ancient coins
18.00	S. Omarini, R. Fontana, J. Striova, P. Baraldi, P. Zannini, M. E. Fedi, M. Galeotti	Notes on Vestorius' blue – New findings and investigations

19.00-20.00 Museo Egizio: visita a porte chiuse con egittologi in sala

20.00-22.00 Museo Egizio: Apericena nella Galleria dei Re

Giovedì 15 Febbraio 2018

Aula Magna

9.00 - 10.00 Conferenza a invito - Sofia Pescarin "Applicazioni digitali e musei: stato dell'arte e prospettive future"

10.00 - 11.00 Sessione FOCUS

Innovazione tecnologica

Chair: Carmine Lubritto

10.00	<u>M. Girona</u> , R. Alberti, R. Tagle, C. Vailati	XRF Mapping, the experience from industry
10.15	<u>S. Pazzani</u> , J. Jussila	Hyperspectral imaging on-site: world first portable push-broom hyperspectral camera
10.30	A. Pili	Climate monitoring systems for the conservation of cultural assets
10.45	R. Tagliapietra	Raman spectroscopy latest techniques in archaeological and historical artifacts studies

11.00-11.20 Pausa caffè

11.20-13.00 Sessioni orali parallele

Aula Magna - Caratterizzazione e diagnostica

Chair: Maurizio Aceto

11.20	<u>A. Impallaria</u> , L. Volpe, F. Petrucci, F. Tisato	The artistic palette of Carlo Bononi, Baroque artist of Ferrara
11.40	R. Caliendo, V. Toson, L. Palin, E. Conterposito, M. Aceto, V. Gianotti, E. Boccaleri, E. Doorhyee, M. Milanesio	New hints on Maya Blue formation process by PCA-assisted in situ XRPD and optical spectroscopy analysis
12.00	<u>N. Odisio</u> , A. Idone, N. Seris, M. Calabrese, S. Migliorini, A. Glarey, L. Appolonia	Creation of a database of restoration products on different supports with portable NIR-FORS
12.20	P. Pallecchi, G. Giachi, <u>E. Pecchioni</u> , P. Santo Alba	Etruscan Paintings of the Demoni Alati Tomb in the Sovana Necropolis (Southern Tuscany, Italy)
12.40	<u>A. Piccirillo</u> , T. Poli, V. Rosciardi, G. Afruni, O. Chiantore, E. Diana	Formation of metal soaps in painting layers: a study on kinetics and reactivity

Aula B - Diffusione e divulgazione scientifica nei beni culturali

Chair: Emma Angelini

11.20	<u>T. Pasciuto</u> , M. Di Fazio, F. Di Turo	The Challenge of Divulgation: an experiment called "Research for Cultural Heritage"
11.40	E. C. Portale, S. Aiosa, E. Caponetti, <u>D. Chillura Martino</u> , M. Cultraro, M. de Cesare, M. L. Saladino, L. Sineo	Dialogue and dissemination: Science and Archaeology. The experience of the project "Science and Archaeology: an effective combination for the dissemination of scientific culture".
12.00	<u>A. Gori</u> , E. Angelini	The Galileo Museum of Florence an actor of social inclusion
12.20	<u>C. Fantoni</u> , A. Gori, E. Angelini	Experiencing the scientific divulgation in the medioeval Poppi Castle
12.40	<u>S. Fiorentino</u> , <u>M. Bernadette Melis</u> , M. Vandini	Communicating conservation science through CONCEPT: The case of Palazzo Guiccioli in Ravenna

Aula C - Materiali innovativi e nanotecnologie

Chair: Roberto Giustetto

11.20	A. Veneri, P. Pogliani, G. Agresti, <u>C. Pelosi</u>	Tattoo Wall®: study of the stability of an innovative decorative technique and possible application in the restoration of paintings in outdoor and hypogeum environments
11.40	<u>A. Giordano</u> , V. Rotolo, E. Di Carlo, F. Palla	Novel esterase - microemulsion for the bioremoval of glue residues
12.00	<u>P. Davit</u> , A. Idone, M. Gulmini, E. Calà, M. Aceto	Evaluation of the stability and reproducibility of Ag colloidal pastes as Surface Enhanced Raman Spectroscopy (SERS) substrates for the analysis of natural dyes in archaeological and historical textiles
12.20	<u>L. Iannucci</u> , S. Grassini, E. Angelini, M. Parvis, J. F. Rios Rojas	Electrochemical characterization of innovative hybrid coatings for metallic artefacts
12.40	<u>B. Campanella</u> , T. Cavaleri, S. Legnaioli, E. Grifoni, A. Idone, G. Lorenzetti, S. Pagnotta, A. Piccirillo, F. Poggialini, C. Ricci, M. Borla, V. Turina, V. Palleschi	Surface enhanced Raman spectroscopy and nanoparticle enhanced laser induced breakdown spectroscopy for the study of historical textile dyes and mordants

13.00-13.50 Light lunch  
 13.50-15.00 Sessione POSTER  
 15.00- 16.40 Sessioni orali parallele

### Aula Magna - Caratterizzazione e diagnostica

Chair: Susanna Bracci

15.00	<u>G. Fiocco</u> , T. Rovetta, M. Licchelli, M. Malagodi, F. Zanini, G. Lanzafame, A. Re, A. Lo Giudice, M. Gulmini	Synchrotron radiation micro-CT for the investigation of finishing treatments in ancient bowed stringed instruments: issues and perspectives
15.20	<u>F. Antonelli</u> , V. Iebba, L. Calvo, V. Licursi, P. Tisseyre, S. Ricci, F. Guerrieri	Characterisation of the black patina of the Tiber's embankments by Next-Generation Sequencing
15.40	<u>J. La Nasa</u> , J. J. Lucejko, M. P. Colombini, E. Ribechini	Lipids in archeology: oils and fats characterization by HPLC/ESI-Q-ToF
16.00	<u>R. Mentessana</u> , G. E. De Benedetto, E. Margapoti	Utilization of living space in Early Bronze Age Sicily: results of an interdisciplinary study in Santa Febronia (Italy).
16.20	<u>F. Nardella</u> , M. Colombo, M. Serradimighi, C. Tozzi, I. Degano, E. Ribechini	Gas chromatographic and mass spectrometric investigations of bitumen from Neolithic flint flakes recovered from archaeological excavations in Central-Southern Italy

### Aula B - Tutela e valorizzazione

Chair: Mauro Francesco La Russa

15.00	<u>G. Vidorni</u> , A. Sardella, P. De Nuntiis, F. Volpi, A. Dinoi, D. Contini, V. Comite, C. Vaccaro, P. Fermo, A. Bonazza	Air pollution impact on stones in urban environment: a multidisciplinary approach
15.20	<u>A. Marengo</u> , E. Bittarello, L. M. Gallo, E. Costa	The meteorites held at the Regional Museum of Natural Science of Turin: conservation, valorisation and fruition of a historical scientific collection
15.40	<u>F. Gambino</u> , C. Ricci, M. Nervo, A. Piccirillo, A. Scarcella, A. Borghi	Conservation of urban heritage and stone deterioration patterns in the city of Torino (Italy)
16.00	<u>M. Radis</u> , P. Iacomussi	Influences of optical characteristics of protective varnish on glossiness of painted artefacts
16.20	<u>C. Ricci</u> , F. Gambino, M. Nervo, A. Piccirillo, F. Zenucchini, A. Scarcella, A. De Stefanis, J. S. Pozo-Antonio	Comparison of cleaning procedures for ornamental stones against graffiti vandalism

### Aula C - Caratterizzazione e diagnostica

Chair: Celestino Grifa

15.00	A. Arcudi, V. Crupi, M. F. La Russa, D. Majolino, M. Osanna, R. Pace, S. A. Ruffolo, M. Ricca, N. Rovella, N. Ruggeri, V. Venuti	Tituli Picti in the archaeological site of Pompeii: diagnostic analysis and conservation strategies
15.20	<u>R. C. Ponterio</u> , G. Anastasio, E. Caponetti, V. Mollica Nardo, V. Renda, C. S. Vasi, M. L. Saladino	"Miracula in vitro": in situ spectroscopic study on the largest Italian collection of reverse glass paintings
15.40	C. Grifa, <u>C. Germinario</u> , M. Mercurio, A. Langella, F. Izzo, S. Di Mauro, G. Soricelli	Technology in the production of Red Slip Ware in Campania (Italy): a comparison between Terra Sigillata from Puteoli and Campanian Orange Ware from the Bay of Naples
16.00	L. Angeli, A. Brunetti, <u>S. Legnaioli</u> , C. Fabbri, B. Campanella, E. Grifoni, G. Lorenzetti, V. Palleschi, G. Radi	Analysis of the Middle Neolithic Trichrome pottery: characterization of the decoration using XRF and Raman
16.20	<u>M. Reboldi</u> , E. Tema, E. Ferrara, R. Giustetto, E. Diana, M. Venturino	Archaeometric study of the protohistoric baked clay artefacts from the archaeological site of Villa del Foro (AL)

16.40-17.00 Pausa caffè  
 17.00-18.00 Aula Magna - Assemblea soci  
 18.00-19.00 Passeggiata "TOURinSTONES"  
 Dalle 19.00 Cena sociale & festeggiamenti 25 anni AIAR con quartetto musicale jump swing

Venerdì 16 Febbraio 2018

### Aula Magna

9.00 - 10.00 Conferenza a invito - Matthew Collins "The ancient Biomolecule Revolution"

10.00 - 11.00 Sessioni orali parallele

### Aula Magna - Caratterizzazione e diagnostica

Chair: Maria Luisa Saladino

10.00	<u>S. Bracci</u> , E. Cantisani, M. Coppola, D. Magrini	The tomb of Seti I (KV17) in the Florence Archaeological museum. Integrated non-invasive methods to document, characterize materials and define the conservation assessment
10.20	<u>E. Calà</u> , M. Aceto, A. Agostino, G. Fenoglio, V. Capra, F. Porticelli, F. Manzari, S. Fiddymont	The Messale Rosselli: scientific investigation on an outstanding 14th century illuminated manuscript from Avignon
10.40	<u>C. Ruberto</u> , A. Mazzinghi, C. Czelusniak, L. Palla, S. Mangani, L. Castelli, P. A. Mando, F. Taccetti, F. Giuntini	Identification of pigments, inks and gilding decorations of an illuminated medieval parchment, exploiting the LABEC INFN-CHNet XRF scanning system

### Aula B - Bioarcheologia e interazione uomo-ambiente

Chair: Franco Palla

10.00	<u>B. Demarchi</u> , M. Collins	Birds in ancient societies
10.20	<u>M. Baldoni</u> , G. Scorrano, M. Alexander, F. R. Stasolla, L. T. Marsella, O. Rickards, C. Martínez-Labarga	The Medieval Population of Leopoli-Cencelle: Dietary Pattern Reconstruction through Stable Isotope Analysis from Bone Collagen
10.40	<u>S. Varano</u> , F. De Angelis, G. Amicucci, A. Battistini, S. Di Giannantonio, F. Zavaroni, P. Catalano, C. Lubritto, P. Ricci, S. Altieri, V. Gazzaniga, C. Martínez-Labarga, O. Rickards	Diet and Society: isotope evaluation of Imperial Rome communities (1st-3rd cent. CE)

### Aula C - Caratterizzazione e diagnostica

Chair: Alessandro Re

10.00	<u>E. Di Francia</u> , R. Lahoz, D. Neff, E. Angelini, S. Grassini	ToF-SIMS analyses on laser cleaned bronze coins
10.20	<u>F. Di Turo</u> , N. Montoya, J. Piquero-Cilla, C. De Vito, F. Coletti, G. Favero, M. T. Domenéch-Carbò, A. Domenéch-Carbò	Archaeometric analysis of coins from the Magna Mater Temple: metals characterization and electrochemical dating
10.40	<u>C. Petiti</u> , J. M. Welter, B. Salvadori, S. Vettori, S. Goidanich	The colossus of San Carlo Borromeo in Arona (NO, Italy). On site characterization of the metallic materials

11.00 - 11.20 Pausa caffè



11.20-13.00 Sessioni orali parallele

### Aula Magna - Caratterizzazione e diagnostica

Chair: Ferruccio Petrucci

11.20	<u>M. F. Alberghina</u> , G. Germinario, M. La Russa, A. Macchia, G. Milazzo, A. Casanova, S. Ruffolo, S. Schiavone, L. Sabbatini, A. Sodo	MonS REALIS - Monreale Sculptures: RElief, Analytical Laboratory investigations and Integrated Studies
11.40	<u>M. Bellato</u> , J. Li, A. King, L. Robbiola, M. Thoury, C. Moulhérat, A. Thomas, P. Guériau, P. Galtier, M. Gulmini, L. Bertrand	Novel approach for characterising archaeological textiles exceptionally preserved in a mineralised form based on 2D and 3D synchrotron micro-imaging
12.00	C. Greco, F. Aliotta, L. Arcidiacono, M. Borla, D. Di Martino, F. Facchetti, E. Ferraris, <u>G. Festa</u> , G. Gorini, J. Kelleher, D. Micieli, T. Minniti, C. Perelli Cippo, R. Ponterio, G. Salvato, R. Senesi, V. Turina, C. Vasi, W. Kockelmann, C. Andreani	New results from the ARKHA Project. ARchaeology of the invisible: unveiling the grave-goods of KHA
12.20	<u>D. Miriello</u> , L. Barba, J. Blancas, A. Bloise, M. Cappa, M. Cura, D. De Angelis, R. De Luca, A. Pecci, M. Taranto, G. M. Crisci	Archaeometric study of Hagia Sophia (Istanbul, Turkey): compositional, geophysical and thermographic approach
12.40	E. Costa, <u>M. E. Moschella</u> , M. Cristellotti, A. Marengo, R. Giustetto	The decay of the "Rivellino degli Invalidi" Subway Fortifications in Turin – a Case Study in Diagnostics and Conservation.

### Aula B - Bioarcheologia e interazione uomo-ambiente

Chair: Beatrice Demarchi

11.20	<u>C. Principe</u> , A. Gogichaishvili, S. Arrighi, M. Devidze, S. La Felice, A. Paolillo, D. Giordano, J. Morales	Archaeomagnetic dating of Copper Age furnaces at Croce di Papa village and relations on Vesuvius and Phlegraean Fields volcanic activity
11.40	<u>J. Sakalauskaite</u> , F. Marin, B. Demarchi	Biomolecular identification of prehistoric shells
12.00	<u>B. Triozj</u> , S. Valenzuela-Lamas, M. Ferrante, P. Nystrom	Strontium Isotope analyses to investigate the mobility of the Iron Age Vestini population of Loreto Aprutino, Abruzzo, Italy
12.20	<u>P. Ricci</u> , M. I. Garcia-Collado, S. Altieri, T. Campos, N. Sarasola, J. A. Quirós Castillo, C. Lubritto	Palaeodietary reconstruction of two coastal medieval settlements from the Basque Country (northern Spain)
12.40	<u>F. Modugno</u> , J. J. Lucejko, S. Braovac, M. P. Colombini	Analytical methods for the chemical investigation of archaeological waterlogged wood

### Aula C - Provenienza e datazione

Chair: Lucia Liccioli

11.20	K. Hellemans, <u>S. Cagno</u> , L. Bogana, M. Mendera, K. Janssens	LA-ICP-MS labels early medieval Tuscan finds as late natron glass
11.40	<u>L. Panzeri</u> , E. Sibilia, A. Galli, M. Martini, F. Maspero	Rehydroxylation: researches and results from Milano-Bicocca laboratory
12.00	<u>E. Tema</u> , E. Ferrara, E. Panero, S. Giachino	Archeomagnetic dating in Italy: an example of a baked clay kiln excavated at Santhià, Northern Italy
12.20	<u>L. Maritan</u> , L. Zamparo, C. Mazzoli, I. Bonetto	Punic black gloss ware: a history of importation and imitation from Carthage
12.40	M. S. Cellai, L. Chiarantini, A. Corretti, P. Costagliola, A. Dini, M. D'Orazio, V. Gassner, R. Manca, S. Marchionni, M. Paolieri, <u>M. Benvenuti</u>	The Sn-W enrichment of iron ores from Elba Island: a powerful marker of ancient iron trade routes in the Mediterranean region

13.00-14.00 Light lunch

14.00 - 15.00 Sessioni orali parallele

### Aula Magna - Caratterizzazione e diagnostica

Chair: Francesca Alberghina

14.00	<u>J. J. Lucejko</u> , J. La Nasa, F. Modugno, C. McQueen, S. Braovac, M. P. Colombini	Protective effect of linseed oil varnish on archaeological wood treated with alum
14.20	<u>M. Missori</u> , A. Mosca Conte, O. Pulci, L. Teodonio, S. Dominijanni, S. Puteo, S. Iannuccelli, S. Sotgiu, M. L. Sebastiani	Optical reflectance spectroscopy allows non-destructive monitoring of molecular modifications in restoration of works of art on paper
14.40	<u>P. A. M. Triolo</u> , F. Locardi, M. Spingardi	Practical application of visible induced luminescence and use of parasitic IR reflectance as relative spatial reference

### Aula B - Conservazione preventiva e restauro

Chair: Lorenzo Appolonia

14.00	R. Genta, <u>C. Triccerri</u> , M. Trento, A. Piccirillo, T. Poli	Executive techniques "unveiled" by the conservation treatment: the case-study of the B54 Japanese armour from the Armeria Reale in Turin
14.20	<u>M. Caroselli</u> , G. Cavallo, A. Felici, S. Luppichini, G. Nicoli, L. Aliverti	The use of gypsum in the Ticinese stucco artworks of the 16-17th century: motivation, characterization, provenance and induced degradation
14.40	<u>S. Ferrarese</u> , D. Bertoni, V. Dentis, L. Gena, M. Leone, M. Rinaudo	Microclimate analysis in a scientific museum: the case-study of the Physics Museum of Turin University

### Aula C - Caratterizzazione e diagnostica

Chair: Simone Cagno

14.00	M. L. Amadori, <u>N. Macchioni</u> , G. Adami, C. Capretti	Woodcut blocks of the "Scuola del libro" of Urbino: a scientific approach for conservation
14.20	<u>T. Rovetta</u> , C. Invernizzi, G. Fiocco, M. Albano, M. Licchelli, M. Gulmini, A. Daveri, M. Vagnini, M. Malagodi	The identity of Stradivari violin ex-San Lorenzo: is it still preserved?
14.40	<u>A. Idone</u> , N. Odisio, D. Vaudan, N. Seris, P. Croveri, L. Appolonia	Identification of yellow pigments and their degradation products in the palette of a 15th century alpine painter

15.00-16.00 Aula Magna - Premiazioni e chiusura

16.30-18.00 Passeggiata "Torino quadrata"

Sabato 17 Febbraio 2018

8.30-19.00 Gita sociale ad Aosta

Ore 8:30 - Ritrovo e partenza con bus ore 8:45 in Piazza Carlo Emanuele II (Piazza Carlina)

Ore 10:30 - arrivo ad Aosta, visita al complesso della Cattedrale di Aosta

Ore 13:30 - pranzo libero (possibilità di pranzo con menù tipico a prezzo fisso)

Ore 15:30 - visita del Parco archeologico e Museo dell'area megalitica di Saint-Martin-de-Corléans

Ore 17:30 - rientro a Torino (arrivo previsto intorno alle ore 19:00)

## Sessione poster

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B&IUA-P1	<u>V. Comite</u> , P. Fermo, L. Barbagallo	Analysis of black crusts from the Church of Santa Maria delle Grazie al Naviglio Grande (Milan): A challenge to deepen the understanding of the relationship among microstructure, microchemical features and pollution sources
B&IUA-P2	<u>L. Gaspari</u> , F. De Angelis, C. Martínez-Labarga, P. Catalano, C. Caldarini, R. Moticone, W. Pantano, C. Lubritto, S. Altieri, P. Ricci, V. Gazzaniga, O. Rickards	Mobility in the Empire: oxygen isotope survey of two roman communities
B&IUA-P3	<u>M. Romboni</u> , F. De Angelis, F. Cortese, L. Pandolfi, M. F. Rolfo, O. Rickards, L. Alessandri	Life, death and pathogens: a morphological and molecular study about "La Sassa" cave (LT) community
B&IUA-P4	<u>S. Varano</u> , F. De Angelis, L. Gaspari, C. Martínez-Labarga, O. Rickards	If These Bones Could Talk: The Tales Human Skeletons Can Tell Us
C&D-P1	<u>M. Aceto</u> , E. Calà, S. Cantamessa, A. Agostino, G. Fenoglio, V. Capra, G. Brun	An unusual blue-turquoise pigment found on a painting at Novalesa abbey (Piemonte)
C&D-P2	M. Monego, A. Rossi, <u>V. Achilli</u>	The Formagliari Mill (Castelfranco Emilia, Italy): 3D survey of an historical and architectural heritage
C&D-P3	<u>M.F. Alberghina</u> , A. Merra, G. Milazzo, S. Schiavone, F. Spatafora	The non-invasive investigations to assist the conservation of the three wall paintings: new archaeological remarks about the "House of Masks" of Solunto
C&D-P4	<u>M. Bandiera</u> , M. Vilarigues, M. Verità, L. Sagui	Roman opaque red glass from the Lucius Verus Villa, 2nd century A.D.. The secret of colour
C&D-P5	<u>G. Barone</u> , P. Mazzoleni, S. Fazi, M. Fugazzotto	Non destructive Archaeometric investigation of Architectural Slabs
C&D-P6	<u>S. Barone</u> , M. Fedi, L. Liccioli, C. Lubritto, P. Ricci	Sample combustion by elemental analyser for radiocarbon dating of carbonates
C&D-P7	<u>F. Bernardini</u> , L. Vaccari, F. Zanini, M. Bassetti, N. Degasperi, V. Lughì, M. Rottoli, R. Micheli	Distillation and use of birch bark tar at the Late Neolithic pile-dwelling of Palù di Livenza (north-eastern Italy) revealed by X-ray microCT and synchrotron Fourier-transform infrared spectroscopy
C&D-P8	<u>E. Cantisani</u> , S. Vettori, T. Ismaelli, G. Scardozi	Raw materials and technologies of mortars at Hierapolis (Turkey)
C&D-P9	<u>A. Capomasi</u> , E. Paris, F. Radica, G. Giuli	The historical buildings in the Marche region damaged by the 2016 seismic events: a GIS-based archive for mortars

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C&D-P10	A. Namen, R. Pitonzo, M. L. Saladino, F. Armetta, F. Oliveri, S. Tusa, M. Ricca, M. F. La Russa, <u>E. Caponetti</u>	Identification of organic residues and petrographical analysis in underwater amphoras from Porto Palo, Sicily
C&D-P11	M. Borla, <u>E. Caponetti</u> , C. Greco, V. Mollica Nardo, G. Nasillo, R. Pitonzo, R.C. Ponterio, M.L. Saladino, A. Spinella, V. Turina, C. Vasi	Spying on beauty secrets in ancient Egypt: a multi-analytical approach
C&D-P12	<u>D. Chillura Martino</u> , E. C. Portale, M. de Cesare, M. L. Saladino, G. Chirco, V. Renda, F. Armetta, E. Caponetti	Pictorial techniques on Greek vases: an Attic white-ground crater and the "Centuripe" ware
C&D-P13	M. Di Bella, A. Baldanza, G. Bueti, F. Italiano, F. Leonetti, M.A. Mastelloni, <u>S. Quartieri</u> , D. Romano, A. Tripodo, G. Sabatino	Mineralogical and geochemical characterization of clay deposit from the Lipari Islands (Aeolian Archipelago) and implications for archaeometric study of ancient ceramics
C&D-P14	<u>P. Fermo</u> , D. Gullotta, V. Comite, L. Barbagallo, L. Giannossa, A. Mangone, S. Goidanich, L. Toniolo	A multi-analytical approach to assess the impact of air pollution on marble surfaces through the analyses of passive PM samplers
C&D-P15	<u>A. Gašpar</u> , B. Mir Makhamad, J. Petřík, P. Fojtík, J. Mirão, M. Beltrame, A. M. Cardoso, N. Schiavon	A multi-analytical archaeometric approach to study white inlay decorations in Bell Beaker pottery from Broudek u Prostějova (Czech Republic)
C&D-P16	<u>C. Germinario</u> , F. Izzo, A. Langella, M. Mercurio, A.R. Russo, V. Petta, C. Grifa C.	Banded and partially glazed fine wares from Etruscan-Samnite necropolis of Pontecagnano (Campania region, Italy): preliminary archaeometric data
C&D-P17	A. Mangone, <u>L.C. Giannossa</u> , R. Laviano, I.M. Muntoni	An archaeometric key to gain knowledge in still complex matters: technology, provenance, painters and workshops of Apulian red figure ceramic from Daunia, Peucetia and Messapia.
C&D-P18	<u>A. Lo Giudice</u> , D. Angelici, R. Boano, C. Censori, L. Es Sebar, R. Giustetto, M. Nervo, A. Re	New X-ray diagnostic tools for Cultural Heritage: the NEXTO project
C&D-P19	<u>F. Lozar</u> , A. Borghi, M. Borla, C. Capua, D. Castelli, P. Gallo, M. Iacono	Micropaleontology as a tool to help identifying the provenance of an Egyptian artefact
C&D-P20	<u>J. Lucejko</u> , M. Zborowska, D. Tamburini, L. Babinski, E. Cantisani, B. Waliszewska, F. Modugno, M.P. Colombini	The examination of dynamics of oak wood degradation process in the wet peat and lake water conditions
C&D-P21	F. Catani, <u>R. Manca</u> , L. Chiarantini, A. Mazzinghi, V. Palleschi, C. Ruberto, V. Volpi, M. Benvenuti	Non-destructive analysis of ancient coins by portable XRF spectrometers: a methodological approach
C&D-P22	<u>L. Maritan</u> , E. Gravagna, J. Rius, A. Crespi, O. Vallcorba, L. Casas Duocastella	Secondary phases in ancient ceramics: mineral composition by synchrotron through-the-substrate microdiffraction
C&D-P23	<u>F. Modugno</u> , A. Lluveras-Tenorio, J. La Nasa, I. Degano, J. Lee, B. Ormsby, K.J. van den Berg, D. Banti, A. Burnstock, I. Bonaduce	Mass spectrometry to investigate degradation phenomena of modern oil paintings in JPI project: "CMOP-Cleaning of Modern Oil Paint"

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C&D-P24	<u>M. Monego</u> , G. Targa, A. Menin, V. Achilli	The first 3D and topographic surveys of the archaeological remains of an ancient city in Kimolos Island (Cyclades, Greece): preliminary results
C&D-P25	<u>E. Paris</u> , M.I. Pierigé, I. Bachiocchi	A tomb from the necropolis of Villalfonsina (Chieti, Italy): materials and anthropological data
C&D-P26	A.M. Gueli, G. Lamagna, G. Monterosso, <u>S. Pasquale</u> , G. Politi, M. Lezzerini, S. Raneri, A. Baldanza, A. Bertinelli	Provenience and characterization of mosaic tesserae of Villa del Tellaro at Noto (SR)
C&D-P27	E. Pecchioni, E. Cantisani, F. Fratini, S. Vettori	The characterization of magnesium binder: experimental approach to the study of the component
C&D-P28	<u>R.C. Ponterio</u> , D. De Carlo, G.M. Meduri, A. Nunnari, V. Barrile, V. Longo, D. Castrizio, C.S. Vasi	Laser Scanner Technology and Ground-Penetrating Radar for the Survey and 3D modelling of ancient Krésie Pipi (Reggio Calabria)
C&D-P29	<u>A. Renzulli</u> , P. Santi, S. Pagnotta, V. Palleschi, M.P. Colombini	The black stones at the Leopardi's childhood (Recanati, Italy): a LIBS and portable XRF characterization of the rock-artefacts
C&D-P30	A. Lenzi, M. Piacentini, A. Candida, M. Laura, <u>E. Ribechini</u>	Chemical characterization of archaeological samples from Banbhore (Pakistan) by spectroscopic, gas chromatographic and mass spectrometric techniques
C&D-P31	J. Lucejko, B. Kufel-Diakowska, B. Miazga, <u>E. Ribechini</u>	Use-wear traces and wood tar residues on Funnel Beaker culture flint harvesting tools: a case study from south-west Poland
C&D-P32	<u>P. Ricci</u> , M.E. Fedi, C. Germinaro, F. Izzo, M. Mercurio, A. Langella, C. Grifa, V. Salvatierra Cuenca, I. Montilla Torres, C.A. Garzonio, S. Barone, E. Cantisani, C. Lubritto	Mortar Radiocarbon Dating: The role of the characterization of materials in the sample preparation
C&D-P33	<u>N. Rovella</u> , D. Barca, G.M. Crisci, M.F. La Russa, F.A. Cuteri, M.T. Iannelli, P. Vivacqua	Magna Graecia heritage in Southern Italy: an archaeometric study on amphorae and common pottery
C&D-P34	M. Borla, E. Caponetti, M. Gulmini, V. Mollica Nardo, C. Oliva, A. Piccirillo, R.C. Ponterio, <u>M.L. Saladino</u> , A. Spinella, V. Turina	A multi-technique insight into pleated dresses from the Museo Egizio
C&D-P35	B. Borgognoni, S. Bracci, G. Calamandrei, L. Cioppi, S. Colagrande, D. Magrini, A. Matteuzzi, <u>B. Salvadori</u> , M.P. Zaccheddu	Insight into Baccio da Montelupo's wooden crucifix. A multi-analytical approach
C&D-P36	D.A. Badillo Sanchez, C. Barrocas Dias, A. Manhita and <u>N. Schiavon</u>	The Francisco Pizarro's Banner of Arms: a multi-analytical approach contributing to Latin America history
C&D-P37	M. Beltrame, M. Liberato, H. Santos, J. Mirão, A. Candeias, <u>N. Schiavon</u>	Islamic and post Islamic ceramics from the city of Santarém (Portugal): an archaeometry study on production and trades

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C&D-P42	P. Davit, <u>F. Turco</u> , D. Elia, V. Meirano, L. Operti	Brick technology in the roman villa (I-III c. AD) of Costigliole Saluzzo (Piedmont, Italy)
C&D-P43	<u>F. Turco</u> , G. Cerrato, A. Borghi, L. Operti	Discerning between natural and artificial pozzolanic materials by FTIR spectroscopy
C&D-P44	<u>S. Vettori</u> , S. Bracci, E. Cantisani, C. Conti, P. Caggia	Archaeometric study of painted plaster from the Church of St. Philip in Hierapolis archaeological site (Turkey)
C&D-P45	M. Sibilia, <u>F. Zanini</u>	The Perception of Risk and Hazard in the Analysis of Historical and Cultural Samples
CP&R-P1	C. Armigliato, <u>P. Croveri</u> , M. Demmelbauer, C.M. Lebole, R. Piervittori	Study and restoration of lombard artefacts: the male grave goods in Tomb 50 of Momo Necropolis (Novara)
CP&R-P2	A. Custodi	A new life for old laser data: the case of the Insula of Centenary in Pompeii
CP&R-P3	<u>L. Lombardo</u> , M. Parvis, E. Angelini, S. Grassini, C.E. Arroyave Posada	Environmental monitoring in the cultural heritage field
DDSBC-P1	<u>P. Davit</u> , M. Gulmini	The dyes of the ancients: a coloured approach for a didactic sequence in chemistry
DDSBC-P2	<u>F. Gambino</u> , M. Palomba, A. Magagna, L. Perotti, A. Borghi, M. Giardino	Interactive geo-educational tours with the app Tourinstones for the enhancement of ornamental stone materials employed in the centre of Turin (NW Italy)
DDSBC-P3	<u>C. Ricci</u> , C. Avataneo, M. Ballatore, F. Campogrande, L. Novelli, N. Rolando, F. Santangelo	"Scheletri nell'armadio" - An interactive dissemination activity for kids and young students
DDSBC-P4	<u>M.F. Alberghina</u> , F. Armetta, S. Bastone, E. Caponetti, D. Chillura Martino, E. De Castro, G. Chirco, C. Greco, V. Renda, S. Ridolfi, M.L. Saladino, S. Schiavone	One day at the Abatellis museum in Palermo discovering the "Trionfo della Morte" fresco: "Arte è Scienza" confirms to be one of the best practice to diffusion of the scientific culture on CH field

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MI&N-P1	A. Sallam, M. Hassan, P. Davit, T.Poli, <u>M.Gulmini</u>	Consolidation of mural paintings exposed in harsh conditions: the Luxor temple case study
MI&N-P2	<u>M.F. La Russa</u> , S.A. Ruffolo, M. Ricca, N. Rovella, D. Barca, A. Gallo, M. Lupia	The MaTACoS project: new perspective in the conservation of underwater cultural heritage
P&D-P1	<u>D. Barca</u> , M.F. La Russa, A. Macchia, M. Malorgio, A. Anzidei, A. Zarattini	Provenance of obsidian artifacts from Latium territory by LA-ICP-MS
P&D-P2	<u>F. Bernardini</u> , D. Lenaz, A. De Min, J. Horvat, A. Bavdek, P. Ventura	Provenance of late Republican Roman pottery from north-eastern Italy and western Slovenia revealed by geochemistry of volcanic minerals
P&D-P3	<u>L. Es Sebar</u> , D. Angelici, A. Borghi, R. Cossio, A. Lo Giudice, A. Re, G. Vaggelli	Improvements of the analytical protocol of lapis lazuli provenance: first study of Myanmar samples
P&D-P4	<u>F. Fantino</u> , L. Guidorzi, D.T. Myat, A. Lo Giudice, A. Re, P. Davit	Thermoluminescence for dating Myanmar monuments: a new local laboratory and first measurements
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P&D-P6	<u>L. Guidorzi</u> , A. Lo Giudice, F. Fantino, A. Re, D. Angelici, M. Gulmini	Instrumentation and technique developments at the thermoluminescence dating laboratory of the University of Turin
P&D-P7	<u>L. Marasco</u> , P. Ricci, S. Altieri, M.E. Fedi, L. Liccioli, A. Briano, S. Greenslade, S. Sheppard, C. Lubritto	Archaeological site of Vetricella: chronology and anthropic and natural landscapes
P&D-P8	<u>F. Maspero</u> , A. Galli, M. Martini, L. Panzeri, E. Sibilìa	Thermoluminescence study of the clay-cores of the Colossus of Barletta: dating its fusion phases
P&D-P9	G. Sabatino, A. Baldanza, M. Di Bella, F. Italiano, S. Larinà, F. Leonetti, M.A. Mastelloni, D. Romano, A. Tripodo, <u>S. Quartieri</u>	"Richborough 527" amphorae from C.da Portinenti (Lipari - ME) archeological site: archaeometric constraints from a multi-technique study
P&D-P10	<u>A. Toscano Raffa</u> , E. Caponetti, V. Mollica Nardo, M.L. Saladino, M. Venuti, M.C Ponterio	Archaeometric study on the so-called "coppe a medaglione" from the Hellenistic-Roman site of Finziade (Ag)
P&D-P11	F. Bernardini, A. De Min, D. Lenaz, <u>M. Velicogna</u> , T. Fabec, C. Tuiniz	Igneous millstones in the Caput Adriae from Protohistory to Roman time

## The artistic palette of Carlo Bononi, Baroque artist of Ferrara

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The aim of the *in situ* XRF analysis on the canvas “Incoronazione della Vergine” (Fig. 1) was devoted to characterise the palette of Carlo Bononi (Ferrara, 1569-1632), who is a not well-known artist of the first Baroque in Ferrara, but relevant in the field of the Este court school.

The canvas of large dimension (2,8 m of diameter) has been depicted by Bononi between 1616 and 1620 for the Santa Maria in Vado church.

More than one hundred points have been collected by means of XRF spectrometer, but the presence of many overlapping painted layers have leaved some doubts about the preparation or the background layers. The SEM-EDS analysis on some samples have resolved many of these doubts.

The results obtained indicate typical seventeenth-century pigments, such as Cinnabar covered with an Earth for the darker areas. The different correlations discovered between Fe and Mn suggest the use of more than one Umber Earth. Furthermore, for the yellow pigments, the artist used in some cases the Yellow Ochre, while in the others the Lead and Tin Yellow. Almost all the pigments have been identified and they are the first step forming the technical apparatus in order to understand the *modus operandi* of the Ferrarese artist.



Figure 1. Carlo Bononi, *Incoronazione della Vergine*, canvas, diameter of 2,8 m, Santa Maria in Vado, Ferrara

The “Incoronazione della Vergine” is exposed in the Santa Maria in Vado church in the exhibit “Carlo Bononi. Immagnificus Commotor” [1], which is parallel and related to the exhibition in Palazzo dei Diamanti “Carlo Bononi. The last dreamer of the Ferrarese School” until the 7<sup>th</sup> of January 2018.

### References

[1] <http://cias-ferrara.it/news/bononi/index.html>