



**ECBSM 5th Edition
Rome, November 11-12, 2022**

Friday 11 November

08h45 –9h15. Registration of participants.

09h15 –9h30. Welcome to ECBSM2022

09h30 –10h05. **Opening lecture**, Benjamín Otto Ortega Morales.

LONG TERM RESEARCH IN BIODETERIORATION ECOLOGY AND PROCESSES: LESSONS LEARNED FROM 25 YEARS OF MAYAN BUILT HERITAGE STUDIES

Session I: Ecology and biodiversity of biodeteriorating microorganisms

Chairwoman Katja Sterflinger, Chairman Patrick Di Martino

10h05-10h20. Cicardi M., Bernasconi D., Ferrando S., Martire L., Pastero L., Caneva G., Favero-Longo S.E.
INSIGHT ON A LICHEN-RELATED ORIGIN FOR CENTIMETRIC, CIRCULAR AREAS FREE FROM MICROBIAL BIOFILMS ON MARBLE MONUMENTS

10h20-10h35. Cuzman O.A., Luvidi L., Colantonio C., Raio A., Taiti S.
INFLUENCE OF THE MICRO AND MACRO BIODIVERSITY ON THE CONSERVATION OF A ROMAN FRESCO (II-III C.) LOCATED IN A SEMI-CONFINED ENVIRONMENT

10h35-10h50. De Luca D., Piredda R., Cennamo P.
CLOSE BUT DIFFERENT: METABARCODING ANALYSES REVEAL DIFFERENT MICROBIAL COMMUNITIES IN ANCIENT ROMAN NYMPHAEA

10h50-11h05. Antonelli F., Macro N., Marazzato M., Plissonnier M.L., Ricci S., Bartolini M., Iovine S., Guerrieri F.
THE ROSY DISCOLORATION OF MOSAIC TILES IN THE PANCRAZI TOMB (APPIA ANTICA ARCHAEOLOGICAL PARK)

11h05-11h20. Isola D., Zucconi L., Lanteri L., Spizzichino V., Pelosi C.
BIODETERIORATION OF THE PEPERINO PULPIT OF THE BASILICA OF SAN FRANCESCO DELLA ROCCA IN VITERBO, ITALY (XV CENTURY)



11h20-11h45. Coffee break



11h45-12h00. Ji-Dong Gu.

MICROBIOME OF CULTURAL HERITAGE: THE SCIENTIFIC QUESTIONS

12h00-12h15. Perito B., Agostini B., Cuzman O.A., Salvatici T., Santo A.P.

CHARACTERIZATION OF THE MICROBIAL COMMUNITY INHABITING THE EXTERNAL DARKENED MARBLE OF FLORENCE CATHEDRAL



12h15-12h30. Tenore A., Wu Y., Jacob J., Bittermann D., Villa F., Buttaro B., Klapper I.

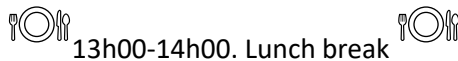
SUBAERIAL MICROBIAL COMMUNITIES: MATHEMATICAL MODELLING OF WATER ACTIVITY AND ECOLOGY

12h30-12h45. Nir I., Barak H., Rabbachin L., Shpatz D., Kahn A., Mariela P., Kramarsky-Winter E., Pinar G., Sterflinger K., Kushmaro A.

WHOLE-GENOME SEQUENCING AND CHARACTERIZATION OF THE NEWLY ISOLATED CYANOBACTERIA TRICHOCOLEUS DESERTORUM NEGEVI FROM PETROGLYPHS SITES, NEGEV DESERT, ISRAEL

12h45-13h00. Isola D., Bartoli F., Caneva G.

THE IMPORTANCE OF LONG-TERM STUDIES AFTER CONSERVATIVE TREATMENTS. THE CASE OF THE ROMAN HOUSES OF CELIUS HILL (ROME, ITALY)



13h00-14h00. Lunch break

14h00 –14h25. **Plenary lecture**, Katja Sterflinger.

LOOK UP! WHY CLIMATE CHANGE WILL INCREASE BIODETERIORATION OF ART AND CULTURAL HERITAGE

Session II: Environmental parameters and biocolonization

Chairwomen Ilda Mannino and Francesca Cappitelli

14h25-14h40. Cattò C., Mu A., Moreau J.W., Wang N., Cappitelli F., Strugnell R.

BACTERIAL COLONIZATION ON OUTDOOR STONE SURFACES OF THE CHURCH OF ST JOHN THE EVANGELIST IN MELBOURNE (AUSTRALIA)

14h40-14h55. Farooq M.

SEASONAL BIOFILM FORMING MICROORGANISMS ON ARCHAEOLOGICAL MONUMENTS OF PAKISTAN

14h55 – 15h10. Fuentes E., Pérez-Velón D., Prieto B.

EFFECT OF TEMPERATURE AND CO₂ ON THE DETERIORATION OF GRANITIC ROCKS COLONISED BY PHOTOTROPHS

15h10-15h25. Tenore A., Wu Y., Jacob J., Bittermann D., Villa F., Buttaro B., Klapper I.

TEMPERATURE AND RELATIVE HUMIDITY MEASUREMENTS FOR SUBAERIAL MICROBIAL COMMUNITIES ON MARBLE ROOFS

15h25-15h40. Parvin N., Mandal S., Rath J.

MICROBIOME OF 7TH CENTURY OLD PARSURAMESWARA STONE MONUMENT OF INDIA, AND ROLE OF DESICCATION-TOLERANT CYANOBACTERUA ON ITS BIODETERIORATION



15h40-15h55. Reboah P., Balland Bolou-Bi C., Nowak S., Verney-Carron A.

INFLUENCE OF CLIMATIC FACTOR ON CYANOBACTERIA AND GREEN ALGAE DEVELOPMENT ON BUILDING SURFACE

15h55-16h10. Schröer L., De Kock T., Godts S., Boon N., Cnudde V.

THE IMPACT OF BIOFOULING ON THE WATER TRANSPORT PROPERTIES OF POROUS BUILDING STONES



 16h10-16h30. Coffee break 

16h30 –16h55. **Plenary lecture**, Ilda Mannino.

NEEDS FOR SUSTAINABLE MANAGEMENT OF CULTURAL HERITAGE IN THE BALKANS: INSIGHTS FROM THE SMACH PROJECT

Session III: Monitoring and management of Cultural Heritage

Chairwoman Federica Villa, Chairman Benjamín Otto Ortega Morales

16h55-17h10. Buena E., King H., Bultreys T., Cnudde V.

UNRAVELLING THE FLUID-ROCK-MICROBIAL INTERACTION IN NATURAL BUILDING STONES THROUGH THE USE OF XRAY MICROTOMOGRAPHY: IMPLICATIONS ON CULTURAL HERITAGE PRESERVATION

17h10-17h25. Diaz-Basteris J., Menéndez B., Reyes J., Sacramento Rivero J.C.

SUSTAINABLE RESTORATION MORTARS: A SELECTION METHOD APPLIED TO THREE BUILDING STONES

17h25- 17h40. Frasca F., Verticchio E., Matè D., Giammuso F.M., Sani M., Sebastiani M.L., Siani A.M., Sclocchi M.C.



THE ROLE OF HISTORICAL BUILDINGS IN THE BIODETERIORATION AND PREVENTIVE CONSERVATION OF ARCHIVAL HERITAGE: THE CASE OF THE HISTORICAL ARCHIVES OF PALERMO



17h40-17h55. Méndez A., Fuentes E., Arines J., Sanmartín P., Prieto B.

HOW SURFACE COLOUR AFFECTS THE MEASURES BY PAM FLUOROMETRY IN ALGAL BIOFILMS COLONISING BUILDING MATERIALS

17h55-18h10. Tonon C., von Werder J., Gorbushina A.A.

GREEN FAÇADES ON CONCRETE SURFACES: THE BIOFILM CHALLENGE.

 18h10-18h30. Poster session 

 20h00. Gala Dinner 



Saturday 12 November

08h30 –9h00. Welcome of participants.

9h00 –9h25. **Plenary lecture**, Faisal Boustia.

ECO FRIENDLY TREATMENTS TO FIGHT AGAINST THE DEVELOPMENT OF MICROORGANISMS IN CULTURAL HERITAGE: EVIDENCE FROM LABORATORY TO SITES EXPERIMENTS.

Session IV, Sustainable treatments against biodeterioration

Chairwomen Giovanna Poggi and Laura Bruno

9h25-9h40. Antonelli F., Sacco Perasso C., Iovine S., Bartolini M.

ESSENTIAL OILS AND ESSENTIAL OIL BASED PRODUCTS COMPARED TO CHEMICAL BIOCIDES AGAINST MICROBIAL PATINAS ON STONE CULTURAL HERITAGE

9h40-9h55. Cuberos-Càceres L., Calvo-Bayo I., Romero-Noguera J., Bolívar-Galiano F.

STUDY AND DEVELOPMENT OF NEW METHODS TO INHIBIT THE GROWTH OF BIOFILMS IN THE ORNAMENTAL FOUNTAINS OF THE ALHAMBRA AND THE GENERALIFE

9h55-10h10. Scielzo R., Rippa M., Trojsi G., Cennamo P.

UV-C IRRADIATION AS A TOOL TO REDUCE BIODETERIORATES ON THE WALL PAINTS OF THE ARCHAEOLOGICAL SITE OF BAIA.

10h10-10h25. Vadrucci M., Cicero C., Schifano E., Uccelletti D.

GREEN APPROACHES TO CH DISINFECTION: CHARACTERIZATION OF MICROORGANISMS AND ANTIMICROBIAL PROCEDURES THROUGH IONIZING RADIATION

10h25-10h40. Gabriele F., Bruno L., Casieri C., Ranaldi R., Rugnini L, Spreti L.

FROM LABORATORY TESTS TO "IN SITU" APPLICATIONS: EFFECTIVENESS OF ALGINATE-BIOCIDE HYDROGELS AGAINST STONE BIODETERIORATION

10h40-10h55. De Leo F., Urzì C.

A FRESH OUTLOOK ON BLACK FUNGI FROM STONE MONUMENTS CAN DRIVE NEW STRATEGIES FOR THEIR CONTROL

10h55-11h10. Costa D., Revez M.J, Muge J.

ONSITE TESTING OF NATURAL BIOCIDES SOLUTIONS TO CLEAN LIMESTONE SURFACES



11h10-11h30. Coffee break



11h30 –11h55. **Plenary lecture**, Giovanna Poggi. INNOVATIVE ENVIRONMENTAL FRIENDLY NANOMATERIALS FOR SUSTAINABLE STONE HERITAGE CONSERVATION



Session V, Innovative materials for sustainable cultural heritage protection

Chairwoman Francesca Cappitelli, Chairman Faisal Boustia

11h55-12h10. Goidanich S., Cappitelli F., Guzmàn P., Lascurain G., Toniolo L., Mandebvu A.S., Gulotta D., Villa F.

BRICK-LIME-BASED MORTAR SPECIMENS AS SUBSTRATES FOR PROTECTIVE BIOFILMS

12h10-12h25. Isca C., Migliore G., Tasso F.

WATERLOGGED ARCHAEOLOGICAL WOOD CAN BE RESTORED USING PEG-REMOVING BACTERIA?

12h25-12h40. Pirillo T., Sébastien F., Claudia R., Olivier R.

MONITORING AND MAINTENANCE OF THE SCULPTURE IN THE GARDENS OF THE CHÂTEAU DE VERSAILLES: EVALUATING AND TESTING NEW APPROACHES TO BIOCIDES TREATMENT

12h40-12h55. Castillo F.I., Misra A., Eyssautier-Chuine S., de la Fuente J.M., Streb C., Mitchell S.G.

DEVELOPING MOLECULAR AND NANOMATERIALS TO PREVENT BIODETERIORATION OF STONE HERITAGE

12h55-13h10. Spizzichino V., D'Amato R., De Feo F., Pelosi C., Serranti S., Temperini A.

INNOVATIVE SOLUTIONS FOR THE CONSERVATION OF *PEPERINO* STONE



13h10-13h30. "P.B Albertano Awards: Best Young Presentation and Poster"

Final conclusion



13h30-14h30. Light lunch





POSTER SESSION

- Barboux R., Bousta F., Di Martino P.

PUTATIVE USE OF CITRONELLA (*CYMBOPOGON CITRATUS*) FOR BIOCONTROL OF BASIDIOMYCOTA INVOLVED IN WOOD DECAY

- Bellamy K.H., Li K., Chu J.L., Gunasekera P., Hadimani S., Sankararaman S., Alam N., Beaumont J., Liu E., Oh C., Jacob J.M., Tepper A., Gulick J.R., Burnett M.S.

16S BACTERIAL METAGENOMIC ANALYSIS OF SUBAERIAL BIOFILMS ON THE JEFFERSON MEMORIAL AND THE IMPACT OF LASER AND STEAM TREATMENT

- Chu J.L., Gunasekera P., Bellamy K.H., Li K., Hadimani S., Sankararaman S., Amancherla P., Babu V., Courtney B., Hatzilambrou O., Jacob J.M., Tepper A., Gulick J.R., Burnett M.S.

METAGENOMIC FUNGAL ANALYSIS OF SUBAERIAL BIOFILMS ON THE JEFFERSON MEMORIAL BEFORE AND AFTER LASED AND STEAM TREATMENT

- Cozzolino A., Bonanomi G., Motti R.

THE ROLE OF PLANTS IN THE BIODETERIORATION OF HISTORICAL BUILDINGS

- Luci M., Ali R.H., Lo Schiavo S., De Leo F., La Russa M., Ricca M., Ruffolo S., De Pascale D., Ruocco N., Galasso C., Urzi C.

THE UNALTERABLE PROJECT: NEW COATINGS FOR UNDERWATER CULTURAL HERITAGE

- Pérez-Velòn D., Fuentes E., Aguiar U., Prieto B.

DOES BIOLOGICAL COLONIZATION REMOVING PROTOCOLS INFLUENCE BIOLOGICAL RECOLONIZATION OF CULTURAL HERITAGE ROCKY SURFACES?

- Petraretti M., Mondanaro A., Castiglione S., Melchionna M., De Natale A., Raia P., Pollio A.

A NEW APPROACH TO STUDY BIODEGRADATION PROGRESSION ON STONE CULTURAL HERITAGE

- Ranalli G., Bucci A., Fantasma F., Palmieri M., Saviano G., Rampazzi L., Ludovico G., Zanardini E.

SAFETY MATERIALS, TECHNOLOGIES AND SUSTAINABLE GUIDELINES FOR BIO-CONSERVATION OF CULTURAL HERITAGE (SAFEBIOTECH)

- Wu Y.L., Zerboni A., Gallinaro M., Cappitelli F., Villa F.

INSIGHTS ON BACTERIAL STRUCTURAL AND FUNCTIONAL DIVERSITY RELATED TO THE FORMATION OF COATINGS ON ETHIOPIAN ROCK ART

- Zambolin L., Ranaldi R., Rugini L., Gabriele F., Spreti N., Casieri C., Bruno L.

TESTING ESSENTIAL OILS AS NATURAL BIOCIDES AGAINST CYANOBACTERIAL BIOFILMS