



Università
Ca' Foscari
Venezia

PROJECT ACRONYM AND TITLE: Bioncleansing - Bio-cleaning for Cultural Heritage

FUNDING PROGRAMME: MAECI Italia – India

CALL: Bando MAECI Italia – India

SCIENTIFIC FIELDS: Technologies applied to Cultural and Natural Heritage

HOST DEPARTMENT: Department of Molecular Sciences and Nanosystems

SCIENTIFIC RESPONSIBLE: Alvise Benedetti

FINANCIAL DATA:

Project total costs	Overall funding assigned to UNIVE
€ 35,780.00	€ 17,890.00

ABSTRACT:

This study is based on the use of composites and hybrid materials containing enzymes. These systems are no-toxic, safe for the environment and for the operator, and they can remove biological (molds, lichens, algae, cyanobacteria) organic (food stain) and acrylic compounds (resins, polymers etc.) from any kind of surface. Thanks to their versatility, they are easy to use, they can be applied directly on the surface to treat and able to remove the patina in a few minutes (5-30min). These systems are so flexible that they can be applied on different materials for: a) the bio-cleaning of historical ancient objects (marbles and other different kind of materials, ancient paintings and monuments), b) the bio-cleaning and preservation of naval surfaces; c) the bio-cleaning of tissues to remove organic stains; d) the bio-cleaning of household appliance surfaces (ovens and microwave ovens) affected by exhausted food derivatives. Thanks to versatility of the product developed by Nasier, the formulation, the application and the selection of product to be used can be modified, according to different need. During the first part of the study we will develop, characterize and analyze different kind of inorganic and hybrid organic-inorganic systems. We will study different kind of synthesis and different interaction among the different components during the removal of biological patinas, trying also to obtain different functional groups to increase the performance of the product. We will analyze the versatility of the use of composites just to obtain different kind of application (solid, liquid, gel, foam, spray), and we will study the way to obtain a thixotropic product which can be use in different part of the artifacts. To characterize the systems we will use the following techniques: SEM, FTIR, DRIFT, UV-analysis and BET.

Planned Start date	Planned End date
June 2018	February 2019

PARTNERSHIP:

1 Università Ca' Foscari Venezia	Italy	Coordinator
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