CATÓLICA
FACULTY OF BIOTECHNOLOGY
PORTO

PROJECT R&D+I

TITLE

BIONANOSCULP: DEVELOPMENT AND CHARACTERIZATION OF THE APPLICATION OF BIONANOMATERIALS WITH ANTI-MICROBIAL PROTECTION FOR COATING OF METAL AND STONE-BASED PUBLIC SCULPTURES

HIGHLIGHTS

Development of nanofilms for preventive conservation in relation to biological alterations in public sculptures in urban areas

ABSTRACT

The permanent exposure to the environmental elements of outdoor public sculptures in urban areas places them in a high-risk group within the still cultural heritage of cities, regions and countries. From the conservation point of view, the action in this type of objects passes, or by treatments of eradication of the responsible biological agents, or by the prevention of their growth. It is precisely in this last point, in preventive conservation, and changing its paradigm, that lies the scope of investigation of this project.

The main objective of this project is the development of nanofilms for application as a layer of protection with antimicrobial effects, being also tested the incorporation of compounds with anti-UV effect.

This new coating will be tested for its effectiveness in preventing the growth of the different biological agents involved but also in the different requirements for application to this area, namely interaction with the object materials from a physical, chemical and aesthetic point of view, reversibility, durability, applicability to different types of materials and low degree of toxicity, which is very important from the point of view of the conservator-restorer or the archaeologist. It is also intended to evaluate if the nanomaterials developed and tested in the project can be used as other functions besides the coating, as consolidants and/or adhesives.

KEYWORDS

Nanotechnology, Nanofilms, Biological Change, Sculptures and Urban Environment, Preventive Conservation

PROMOTERS / PARTNERS

Escola Superior de Biotecnologia - Universidade Católica Portuguesa (coordinator)

FINANCING PROGRAM	EXECUTION DATE	GLOBAL BUDGET
PTDC/EPH-PAT/6281/2014	2016-2019	€ 136 792,00

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