CERIS : Civil Engineering Research and Innovation for Sustainability

Development and performance of multi-action products for the conservation of porous stones from built heritage

PhD student
Madalena de Almeida Fava Lopes Rucha

PhD program
Civil Engineering (IST, University of Lisbon)

Supervisor
Bruno Sena Fonseca (CQE, IST, University of Lisbon)

Co-supervisors
Ana Paula Santana (CERIS, IST, University of Lisbon) and Susana Gonçalves (IPS, Polytechnic Institute of Setúbal)

Period
2022-2026

Funding
FCT research project GreenMAp (PTDC/ECI-EGC/2519/2020)

FCT scholarship (PRT/BD/154445/2022)

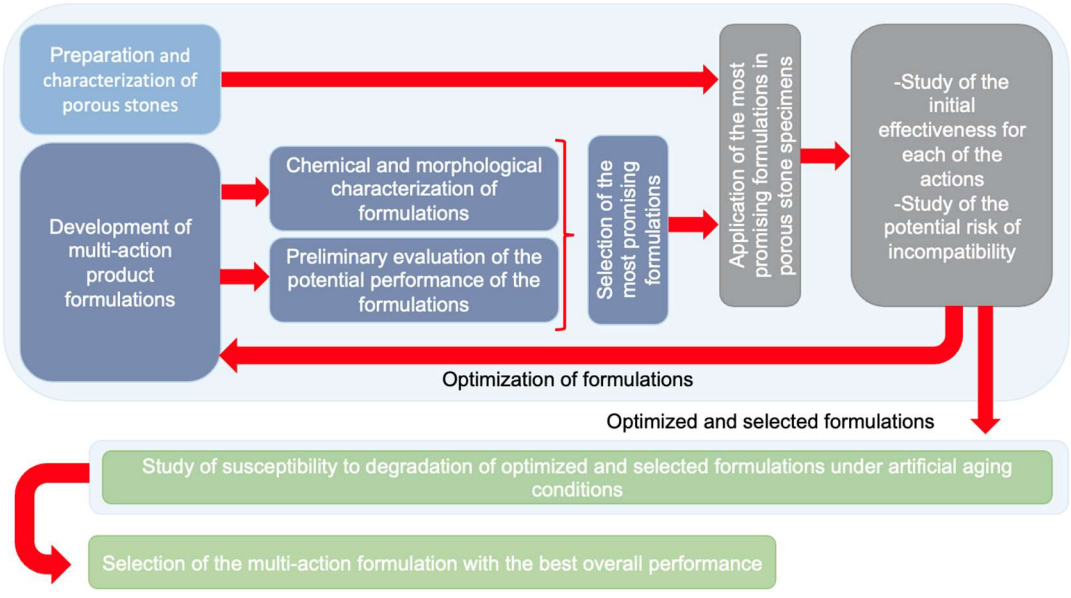
Summary

Cultural heritage in stone often integrates varieties with high porosity, which is responsible for its greater susceptibility to degradation and need to carry out conservation interventions. These interventions usually involve consolidation, protection and cleaning actions, which present, with some frequency, the risk of causing new degradation processes, especially in porous stones, and limitations related to the technical performance and environmental sustainability of the available conservation products and practices.

The main objective of the thesis is to contribute to the reduction of the risk associated to treatments on porous carbonate and silicate stones, using new solutions that are more compatible and sustainable through the development and validation of multi-action products with several actions (consolidation, protection and cleaning) with potential good performance (initial effectiveness, compatibility and susceptibility to degradation) when applied to the treatment of porous stones that contribute to a more sustainable conservation practice.

Keywords

Porous stone materials, built heritage, sustentability conservation, multi-action products.



Summary of PhD thesis works.