

Petrology Applied to Conservation of Cultural Heritage

KEYWORDS

- Materials characterization
- Consolidation and protection
- Materials provenance
- Desalination
- Moisture deterioration

POTENTIAL END USERS

Companies focused on management, conservation, and restoration of cultural heritage (objects and/or built heritage), Museums, construction companies (rehabilitation), companies that distribute restoration products, as well those focused on instrumental techniques.

TECHNIQUES

- Microscopy
- ERT (Geotom)
- X Ray fluorescence
- IR spectroscopy
- Raman spectroscopy
- Optical roughnessmetry
- IR thermography
- DRMS (drilling)
- UPV (ultrasound)
- Hg intrusion porosimetry



Traditional and innovative technologies for the diagnosis, conservation, and restoration of natural and artificial stone materials

Need or problem that solves

Currently, the conservation of cultural heritage requires a multidisciplinary approach around aspects such as:

- Geomaterial diagnosis and characterization studies
- Use of portable and non-destructive techniques for on-site analysis
- Validation and quality control of products and materials used in interventions
- Monitoring of environmental conditions

At the same time, the variety of deterioration agents that affect heritage requires proposing innovative solutions for the correct conservation and restoration of cultural heritage.

Innovative aspects

- Protocols based on innovative technologies for the control of interventions related to cleaning methods, protection and conservation treatments applied on built heritage.
- Development of desalination and consolidation techniques based on electrokinetics.
- Use of high-resolution electrical resistance tomography (ERT) technique for 2D mapping moisture content in built structures
- Environmental control with wireless sensors.



Equipment

The [Petrophysics' Laboratory of IGEO](#) has an extensive list of techniques, particularly remarkable for the wide variety of portable and non-destructive techniques that represent a real mobile laboratory for on-site studies specialized in:

- Petrophysical analysis techniques (optical roughnessmetry, microdurometry, spectrophotometry, Hg intrusion porosimetry, among others)
- Chemical analysis techniques (XRF, Raman and FTIR).

Contact

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