

Art4Art

Monica Simileanu, INOE 2000, simileanu@inoe.inoe.ro

The search for advanced techniques in diagnostics and conservation of material Cultural Heritage consider as ideal the techniques typically associated with photonics. Photonics offers ideal testing tools to investigate material with a not invasive method. The applications of photonics for artworks preservation and conservation has given so far many important results for diagnostics, imaging, restoration and monitoring aims [1,2].

The paper presents a mobile workshop that corroborates high precision Advanced Photonics Techniques for investigation. Due to a flawless flexible structure design, various categories of users will be involved; it will be a new representation of the joined interests' synergy, as well as the research contributions, from various domains, to the cultural heritage preservation. It will substantially improve the decision and work conditions; it will allow applications and disseminations of the most advanced diagnosis-restoration-conservation techniques.

The selected instruments and methods are highly technical, perfected mostly in the last decade. The main ones are the microclimate monitoring, air quality and light exposure ones - a flexible installation and on-line surveillance will be build, materials non-invasive and non-contact qualitative evaluation techniques using LIF (Laser Induced Fluorescence) and non-contact micro invasive using LIBS (Laser Induced Breakdown Spectroscopy), high resolution optical microscopy that doesn't imply any sampling, thermovision, high resolution multispectral image analysis (UV-VIS-NIR), colorimetry and 3D scanning of large objects – including historical buildings and *tells* (archaeological), documentation/digital reconstruction [3].

The technical register is developed and updated along with each phase by direct application on several interesting locations that are affected by severe deteriorations or difficult casuistic, whose solving implies understanding of some complex degradation mechanisms. We emphasis that the project is a direct outcome of partners activity in the last years and a statement of their scientific maturity acquired by fundamental and applicative researches (in situ).

Key-words: *laser cleaning, LIBS, LIF, microclimate*

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