

Scanning microwave microscopy to characterize, monitor and preserve cultural heritage monuments

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In the last decades, the interest of scientific community in characterizing, monitoring and preserving heritage monuments has increased in reaction to the acceleration of the degradation process due to the rising level of pollution.

The actual strategies adopted to contrast the degradation of the artefacts are corrective strategies. Preventive strategies capable of detecting early stages of the deterioration process and prompt an action to stop it before major damage happens, are deficient.

We present the ADRIANA project, in collaboration with the Autonomous Institute of Villa Adriana and Villa d'Este (VA-VE), UNESCO World Heritage Site since 1999 in Tivoli, Italy. The project aims to develop microwave probes to get local images and spectral properties of surfaces and sub-surfaces of the marble stones of Villa Adriana and, therefore, gather information on their conservative status by detecting physical and mechanical changes associated with the deterioration.

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