



Non-invasive analytical and diagnostic technologies at San Marco Museum: survey of the Annunciation painting by Fra Angelico

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Non-invasive analytical and diagnostic technologies deserve huge attention in the frame of Cultural Heritage because they allow an improvement of knowledge about artists' materials and techniques as well as the conservation status of masterpieces. In this frame, the cooperative use of different technologies makes it possible to investigate the same work of art by accounting for different aspects characterizing its design, thus providing a global vision from the support where the work is made up to the pigments, which were used for its creation.

In this communication, we report on the survey carried out on the Annunciation wall-painting, one of the most famous frescos by Fra Angelico at the San Marco Museum in Florence, Italy. The survey did not aim at conservation or restoration activities and it represented a valuable proof of concept of the benefits offered by the joint use of portable spot-size and imaging techniques working into different portions of the electromagnetic spectrum. Specifically, the survey involved the following technologies:

- Ground Penetrating Radar, useful to investigate the wall where the fresco is located;
- Infrared Reflectography, capable of revealing the presence of preparatory drawings;
- Ultraviolet fluorescence, suitable to detect specific pictorial materials;
- THz time domain imaging, able to provide information on the stratigraphic sequence;
- X-Ray Fluorescence, Fiber Optic Reflectance Spectroscopy and Total Reflectance Fourier Transform Infrared measurements, which are relevant to identify materials of the paint layers and the support.

The results of the survey were essential to have a panoramic picture of the stratigraphic structure of the painting and of its supporting wall as well as to improve knowledge about the color palette and techniques adopted by Fra Angelico. These results have been described into the educational and non-scientific book "Salve Mater – The Annunciation by Fra Angelico at San Marco" [1] and will be shown in detail at the conference.

[1] Ministero dei beni e delle attività culturali e del turismo, "Salve Mater – The Annunciation by Fra Angelico at San Marco", Quaderni del Museo di San Marco, Polo Museale della Toscana N.1, Edited by Marilena Tamassia, Sillabe s.r.l.