

Colour measurements combined with elemental analysis to study 14th c. wall paintings at Germolles' palace, France

Reference: Short Term Scientific Mission, COST TD1201

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Short description

This STMS follows and is based on the results obtained by a first STSM (COST-STSM-TD1201-14196 - carried out in December 2013) which clearly distinguished areas with original paint and later painting addition using visual examination and technical photography. This second STSM (carried out in October 2014) provided additional information on the nature and the colour stability of the remaining decorations using non-invasive analytical tools: spectroradiometry and X-ray fluorescence spectroscopy.

Spectroradiometry measurements were carried out in 47 points with different colors but also in different conditions (exposed and not exposed to sun light, recently uncovered, repainted). The results show that: paint in different exposed condition has no colour variation; repainting is clearly distinguishable (as evident by visual examination). The colour data collected is a reference set for further investigations to evaluate colour changes. Fig. 1 illustrate an example of the data presentation for a colour measurements on an original green paint layer.

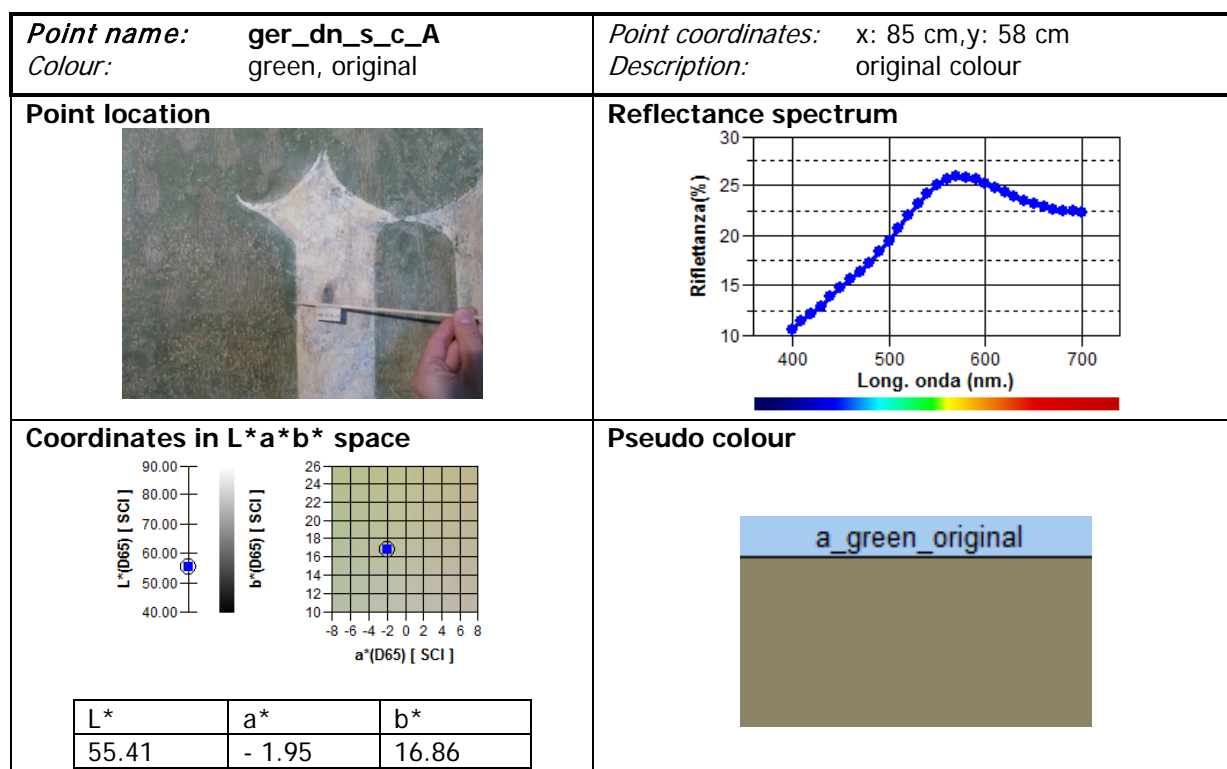


Fig. 1 : Example of report of Spectro colorimetry measurements on original green.

In terms of technical examination of the original medieval decoration, the data obtained with the two STSMs provide important information to make sound hypothesis about the presence of a particular pigment and/or metallic layer and to draw a scheme of stratigraphy for the thistles decorating one of the Castle's room (see Figs. 2 and 3).

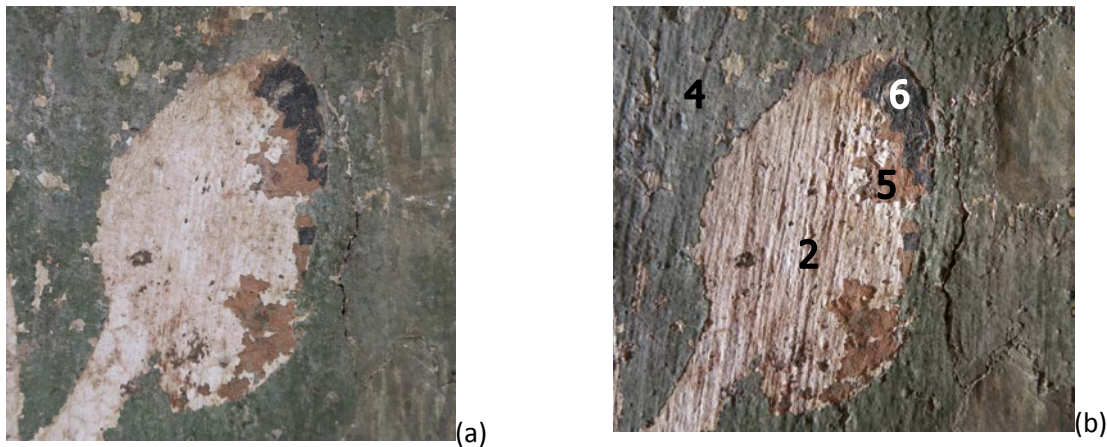


Fig. 2 : Close up of thistle No. 32 in incident (a) and in raking light (b)

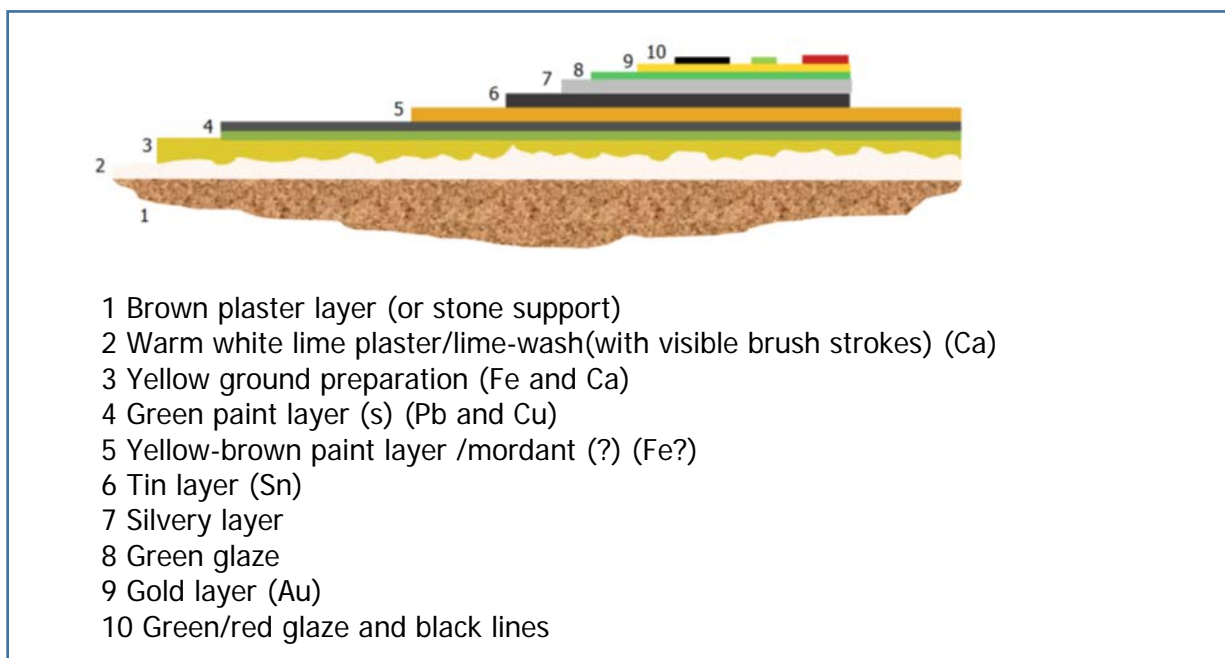


Fig. 3 : Scheme of stratigraphy of thistle decoration

These non-invasive point analyses do not require sampling and are a pre-requisite for the planning of invasive investigations and for selecting representative sample locations.

The investigation confirmed the complexity of the thistle decorations created with multiple layers and metal (tin and gold) leaves. These are precious but fragile records of a sophisticated painted scheme and should be documented extensively as soon as possible. Dusting of the surface should be avoided unless performed by a professional conservator, to avoid lifting and loss of these precious evidences.