THE COLOUR OF MEDIEVAL PORTUGUESE ILLUMINATIONS: EXPERIMENTAL DESIGN

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Studying the materials used to create Medieval illuminations, in missions where the equipments are transported to the institutions where the manuscripts are preserved, implies a first interaction with the Art History experts, who make a careful selection of the manuscripts from where a relevant number of folia are analyzed in order to ensure statistical relevance as well as to address relevant points of the research on medieval colour production such as green, red and carmine.

To study the colour materials, micro-EDXRF, micro-FTIR, micro-spectrofluorimetry, micro-Raman and HPLC-DAD are commonly used. Complexity could be addressed not only by using different and complementary techniques but also by knowing the materials and techniques employed in the original process of art creation. Recreating old recipes with as much historical accuracy as possible provides representative samples that may be used as standards [1] and having the *Historical Recipe Reconstructions* assembled in a *Database* is essential when operating with *in situ* techniques. Model samples prepared with pure materials will in turn enable both a better understanding of the results obtained with the historical reproductions and the testing of the analytical methodologies.

In situ, the first screening is carried out by micro-EDXRF, giving a global approach of the paints composition and revealing some possible areas to be analyzed with the other techniques. The following three mentioned techniques can also be used *in situ* but in order to have a better paint characterization, micro-sampling should be performed to analyze by micro-FTIR and HPLC-DAD. These last one should just be used when the other techniques were not enough to characterize the molecules in doubt or to corroborate any dubious result.

The global approach and experimental design set-up for a comprehensive study on colour production for medieval Portuguese illuminations will be described.

(1) Carlyle, L. "Historically Accurate Reconstructions of Oil Painters' Materials: An overview of the Hart Project 2002-2005", in Reporting Highlights of the De Mayerne Programme; Boon, J. J., Ferreira, E. S.B., Eds.; NWO: The Hague, 2006.

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(1) "An interdisciplinary approach to the study of colour in Portuguese manuscript illuminations", POCTI/EAT/33782/2000
(2) "The identity of Portuguese medieval manuscript illumination in the European context", PTDC/EAT/65445/2006