

# **Bridging Science and Art: innovative methodologies for the identification of organic colorants in artworks**

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For millennia, organic dyes have been used for artworks such as textiles and have great artistic and historic value. They may provide clues to understanding the technology behind an artwork's production. The characterization of natural organic colorants in artworks is still a challenge to this day and many of the techniques used still require sampling, which might not be possible in many cases. Over the past decade, the development of portable techniques and new approaches have proved successful in overcoming the difficulty of analyzing organic colorants. Although no technique alone may answer all questions regarding the identification and characterization of organic colorants, a synergetic combination of techniques and methodologies has proven to be a very powerful approach.

In this talk, I will discuss our work using molecular fluorescence, allied with chemometrics, and high-performance liquid chromatography, for the study of organic colorants in historical textiles. This methodology has allowed us to assess the influence of the ingredients, as well as the distinct specific recipes. This will provide key knowledge on the technological processes for the production of artworks while delivering proof-of-concept of the use of fluorescence for the analysis of cultural heritage.

We also intend to take cultural heritage studies a step further, into exploring new applications for organic dyes. Project REVIVE is an example, in which historical dye formulations will be optimized for application in the modern textile industry.

## **Biography**

Paula Nabais, is a Junior Researcher at LAQV-REQUIMTE (Cultural Heritage thematic line). She is a heritage scientist with expertise in the study of organic colorants and the use of analytical techniques for the characterization of artworks. Her interdisciplinary background is evident, uniting arts, history and sciences for the discovery of historical formulations to be (re)invented in modern applications.