

# Answering conservation issues of Gauguin's *Portrait de Suzanne Bambridge* by a multi-analytical approach

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The painting *Portrait de Suzanne Bambridge* (Oil painting on canvas, 1891, 50cm x 70cm, Inv. 4491) by Paul Gauguin (1848-1903), owned by the Royal Museums of Fine Arts of Belgium is going through a restoration process. Several problems could not be answered by visual inspection and multi-spectral imaging. We have performed a comprehensive analysis by MA-XRF, Raman and FT-IR analysis to help in the decision making with regard to the restoration. Data acquisition using mobile non-invasive systems has been made in situ.

The MA-XRF results outline several pentimenti, for instance, the red cloth in the middle of the dress was larger, the Suzanne Bambridge's right ear was thicker and, a second right bar chair, differently oriented, was discovered. All the identified pigments, which also include those associated with later interventions (overpaints and inpaintings), are fully consistent with the Gauguin's palette, known thanks to the painter's writings and previous analytical studies conducted on some of his works.

Although, no material evidence was found out, the presence in some pink and greyish pink areas, of red lake(s), possibly degraded, remains highly suspected.

The identification in overpainted area of Emerald green, a pigment abandoned since the very beginning of the 20th century, suggests a retouching campaign prior to the acquisition by the museum of the painting, in 1923. Two types of filler were identified. The first one, the most abundant in the painting, involves chalk, while the second one, detected in much fewer places, mostly in longer horizontal cracks, contains lead white.

The micro FTIR analyses revealed the presence of casein in three micro samples taken from different restored areas. The casein identification allows thinking the portrait of Suzanne Bambridge could have been retouched by the artist himself. Although the right bar chair can be reasonably considered as a later addition, the possibility of a design change from Gauguin's hand cannot be ignored.

