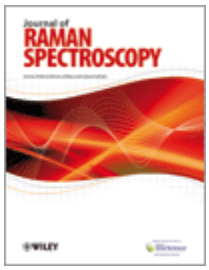

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Maya blue-green pigments found in Calakmul, Mexico: a study by Raman and UV-visible spectroscopy

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KEYWORDS

Raman and UV-visible spectroscopy • Maya blue • veszelyite • copper pigments • archaeology

ABSTRACT

After more than two decades of fieldwork in the Maya archaeological site of Calakmul, Mexico, numerous remnants of blue and green pigments have been reported on wall paintings, as well as on funerary paraphernalia, such as masks, miniatures and vases. The importance of these pigments is linked to the sacred values that Maya people associate with blue and green colours since pre-Columbian times. These hues symbolise water, and are therefore associated with fertility and regeneration. This paper aims to perform a survey of the blue and green pigments used in the Early Classic and Late Classic periods in Calakmul (300-850 **A.D.**), in order to have a better understanding of their chemical composition and origin. Analyses were performed on microsamples using Raman and UV-visible spectroscopies to evaluate the possibilities that these techniques can offer in future *in situ* researches on Mesoamerican archaeological materials and objects. With these analyses, we have documented a large blue-green chromatic palette, which includes the earliest *Blue Maya* and *Green Maya* known to date, as well as malachite, pseudomalachite and an unknown-up-to-now blue-green mineral pigment, veszelyite, used specifically for ritual objects. The results indicate a careful selection of imported products and the mastering of a complex ancient Maya pictorial tradition. Copyright © 2008 John Wiley & Sons, Ltd.

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