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## Unraveling the materials and techniques of post-Byzantine wall paintings: Is there a sole pictorial phase at the catholicon of Stomion, Central Greece?

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### Abstract

Saint Demetrius of Stomion is a historical monastery placed in the geographical area of Larissa town, Greece, with a remarkable presence from its founding until nowadays. The monastery's present *catholicon* (main church) has been dated in the 16<sup>th</sup> century and its surviving wall paintings were constructed in 1758. In addition to the characterization of the materials applied, the purpose of this study is to determine the existence of a sole pictorial phase, that of the mid-18<sup>th</sup> century, or the occurrence of overpaintings. Additionally, the present study aims to begin the establishment of the documentation of materials and techniques of the late post-Byzantine iconographic guilds, which acted in Central and Northern Greece. The collected samples were analyzed by means of microscopic, spectroscopic and thermogravimetric methods. The use of fresco technique is implied by the major participation of calcium carbonate in all of the painting layers, its main contribution in the plaster layers and the microstratigraphic analysis of the samples' cross-sections, while the scarce and local presence of a proteinaceous material implies the limited use of egg-tempera technique for the highlights. The pigment analysis shows that mostly traditional pigments were used, including cinnabar, ferrous pigments (ochre, sienna, umber), minium, Naples yellow, massicot/litharge, green earth (celadonite), malachite, carbon and bone black, calcite, kaolinite and lead white. The absence of modern pigments, the consistency of all samples regarding microstratigraphy and applied materials, and the lack of the extensive use of an organic medium, strongly suggest the lack of overpaintings.

**Keywords:** Post-Byzantine iconographic guilds; FTIR/ $\mu$ -FTIR;  $\mu$ -Raman; SEM-EDS; TGA

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