The technology of red lake pigments and technique of application in Anton Möller's and Hermann Han's paintings - non-invasive optical microscopy, SEM-EDX and µ-XRD analysis on samples

Justyna Olszewska-Świetlik[1], Bożena Szmelter-Fausek[2]*

[1]Institute for the Study, Conservation and Restoration of Cultural Heritage, Nicolaus Copernicus University, ul. Sienkiewicza 30/32, 87-100 Toruń, Poland. E-mail: justolsz@umk.pl
[2]Institute for the Study, Conservation and Restoration of Cultural Heritage, Nicolaus Copernicus University, ul. Sienkiewicza 30/32, 87-100 Toruń, Poland. E-mail:bozenasz@umk.pl
*Corresponding author. Tel.: +48 501 357 853

This poster discusses the painting technologies pertaining to red lake pigments and techniques of their application used in the Polish School of Painting, adding to what is already known from published analyses elsewhere, outside Poland. Complementary data on the Polish school enables the expansion of the data on the history of red organic dye production and on the paintings.

The analysis of the substrates in red lake pigments from 17th century Gdańsk paintings is presented in this paper. Three world famous panel paintings, two by Anton Möller and one by Hermann Han, were investigated. Different non-invasive analysis methods on one sample from each painting, such as optical microscopy (OM) under visible and ultraviolet light, energy dispersive X-ray microanalysis in a scanning electron microscope (SEM-EDX) and X-ray microdiffraction analysis (µ-XRD), enabled the determination of the substrate. The main goal of this study was to determine if µ-XRD can characterize the inorganic substrate in red lake layer cross-sections.

Keywords: Preparation of lake pigment dyestuffs; Substrates; X-ray microdiffraction analysis µ-XRD of cross-sections; Energy dispersive X-ray microanalysis in the scanning electron microscope SEM-EDX

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