

Examination of reverse painting on glass (*Hinterglasmalerei*) with OCT

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Since 18th century the *Hinterglasmalerei*, also known as reverse painting on glass, has been popular in folk art of Central and Eastern Europe. In this technique a plate of glass is used not only as a support for the paint layers, but also as a front surface of the painting, shiny and impermeable. As a result of this approach the process of painting has to be performed in order opposite to the classical painting techniques. The layers which are intended to be viewed as finishing details (like glazes and highlights) are in fact painted in the first place, and followed by adding opaque background paint. Lack of access to the layers of painting crucial to its esthetics, together with seldom predictable materials used by the artists, hinders both inspection and conservation treatment.

Its ability of remote sensing renders Optical Coherence Tomography especially convenient for examination of reverse painting on glass. By means of the OCT, uniquely to other examination methods, layers closest to the viewer are most convenient to investigate. Moreover, the inspection is possible without dismounting the picture from the frame and protective back cover. In this experiment a Spectral OCT instrument of 4 μm axial resolution and 100 dB sensitivity was utilised.

In the figure a cross-sectional view through the fragment of 19th century folk painting is presented showing different types of damages specific for this kind of artwork. Light approaches the object from the top and propagates through the supporting glass (1). Then the multiple semitransparent paint layer (2) or strongly absorbing contour paint (3) is expected. However, in this case the adhesion of this layer to glass is quite poor and the paint is detached in many places. Some detachments are filled with consolidation adhesive (4) remaining after some previous conservation treatments, whereas the others, presumably developed later, are empty and form blisters (5). The process is dynamic and new detachments (seen as strong boundary lines between glass and paint layer) are visible at right hand side of the image.

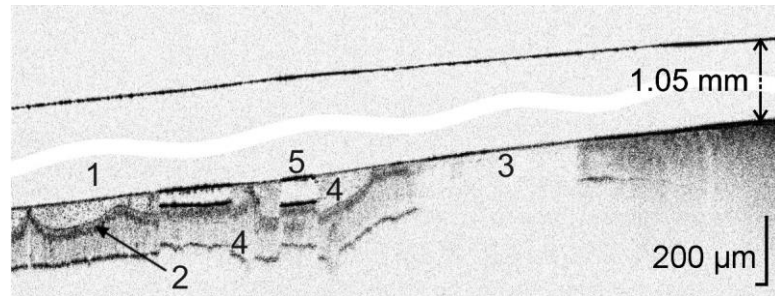


Fig. 1. An example of OCT tomogram of reverse painting on glass. Glass thickness is reduced for tightness of the picture. See text for description.

In this contribution results of examinations of 19th century folk painting will be discussed with emphasis on applicability of OCT to resolving specific problems related to conservation of this object. Furthermore, the application of OCT as a monitoring tool for assessment of various consolidation techniques will be presented.

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