Applicability of Optical Coherence Tomography at 1.55 μm to the Examination of Oil Paintings

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Abstract. With 47 samples of commercially available oil paints, the applicability of OCT to non-invasive tomography of paint layers was examined. Two different instruments, utilizing near-infrared light with central wavelength of 823 nm and, for the first time, 1.55 micrometer, were used to obtain cross-sectional images. Example tomograms are given; a ray tracing correction of images is also discussed. The tests revealed that applicability of OCT is limited to certain pigments and the longer wavelength is better suited for this application.