

MULTISPECTRAL METHODS

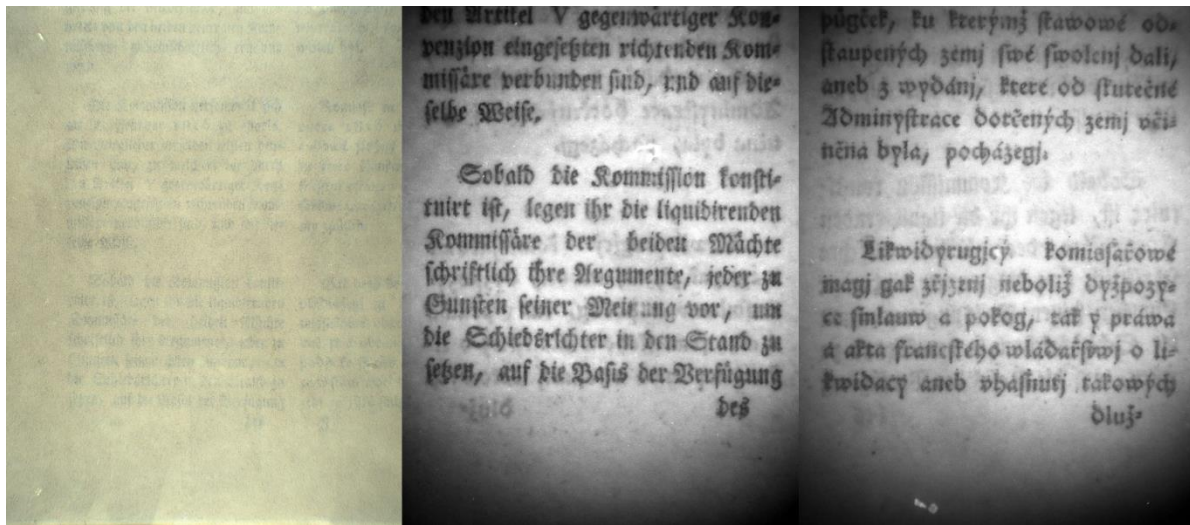
EXAMPLES OF NON-INVASIVE DOCUMENT EXAMINATION USING VSC 8000

Visibility of paper mold infestation

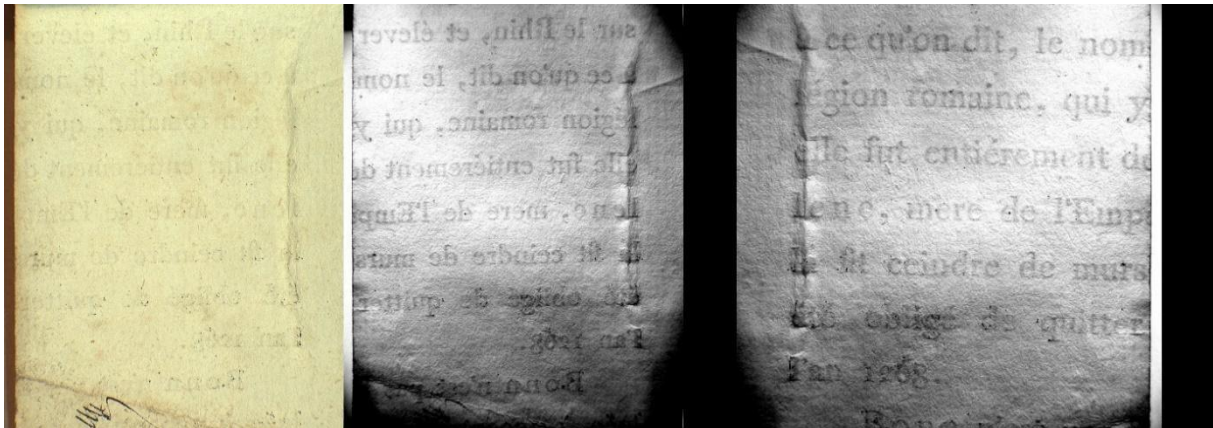


A mold-damaged document. When observed in 365 nm UV radiation (right), in the left part of the image, mold infestation is visible in the text, which was not visible in scattered visible light (left). The image in the UV region shows damage in the text in the left part that was not visible in the VIS.

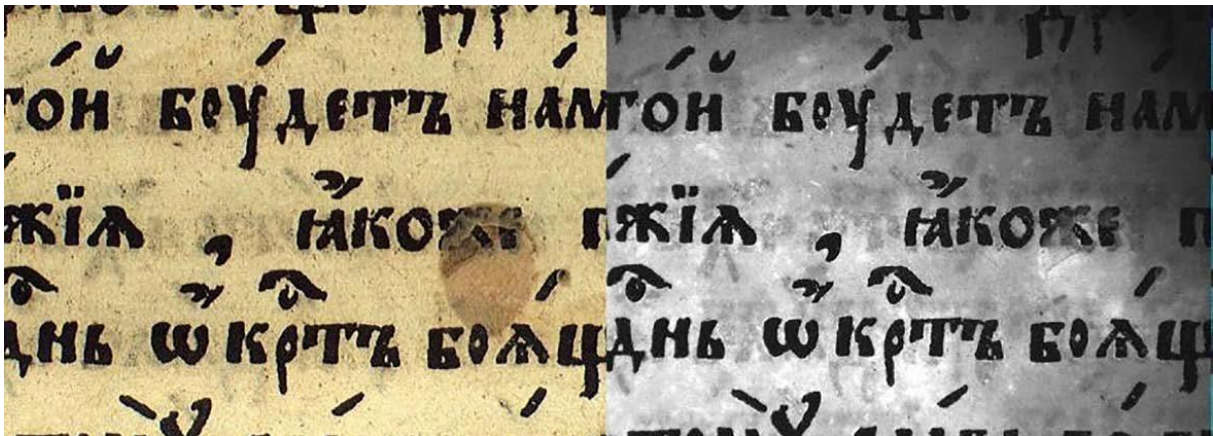
Display overlaid illegible text



A document ready for paper splitting. It is glued between clean paper used as a carrier during the splitting of the document and its subsequent internal hardening. In this case, the splitting was not carried out and the document was preserved in the preparation phase for this process. The double-sided text is completely covered with thicker paper impregnated with an unknown glue. When observing the translucency in the VIS (right), the texts from both sides of the document overlap and the result is practically illegible. While in spotlight with a wavelength of 515–640 nm using the RG725 long wave pass filter, individual pages of text can be displayed very well without significant light shining through from the other side. The result is a legible text of both sides



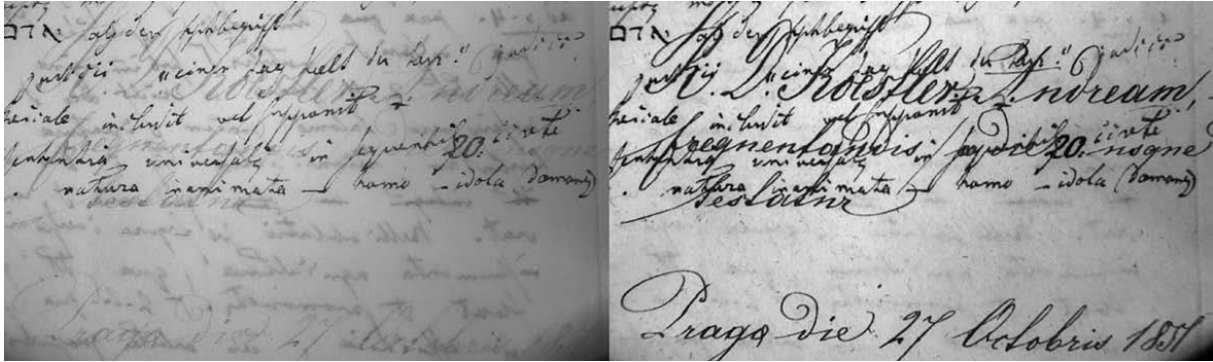
Printed sheet used for the flyleaf of another book. The printed side is glued to the binding board and the text is very indistinct in VIS light (left). However, when viewed in incident light using the RG925 long wave pass filter (in the middle) and mirrored image rotation (right), the text can be displayed well.



Overlaying the text with wax. Observations in incident visible light (left) and in spot lighting 585-720 nm with RG 780 nm short wave filter (right). The text can be read well in the chosen lighting.



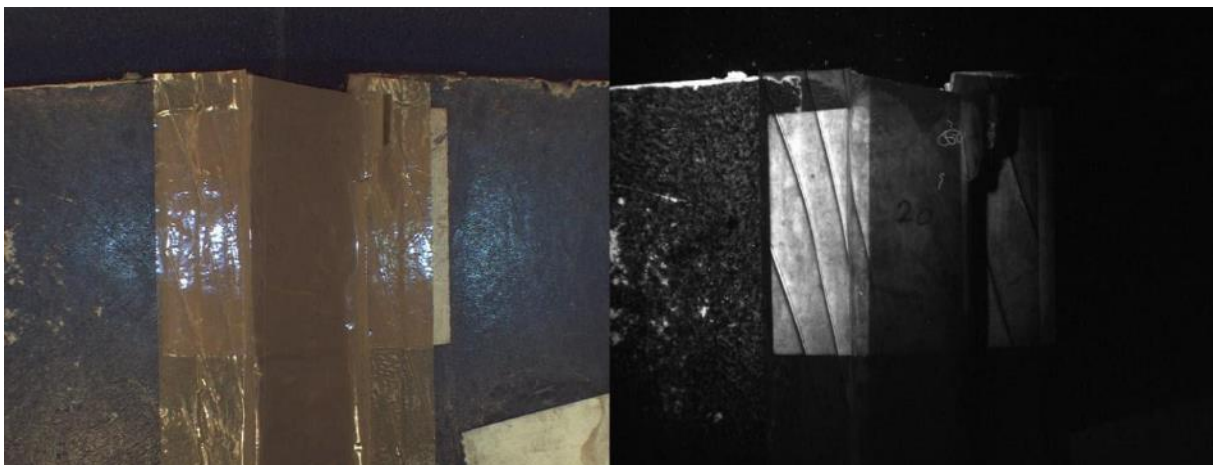
Handwritten document. Observations in incident visible light (left) and in spot lighting 585-720 nm with RG 780 nm short wave filter (right). The text can be read well in the chosen lighting.



Two overlapping manuscripts on paper. When observed in absorption mode, the darker ink (small font) can be directly seen in the 892 nm region (bottom left) while the lighter ink (large font) disappears. Both inks are prominent in the 424 nm region (bottom right). By subtracting these images (top right), you can achieve visibility of the lighter ink without significant disturbance of the darker ink.



Label affixed to the front cover of the book. Observations in incident VIS (left) and in spotlight of wavelength 545–675 nm with long wave pass filter RG780 (middle). Mirror inversion and conversion to negative display (right). An example of a label affixed to the front cover of a book. When viewed in spotlight at 545–675 nm using the RG780 long wave pass filter, by mirroring the image and converting it to a negative display, the text at the bottom of the label can be displayed without having to remove it.



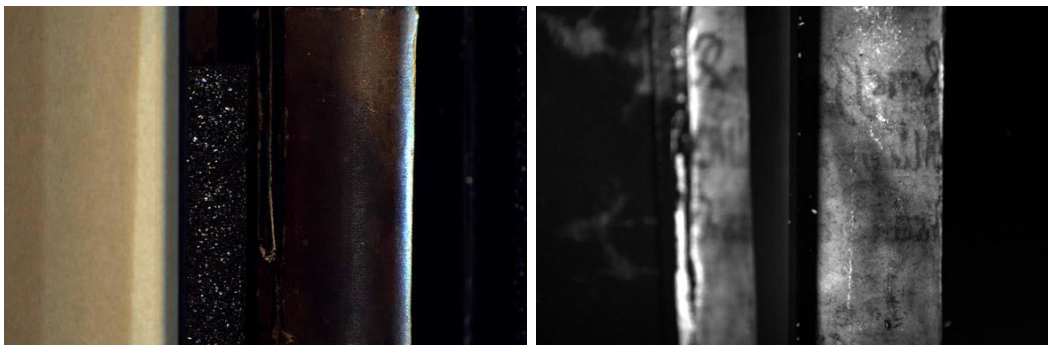
Book spine taped with opaque brown tape. Observations in incident VIS (left) and in spotlight of 515–640 nm wavelength with long wave pass filter RG780 (right). When observed in spotlight at 515–640 nm using the RG715 long wave pass filter, the original numerical designation of the volume can be displayed.

Use of side lights



Showing the relief on the front cover of the bookbinding with side light (VIS), with which the relief of a bookbinding, for example, can be well documented. The advantage of this device is the possibility of independent continuous positioning of both side lights. The angle of the side light can therefore be set individually for each monitored element.

Use of a wedge mirror



Charred book spine. Observations in incident VIS (left) and in spotlight of 515–640 nm wavelength with long wave pass filter RG715 (right). Due to spatial reasons, or due to extensive damage to the bookbinding, it is usually not possible to observe volumes placed with the back facing up (towards the camera of the instrument). The wedge mirror can be used in these cases. An example is charred spine of the book in incident visible light. This book cannot be opened without damage the spine. When observed in spot light at a wavelength of 515-640 nm using of the long-wave filter RG715 it was possible to make the relief on the book spine visible.