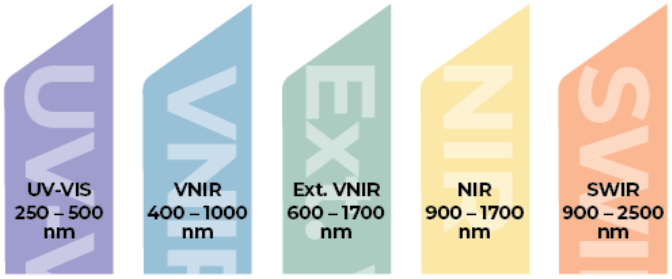
Headwall is the proud recipient of these honors and more...

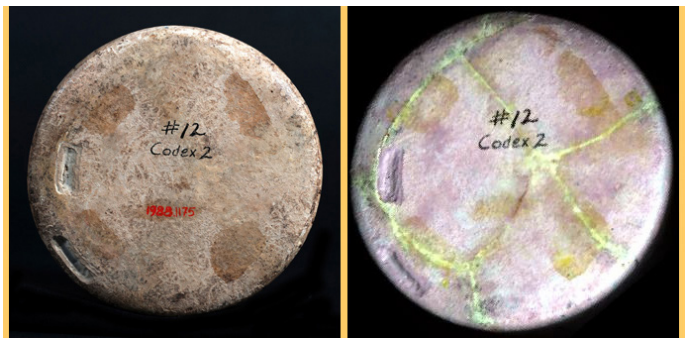
Headwall APPLICATION NOTE

Spectral Imaging for Cultural Heritage

Non-Contact UV to SWIR Imaging



The science of spectral imaging in the infrared ranges is extremely valuable to the field of artwork analysis and conservation. It is a non-invasive, non-contact means by which complete spectral data is collected for every pixel within the field of view across hundreds of narrow, contiguous spectral bands within the range of interest.



MAYAN VASE

Historically significant documents such as the Dead Sea Scrolls, Gettysburg Address, and ancient maps have benefited from non-invasive imaging and analysis using Headwall sensors and software to detect subtle changes in color that can contribute to more accurate forensic analysis. Enhance faded or hidden features, confirm authenticity, identify regions for restoration, and more.

HISTORICAL DOCUMENTS

Chemical imaging shows that the vase bottom has significant repairs, and that the restoration and original can be separated in SWIR and are chemically different. The restoration has been painted over and is not visible to the eye. Such data can provide information on past repairs that may not be documented.

APPLICATION NOTE

Pigment & Binder Mapping

The SWIR spectral image chart to the right shows there are two different binders in this painting, animal glue and egg. Knowing the nature of the organic pigment binders is important to understanding the chemistry of changes in the objects as well as doing repairs using matching materials.

ANALYZE STONE DESTRUCTION OVER TIME USING HYPERSPECTRAL IMAGING

SPECTRAL IMAGING DETECTS CORROSION FROM IRON-GALL INKS

Ink drawing with iron-gall ink corrosion, which also appears black

False color composite shows corroded areas in black, on lower right, and ink in red

SPECTRAL IMAGING FOR CULTURAL HERITAGE
Non-Contact UV to SWIR Imaging

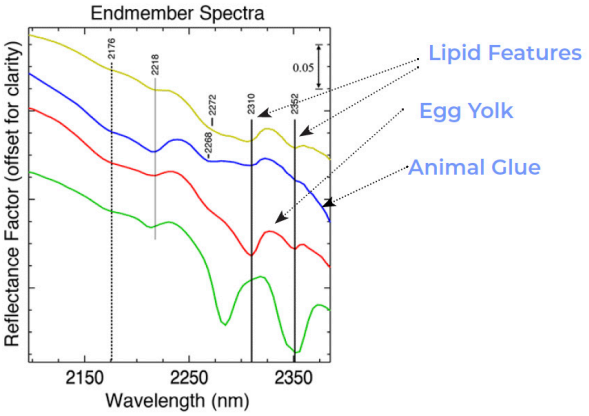
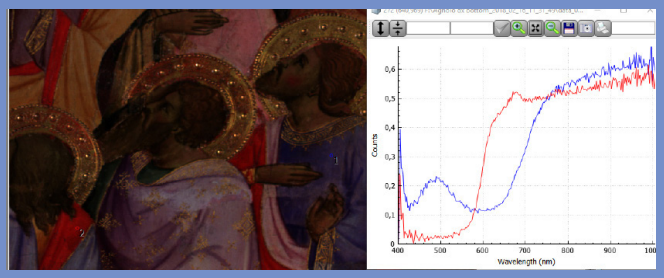
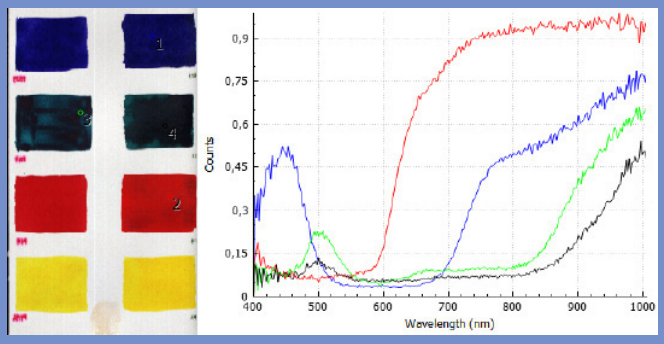


Figure 1. Dooley et al. Mapping of egg yolk and animal skin glue paint binders in Early Renaissance paintings using near infrared reflectance imaging spectroscopy. Analyst. 2013, Vol. 138 , pp. 4838-4848.

IDENTIFY SPECTRAL SIGNALS





THE HEADWALL ADVANTAGE

- Eliminate manual sampling
- Rapidly scan entire product
- No-contact scanning
- Non-destructive illumination

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