

AGILENT SOLUTIONS FOR ART AND HISTORICAL OBJECT CONSERVATION

The Measure of Confidence

FTIR and UV-Vis Technology for Art Conservation

Agilent Technologies offers a suite of FTIR and UV-Vis products that are ideal for scientists involved in research, conservation, restoration and authentication of important art and historical objects. The 4100 ExoScan, 4300 Handheld FTIR, Cary 620 FTIR Microscope and Imaging system, and Cary 60 UV-Vis spectrometer, have proven features that make them well suited for this important market and are widely accepted in museums, conservatories and universities world-wide.

FTIR and UV-Vis Spectrometers are:

- Proven, with class leading performance at a cost-conscious price point
- Well suited to analysis in lab or at a remote site
- Capable of analyzing objects that are too large, too valuable or too remote to measure with conventional spectrometers
- Equipped with sampling technology that is well matched to the needs of non-destructive analysis of valuable and rare objects
- Easy to learn, easy to use and provide information quickly



Visit agilent.com/chem/art today to view an OnDemand webinar video.

- ✓ See the systems in use!
- ✓ View real world examples and the data behind the samples
- ✓ Get more detailed information on how the Agilent systems can work to your advantage!

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The benefits of FTIR and UV-Vis analysis for Art Conservation:

- Analyze paintings, papers, documents and manuscripts, historical photographs, statuary, architecture, tapestries, tiles, mosaics, wood etc.,
- Determine the identity of natural and synthetic organic and inorganic pigments, colorants and dyes, siccative binders, lacquers, resins, coatings, adhesives, fibers.
- Determine the effect of aging including damage caused by UV, thermal and environmental pollution.
- Support cleaning and restoration processes of rare and historical objects.
- Identify counterfeit objects or objects that have been restore.



Pictured above, the 4100 ExoScan FTIR, measures delicate samples non-destructively in all types of locations.



Lightweight with on-board battery power - measure in any orientation with the 4300 Handheld FTIR.

4100 ExoScan and 4300 Handheld FTIR

- Proven in thousands of hours of field use.
- Small samples do not need to be removed for analysis; true non-destructive analysis including support of cleaning and restoration processes.
- Extremely compact, robust optical system is the performance benchmark for hand-held or portable FTIR systems.
- Spectrometers can be used in any orientation, pointed up, down or sideways, thus art that is located on ceilings, in caves etc can be analyzed as easily as those on flat walls.
- Lightweight on-board battery power - local power supply is not an issue at ancient conservation sites where cave art, ceiling paintings and other immovable ancient objects may be located.
- Allows larger areas to be scanned in real-time mode to locate areas of interest for more thorough infrared investigation.
- Interchangeable sampling available for diffuse or internal (ATR) reflection measurements, as needed.
- Compact size sampling interface configurations enables the analysis of less accessible spots and/or analysis of curved surfaces of an object.
- Intuitive, easy to use software for identification or quantitative analysis.



Pictured above, the Cary 60 UV-Vis, with an Innovative fiber optic probe for remote analysis of objects

Cary 60 UV-Visible Spectrometer

- Compact, easy-to-use, cost-effective – for lab or field site analysis.
- Proven, rugged, high performance, low noise optical system.
- 10 year lifetime Cary Xe flash lamp technology is the benchmark for UV-Vis spectrometers.
- Can be run from a 12V car outlet or battery for field use.
- Immune from the presence of room light due to flash lamp technology.
- Enables larger samples and/or objects that cannot be moved to be measured conveniently.
- Exceptionally fast analysis time – entire 190-1100 nm wavelength range in 3 secs.
- Innovative fiber optic probe for remote analysis of objects.
- Reflectance accessory has detector in the measuring probe head so that fiber optic delivers light, but does not need to return it to spectrometer, providing superior data quality.
- Provides diffuse reflectance analysis of pigment color and composition at performance levels associated with higher priced UV/Vis systems.
- Objects for analysis can be 1.5 meters from instrument providing versatility and convenient analysis.
- Onboard CCD allows visualization of sample analysis location.

Cary 620 FTIR Microscopy and Imaging System

- Provides “damage free” micro ATR FTIR imaging analysis, whereby the ATR crystal does not leave any marks or indentations on the sample that are typical in traditional ATR FTIR imaging techniques used for art conservation samples.
- Enables the collection of micro ATR FTIR images from high value samples that are fragile and sensitive to applied pressure and cannot be mounted in support resin, via unique “Live ATR Imaging”
- Enables the collection of micro chemical images in seconds, with high spatial resolution down to 3 microns.
- Unique automated high magnification optics provide for 1.1 micron pixels without objective change, preserving full 21mm objective working distance for the analysis of bulky samples.
- A unique 4x IR objective ensures that small features can be quickly and easily detected over a large area cm areas – all within minutes.



Pictured above, the Cary 620 FTIR Microscope and Imaging system can measure delicate samples in minutes of high value samples.

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This information is subject to change without notice.

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