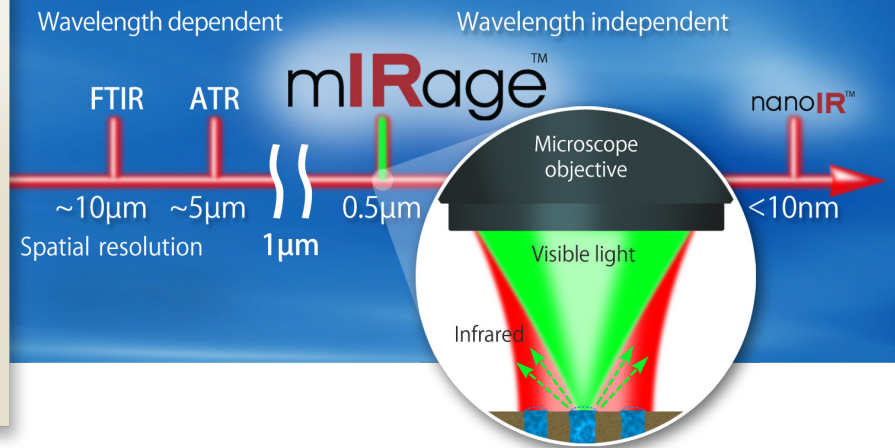


The field of IR spectroscopy just changed!

- Submicron IR spectroscopy and imaging
- Transmission quality IR spectra in reflection mode
- Wavelength independent spatial resolution
- Fast, easy to use, optical non contact technique



Submicron IR spectroscopy

The mIRage™ IR microscope is an innovative new system uniquely providing submicron IR spectroscopy and imaging across a wide variety of applications.

Using a proprietary Anasys technique based upon photothermal IR spectroscopy, mIRage breaks the diffraction limit and bridges the gap between conventional IR microspectroscopy and nanoscale IR spectroscopy.

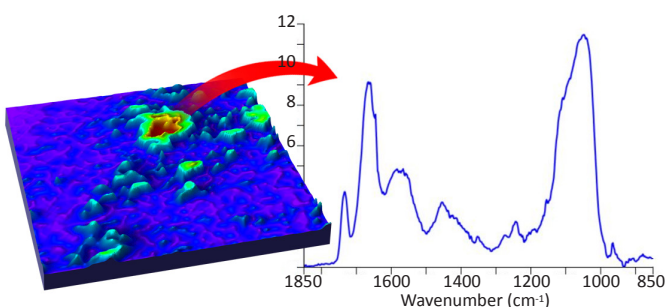


The Mirage IR microscope changes the field of IR spectroscopy with a novel approach to achieving sub-micron resolution IR.

Transmission FTIR quality spectra in reflection mode – eliminates need for thin sections

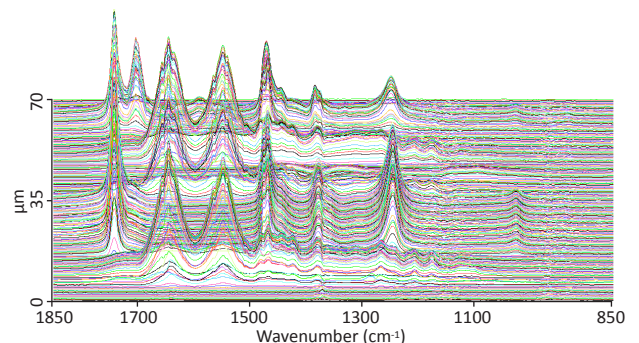
For the first time, Mirage provides IR wavelength independent spatial resolution, highly sensitive IR measurements and transmission quality absorption spectra in reflection mode. Thus dramatically simplifying sample preparation, eliminating the need for thin samples, enabling measurement of thicker samples and improving measurement turnaround times.

No need for thin samples



Bone sample: Reflection mode IR Spectra and hyperspectral imaging 25-µm x 25-µm array, 500-nm spacing. Left: Single wavelength image (1058 cm⁻¹) from Hyperspectral data set Right: Single-pixel spectrum – 1s collection time

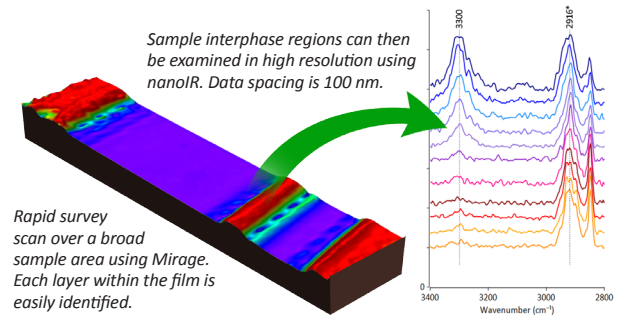
Resolve submicron features



Packaging sample section: Reflection spectra-line array across multiple regions. 138 spectra, 0.5 µm spectrum spacing, 10 co-averages/spectra. 12 sec/spectra collection time. Data courtesy of Greg Meyers, M Rickard, Dow Chemical Company.

IR spectroscopy from macroscale to microscale and down to nanoscale

The Mirage IR microscope can also combine with the nanoIR™ platform to enable microIR to nanoIR capability, measuring sample features from submicron resolution to below 10nm.

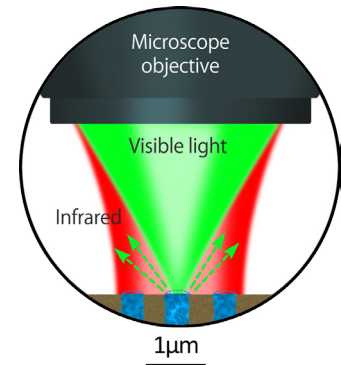


Fast, easy to use, optical non contact technique

The Mirage system overcomes the IR diffraction limit with an innovative technique utilizing the same fundamental principles that govern photothermal based AFM-IR.

A tunable pulsed mid-IR laser induces photothermal effects into a sample surface, which are measured using a visible probe laser focused on the sample.

The measurements are collected in a fast, easy to use manner without the need for contact-based techniques like ATR spectroscopy



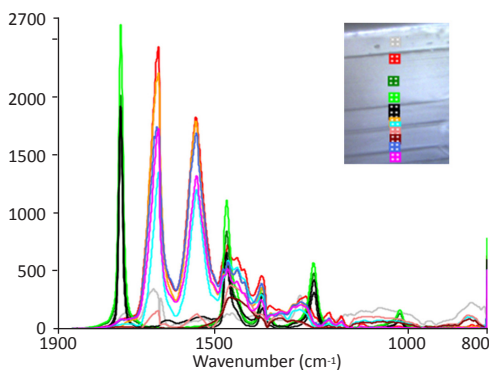
Photothermal IR Spectroscopy

mIRage covers a broad range of applications

Mirage provides unique, first and only data covering a wide range of applications including polymeric samples and materials, life science (bone, cells, hair), complex pharmaceutical samples and organic defects and contaminants in micro-electronics as well as many more.

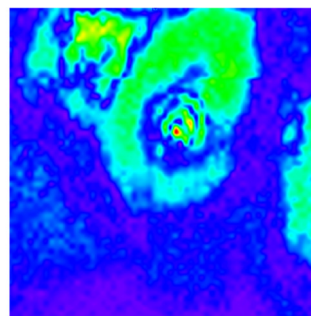
Send us your samples to see how Mirage can solve your problems or help reveal new discoveries.

Polymers



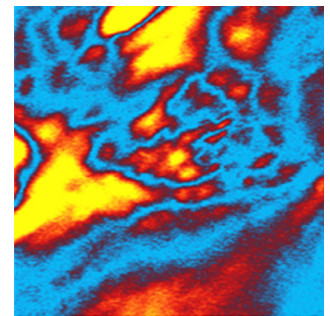
Multilayer film sample: Reflection mode spectral line array on each layer within cross sectioned film sample. 100 scans/spectrum (140 sec). Inset: mIRage optical image of sample cross section, embedded in epoxy stub. Data courtesy of Greg Meyers, M Rickard, Dow Chemical Company.

Life science



Porcine stem cell sample: Reflection mode single wavelength image (1540 cm⁻¹) extracted from hyperspectral data set. 30 x 30 µm image with 500 nm point spacing, 1 spectrum/point (1s).

Pharmaceuticals



Drug/Polymer blend sample: Reflection mode single wavelength image (50 x 50 µm) collected at 1666 cm⁻¹, highlighting distribution of the drug, dexamethasone, in a PLGA polymer matrix.