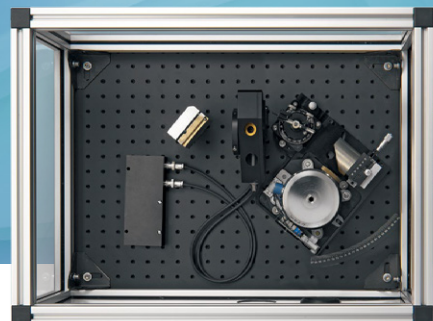


Interfacial characterization using the Nicolet iS50

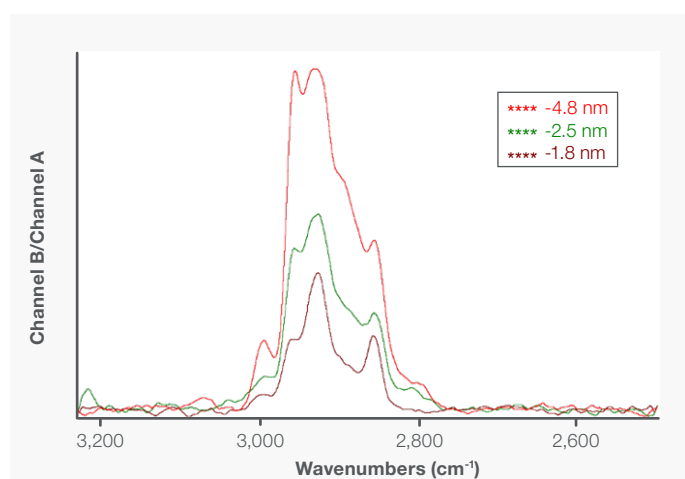
With Polarization Modulation FTIR Spectroscopy

Important chemistry happens at interfaces and surfaces, from cellular membranes to the surfaces of nanomaterials. The Thermo Scientific™ Nicolet™ iS50 FTIR Spectrometer, configured with the Research Module and our OMNIC™ 9 research software, will provide your lab with the capability to characterize ultra-thin films, interfaces, and the reactions they host, quickly and with ease.

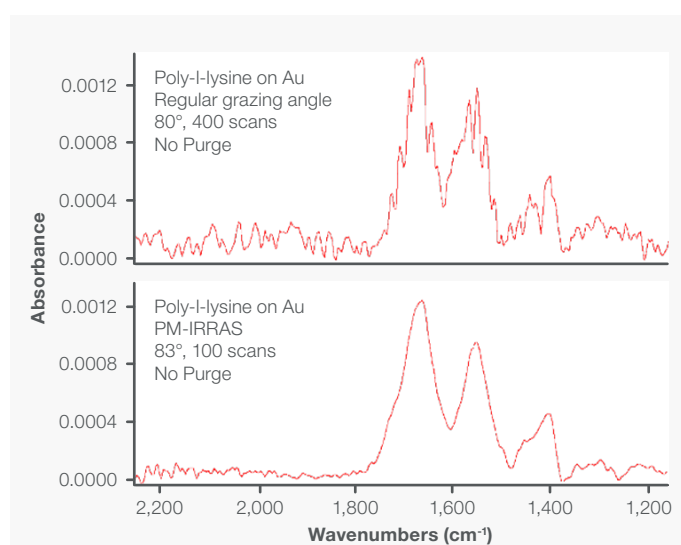
While we enable and support several advanced spectroscopic methods, the method we feature here is polarization modulation infrared reflection absorption spectroscopy (PM-IRRAS), with the release of the updated digital photoelastic modulator.



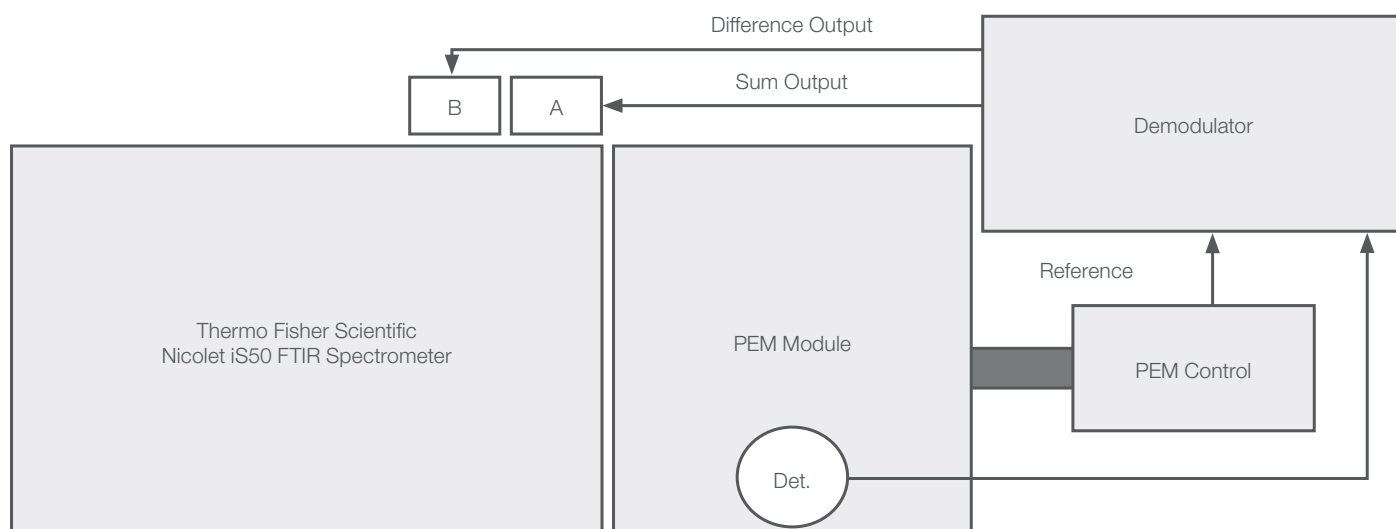
Thermo Scientific Nicolet iS50 FTIR Spectrometer with complete PM-IRRAS module.



The spectra show the advantage of the dual channel synchronous sampling. Notice the reduction in noise, moisture contamination, and the number of scans for the PM-IRRAS spectrum as compared to the regular grazing angle spectrum. These data are presented in Advanced FTIR Spectroscopy by Eric. Y. Jiang.



PM-IRRAS spectra demonstrating how the organization of an alkyl chain changes with increasing thickness of the layer.



Using the Thermo Fisher Scientific PM-IRRAS kit, you will have the ability to probe and characterize monolayers and films on metal surfaces for a variety of applications:

- Coatings
- Catalysis
- Bio- and immunosensors
- Molecular recognition reactions
- Intramembrane reactions
- Photovoltaic materials

These applications probe complex chemical environments while seeking detailed information about molecular structure and orientation. Dual-channel synchronous sampling makes answering complex questions possible by providing two key attributes:

- Surface-selectivity for probing molecular orientation
- Enhanced sensitivity and elimination of most interferences with fewer scans

As a result, spectral features clearly reveal molecular-level characteristics of the film, surface, interface, or membrane.

With this redesigned product, the experimental setup is straightforward, and our OMNIC SST software suite allows you to set up your experiment parameters and get answers fast.

The complete PM-IRRAS Module for the Nicolet iS50 contains:

- Base Research Module (right-side configuration)
- Optics Kit Subplate
- Photoelastic Modulator Kit
 - 50 kHz ZnSe Photoelastic Modulator
 - Photoelastic Modulator controller
 - Wire grid polarizer and mount with a clear aperture of 30 mm
 - Mounting hardware for iS50 research module
- PM-IRRAS Experiment Kit
 - Pin-in-place focusing optics
 - Variable Angle Sample Mount (90 to 45 degrees angle of incidence)
 - Detector Mount with Adjustable Mirror
- MCT Detector
- SSD-100 Demodulation Electronics
- IRRAS Test Slide

Thermo Fisher Scientific is your partner dedicated to supporting you in your research. The Nicolet iS50 is the premier research FTIR spectrometer with the performance and flexibility you need and can rely on to conduct your research.

 Learn more at thermofisher.com/is50

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