PM-IRRAS

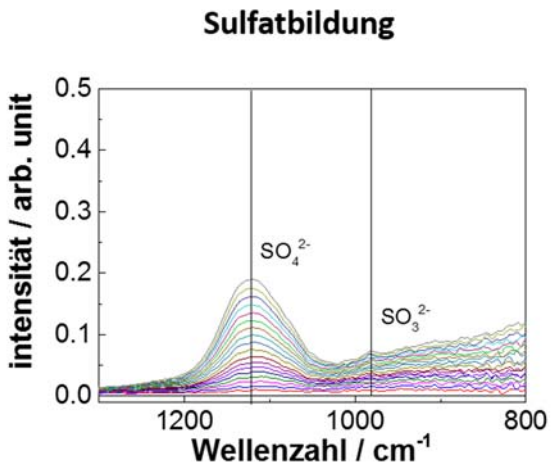
In infrared spectroscopy, molecular vibrations are excited by IR radiation. Infrared spectroscopy is therefore used to identify functional groups (hydroxides, carbonates, sulfates, C-H bonds). PM-IRRAS is a special method of measuring samples in reflection. This method is therefore particularly suitable for the analysis of smooth, reflective (metallic) surfaces or thin films on reflective surfaces. Due to the high sensitivity in PM-IRRAS measurements, sub-monolayers of molecules can already be detected. Another advantage of PM-IRRAS measurements is that interfering bands from atmosphere can be avoided.

Application:

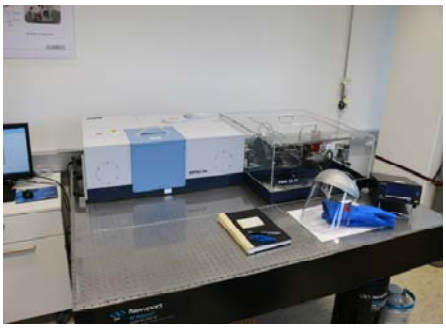
- Investigation of submonolayers, monolayers and other ultrathin coatings on metallic surfaces (with limitations even without the need for a reference sample)
- Corrosion processes
- Elimination of water vapor absorption (PMA 50 XL)

Specifications:

- Spectral range 650 - 8000 cm^{-1} with PM module
- Standard resolution: up to 0.4 cm^{-1}
- Wavelength accuracy: better than 0.01 cm^{-1} at 2000 cm^{-1}
- Standard Scan Rate: 0.1 to 3.75 cm s^{-1}
- Reflection angle of 30-90° adjustable
- Evacuation of the spectrometer space is possible for solid samples
- PMA: Purging with N_2 possible



Development of sulftic- and sulfatic corrosion products on a zinc surface. Weathering at 80% RH and room temperature. Measurements every 15 min. One recognizes a steady band growth.



Applications:

- Atmospheric corrosion processes
- Investigation of submonolayers, monolayers and other ultrathin coatings on metallic surfaces (in certain cases also without reference sample)

Sample requirements:

- Reflecting sample or transparent sample on specular substrate
- Samples must be flat and as smooth as possible
- Size up to 70 x 30 mm
- Height up to 5 mm

Additional equipment:

- Attachment for reflection measurements

CEST Kompetenzzentrum für elektrochemische Oberflächentechnologie GmbH
Viktor-Kaplan-Str. 2
2700 Wiener Neustadt
Tel: +43/2622/22266-0
Fax: +43/2622/22266-50
Email: office@cest.at
www.cest.at