Optical, X-ray fluorescence spectroscopy for compositional analysis

Often rapid and precise identification of composition of raw and finished products (on and off the site) are vital in several industries like mining, pharmaceutical, petrochemical, agriculture and food processing, etc. Our laboratory offers solutions for *in situ* analysis of materials in such challenging environments using reflectance, emission (optical) and X-ray fluorescence spectroscopic techniques.

Wavelength dispersive X-ray fluorescence spectrometer

The Rigaku Primus-III WD XRF is the ideal solution for analysing elemental chemistry to the tune of few tens of parts per million (ppm). This *non-destructive* technique is a boon for chemical analysis of thin films, cement, alloy and metal testing, precious metal assay / quality, soils, ores and other geological materials.

Field portable Fourier-transform infrared spectroscopy (FTIR)

This field deployable equipment is highly useful in non-destructive estimation of the compositional details of natural, manmade materials in the test site itself. This equipment measures spectral emissivity from 2 - 14 μ m for compositional identification. The telescopic facility of the equipment is very useful in analysing dynamic changes in composition as in the case of gas plumes, industrial exhaust.

Filed portable visible - near infrared spectroradiometer

In-situ spectral reflectance of surfaces in 350 – 2500 nm range at 1 nm sampling interval can be made using this versatile equipment. Reflectance spectroscopy has immense potential in several areas such as camouflage detection / characterisation, mineral exploration, mining, agriculture and food processing, sensor / camera calibrations, precision agriculture, sediment transport, plant physiology, atmospheric remote sensing, etc.



Field FTIR



Visible – near infrared imaging reflectance spectrometer



X-Ray fluorscence (XRF) spectrometer