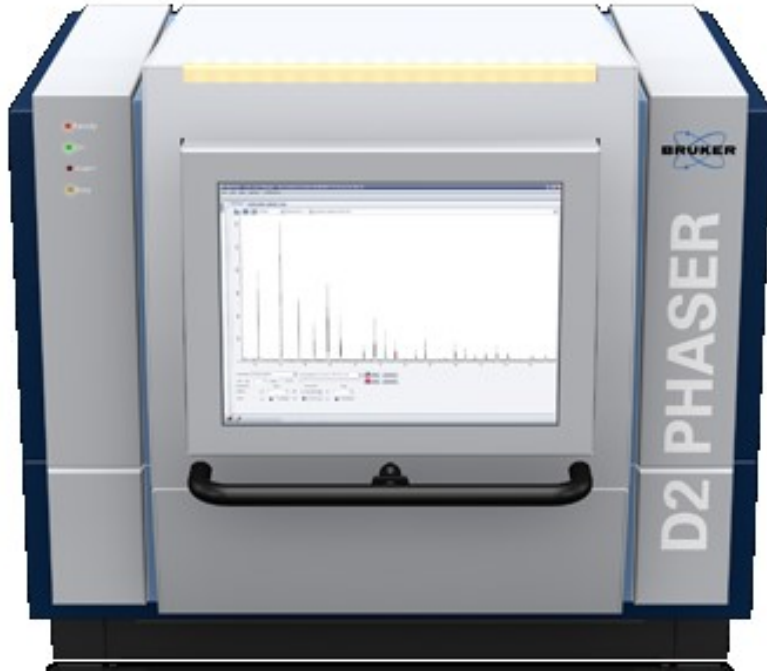


ANALYTICAL INSTRUMENTS



**X-Ray Powder Diffractometer
Bruker D2 PHASER 2nd generation**

Materials:
minerals, inorganics, cement, drugs

Application:
geology, chemistry, pharmaceuticals

- Phase identification and quantification
- Degree of crystallinity determination
- Phase properties (cell parameters, crystallite size, and lattice strain)
- Crystal structure analysis
- Wide variety of different sample holders of industrial standard dimension (\varnothing 51.5 mm)
- SAXS measurements of material exhibiting large d-spacings up to 10 nm



ANALYTICAL INSTRUMENTS



TA Instruments
Q600 SDT Simultaneous Thermal Analyzer

Materials:

polymers, minerals, inorganics, metals, cement, drugs, foods, composite materials

Application:

plastics, geology, chemistry, pharmaceuticals, cosmetics

- Simultaneous Thermal Analyzers measure both heat flow & weight changes in a material as a function of temperature (or time) under a controlled atmosphere.
- A simultaneous DSC-DTA-TGA can be used in a phases of research, quality control, and manufacturing operations.
- DSC-DTA-TGA measurements up to 1500 °C.



Prolabin & Tefarm

Polymer Additives, Cosmetic Ingredients, Catalysts



ANALYTICAL INSTRUMENTS



**Agilent Varian ICP/OES 720
ICP Optical Emission Spectrometers**

Application:

**environmental, geology, chemistry, pharmaceuticals,
nutraceutical, food, product safety**

Atomic emission spectroscopy that uses the inductively coupled plasma to produce excited atoms and ions that emit electromagnetic radiation at wavelengths characteristic of a particular element.

Chemical composition

Detection of trace metals and elements



Prolabin & Tefarm

Polymer Additives, Cosmetic Ingredients, Catalysts



ANALYTICAL INSTRUMENTS



**LEO 1525 FE-SEM with EDX probe Bruker
Field Emission Scanning Electron Microscope**

Materials:

**polymers, minerals, inorganics, metals, cement,
drugs, foods, composite materials**

Application:

**plastics, geology, chemistry, pharmaceuticals,
cosmetics**

- Ultra high resolution and image quality - 1.5nm at 20kV, 3.5nm at 1kV
- Multiple detector
- High probe current and stability better than 0.5% per hour, for fast accurate analysis and mapping
- In-lens detector for clear, bright surface-specific imaging
- Short working distance of 8.5mm for simultaneous high resolution, EDS, WDS, BSD analysis



Prolabin & Tefarm

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ANALYTICAL INSTRUMENTS



TEM Philips 208

Materials:

polymers, inorganics, drugs, foods, composite materials, cellular morphology

Application:

plastics, chemistry, pharmaceuticals, cosmetics, biology

- HT range 20 – 120 kV
- 180.000x.

ANALYTICAL INSTRUMENTS



**Axio Zoom V16 Zeiss
Stereo and Zoom Microscope**

Materials:

Biological systems, polymers, inorganics, drugs, foods, composite materials, cellular morphology

Application:

Biology, plastics, chemistry, pharmaceuticals, cosmetics.

Motorized fluorescence stereo zoom microscope for biology combines a 16x zoom with a high numerical aperture of NA 0.25.

This microscope provides superior brightness in large object fields.

Fluorescence zoom microscope for the view of large samples in fluorescence contrast.

ANALYTICAL INSTRUMENTS



**Micromeritics (Norcross, GA, USA)
ASAP 2010 apparatus**

For porous Materials

**Application:
catalysts, chemistry, pharmaceuticals**

- Nitrogen adsorption–desorption isotherms
- B.E.T surface area
- Pore size characterization

ANALYTICAL INSTRUMENTS



**Jasco V-750
Spectrophotometer UV-Vis**

Materials:

Solids, liquids, pharmaceutical and cosmetic formulations, molecular and cellular biology

Application:

chemistry, pharmaceutical, cosmetic, biology

Simultaneous acquisition, for water quality analysis.

Wavelength range 190 – 900 nm

Wide dynamic range and high-absorbance by employing optimized high-order cut-off filters. Ultra high-resolution

Diffuse reflectance measurement using the ISV-922 Integrating sphere.

The graphic is a plot of the XY chromaticity in the color diagnostic application program.



Prolabin & Tefarm

Polymer Additives, Cosmetic Ingredients, Catalysts



ANALYTICAL INSTRUMENTS



Malvern Mastersizer 2000
Laser diffraction particle size analyzer

Materials:

Solids, suspension, dispersions, pharmaceutical and cosmetic formulations, biological molecules and cells

Application:

minerals, chemistry, pharmaceutical, cosmetic, biology

Particle size and distribution analyses

Particle size range 0,02 – 2000 μm

Wet and dry sampler

Standard Operating Procedures (SOPs) for laser diffraction particle sizing

Dual wavelength measurements



Prolabin&Tefarm

Polymer Additives, Cosmetic Ingredients, Catalysts



ANALYTICAL INSTRUMENTS



**FT/IR-4600 Jasco
FT-IR Spectrometer**

Materials:

polymers, minerals, inorganics, drugs, foods, composite materials. Solid, liquid and gas samples.

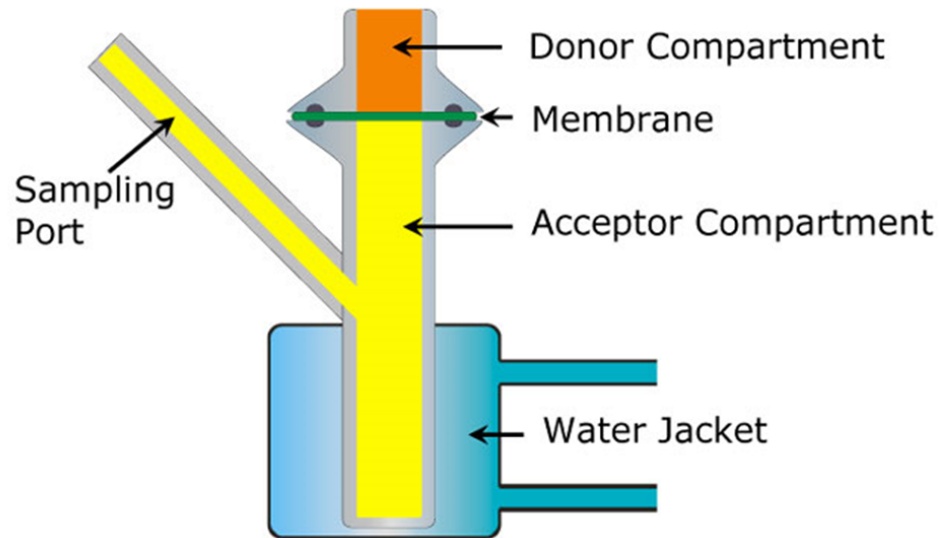
Application:

plastics, geology, chemistry, pharmaceuticals, cosmetics

- This spectroscopy gives better signal to noise ratio compared to the dispersive instrument
- With FTIR, spectrum can be obtained very quickly and saves time
- Gases, solids as well as liquid can be analysed with FTIR.
- By using FTIR no external calibration is required and gives accurate results.
- FTIR is non-destructive technique.
- Organic compounds and Inorganic compounds can be identified easily using fourier transform infrared spectroscopy.



IN VITRO RELEASE TESTS



Vertical Franz Cells
PermeGear

Materials:

Powders, Semi-solid formulations

Application:

pharmaceutical, cosmetic

Release and permeation tests from powder or semi-solid formulations intended for cosmetic or pharmaceutical uses

ANALYTICAL INSTRUMENTS



**Metrohm 883 IC plus
Ionic exchange HPLC Chromatograph**

Materials:

Drinking water, environmental samples, wastewater

Application:

geology, chemistry, environmental sciences

- Anions (qualitative and quantitative analysis)
- Cations (qualitative and quantitative analysis)
- Highly selective
- Low limits of detection, with a wide analytical range.
- Analysis of halides, anions and elements not available by ICP or XRF
- Analysis of molecular species rather than elements
- Reproducible.



Prolabin & Tefarm

Polymer Additives, Cosmetic Ingredients, Catalysts



ANALYTICAL INSTRUMENTS



**Thermo Scientific Trace 1300
Gas Chromatograph**

Materials:

organic compounds in general, drugs, foods

Application:

organic synthesis, pharmaceuticals, cosmetics, food industry

- High resolution power compared to other methods
- High sensitivity when used with thermal detectors
- Good accuracy and precision
- Separation and analysis of sample very quickly
- Sample with less quantity is also separated

ANALYTICAL INSTRUMENTS



Instron 4204
Universal testing system

Materials:
polymers, metals and alloys, composites

Application:
material science, industry

- Universal testing system stretch, bend and compress test samples at controlled test speeds or constant loading rates.
- Evaluates static product and material strength properties including uniaxial tensile, compression, cyclic, shear, flexure, bend, peel, tear and material characteristics such as elongation and modulus.



Prolabin & Tefarm
Polymer Additives, Cosmetic Ingredients, Catalysts



ANALYTICAL INSTRUMENTS



**Suntest CPS+ Atlas
Xenon Test Instrument**

Application:

**additives & colorants, cosmetics, graphic arts,
packaging, pharmaceuticals, plastics**

The SUNTEST CPS+ is used to test for property changes of materials caused by sunlight, temperature and moisture exposure in a short period of time. Product changes happening outdoor or indoor over months or years, such as fading, yellowing or embrittlement can often be simulated within weeks inside a SUNTEST.

ANALYTICAL INSTRUMENTS



**Nabertherm LT 9/11 B410
Muffle furnace**

Muffle furnace for preheating or ashing on air

Application:

fusing glass, creating enamel coatings, ceramics, soldering, brazing, rubbers and polymers.

- Measurement of the characteristics of materials at extremely accurate and high temperatures
- Ash content determination
- Determination of chemical composition, including water content and the proportion of non-volatile and non-combustible materials