Elemental Analysis by WDXRF

Multielement analysis from Beryllium to Uranium in solids and liquids by sequential wavelength dispersive X-ray fluorescence analysis (WDXRF)

X-Ray Tube: Excitation of fluorescence radiation from elements present in the sample
- Low kV for light elements
- High kV for heavy elements

Primary Beam Filters: Better detection limits
- Filters out interfering parts of the tube radiation by absorption improving the peak-to-background ratio

Collimator Masks: Analysis of different sample sizes
- To cut out radiation from the edge of the sample cup

Automatic Vacuum Seal: Quick switch of sample types
- Separating sample and goniometer chamber:
  - Solid samples: analysis under vacuum
  - Liquid samples: analysis in Helium

Collimators: Resolution and sensitivity
- Coarse collimators for high sensitivity
- Fine collimators for high resolution

Analyzer Crystals: Separation of element specific fluorescence radiation
- Each analyzer crystal covers an element range
- Multilayer optics for enhanced light element analysis

Detectors: Detection of the element specific fluorescence radiation
- Light elements are determined with a proportional counter
- Heavy elements are determined with a scintillation counter