BOWMAN *XRAY SYSTEM*

MOTORIZED/PROGRAMMABLE XY BASE

High Performance X-Ray Fluorescence Analyzer for Coating Thickness Measurement, Elemental Analysis, and Solution Analysis

XRF is most sensitive to metallic elements, particularly elements ranging from Ti-U on the periodic table. For coating thickness analysis, XRF can be applied to any metallic coating, single or multi-layered, over any metallic or non-metallic substrate. For alloy analysis, XRF can determine the composition percentage for each alloying element and can even identify the alloy grade number designation. For solutions analysis, metal ions in solution can be quantified in plating baths for process control.

Coating Thickness Measurement

X-ray fluorescence (XRF) is a versatile, non-contact, coating thickness measurement method for very thin multi-layer alloy coatings on small parts and complex shapes. Measurement is performed by exposing the sample to X-ray, where a collimator focuses the X-rays onto an exactly defined area of the test specimen. This causes characteristic X-ray emission (fluorescence) from both the coating and the substrate materials. This emission is detected with a high precision energy-dispersive detector.

Major benefits include:

- Non destructive testing with minimal sample preparation
- Fast analysis- expect to have analysis data in a few seconds
- Inexpensive operation: can be run by novice operators without dedicated scientist
- Versatile technique can measure for different type of matrix samples
- Small spot analysis for micro features on a big sample
- Simultaneous analysis of most of metallic elements
- Well accepted method by various industrial verification testing