FIELD PORTABLE XRF BEYOND TRADITIONAL HANDHELD ANALYZERS

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Field portable XRF analyzers have historically been limited to handheld systems. For tube-based systems, the size of the hardware and the power requirements limited the analytical capacity of any field portable system. Users requiring more powerful analysis beyond what is offered by conventional handheld XRF must look at more complex, stationary benchtop XRF systems. However, recent advancements in miniature x-ray tubes and detectors allow tubes that run at much higher power and count rates than conventional handhelds to be packaged into field-portable units. Novel excitation techniques are also employed that had previously been limited to benchtop-only applications. Such instrumentation is of particular interest for RoHS analysis (where low Cd detection limits are necessary), heavy metals in soils where low detection limits are required, and fluid analysis, such as S in fuels and wear metals in oils. We present the techniques used, as well as data on these applications.