

## A Powerful Tool for XRF and Detector Performance Characterization

### X-Ray Detector and Digital Pulse Processor

Thanos Pantazis  
Amptek Inc.

The long anticipated PX4 Digital Pulse Processor from Amptek has joined the successful XR-100 family of X-ray detectors. The system allows for XRF analysis in the field and satisfies QC requirements for monitoring detector performance. The PX4 is also a powerful research tool that can be used to optimize detector performance.

As shown in Figure 1, the detection of lead (Pb) is an easy task for this pair of instruments. The L lines are easily resolved within 1 minute of unit power-on. Since the PX4 is driven by software, only one switch exists on the box (power). Everything else is software selectable and can be set to automatically load on startup. This ensures consistent, fast, and easy operation.

Since the PX4 has 24 programmable peaking times between 0.8 and 102  $\mu$ s, it is well suited for a wide variety of applications. In addition, the determination of Resolution vs. Peaking Time (finding the noise corner), as in Figure 2, can be performed automatically by a software routine. With this information, the user can easily select the appropriate peaking time to maximize performance for the particular application, whether it be the best resolution, higher throughput, or a trade-off between the two.

XRF measurements used to involve costly, liquid nitrogen dependent, instrumentation. Amptek has broken another barrier in offering a low cost, easy to use system that not only performs the measurements, but also characterizes the system to satisfy QC requirements and to optimize performance across a wide range of applications.

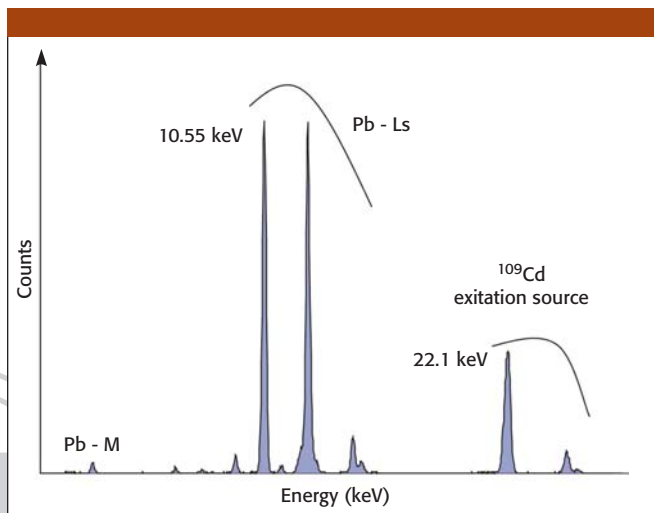


Figure 1.

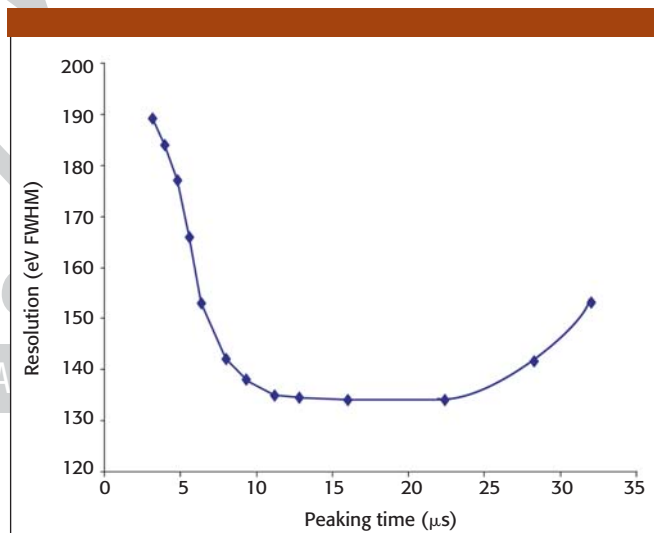


Figure 2.



**Amptek, Inc.**  
6 De Angelo Drive, Bedford, MA 01730  
Tel. (781) 275-2242, Fax (781) 275-3470  
sales@amptek.com, www.amptek.com