

MOXTEK'S DEVELOPMENTS IN COMPACT X-RAY SOURCES

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Manufacturers of XRF and XRD benchtop instrumentation face increasing demand for lowering detection limits, decreasing the sampling time, increasing accuracy and/or precision of measurements. The x-ray tube is a vital component of XRF and XRD instruments, which affects the aforementioned characteristics. There are several ways of addressing these needs; increasing the x-ray flux, conditioning the x-ray beam in terms of the size and energy spectrum, and increasing the high voltage which increases the activation energy. We will present the on several different prototype x-ray tubes developed at Moxtek which address performance needs of modern XRF/XRD spectrometers:

1. The high power conical (HPC) tube, which is a compact 75 kV tube with both a 150 Watt and 350 Watt package. This x-ray tube provides an unprecedented x-ray flux from a compact, air cooled device.
2. A microfocal x-ray tube, with a 100 microns or less focal spot size.
3. A portable and compact 120 kV & 5 Watt x-ray tube and high voltage power supply, an air cooled device in a hand size package.

In this presentation we will cover some of the basic functionality of each one of these sources, as well as some of the advantages for their intended x-ray applications.