What is an X-ray tube in a spectrometer

The X-ray tube works by accelerating electrons at a high voltage and bombarding them against a metal anode (anti-cathode), producing X-rays in the ...

X-rays can be generated by an X-ray tube. X-rays tube is a vacuum tube that uses a high voltage to accelerate the electrons released by a hot cathode to a high velocity.

Any XRF instrument nowadays comes with an X-ray tube for excitation of the atoms in the sample and a detector, for registering of the fluorescence radiation. The tubes can be water-cooled high-power ...

Usually a X-ray tube or sometimes a synchrotron is used. In the tube, high energy electrons are accelerated toward a metal target (like Cu, Mo etc.), where the X-rays are generated ...

In a micro-XRF spectrometer it is necessary to generate an intense, narrow X-ray beam. There are two main methods to do this which are summarized below, and will be discussed in more detail in the ...

The most common transducers for atomic X-ray spectrometry are the flow proportional counter, the scintillation counter, and the Si (Li) semiconductor. All three transducers act as photon counters.

The X-ray photons are detected using a Geiger-Mueller (GM) tube which is basically a charged, cylindrical capacitor. An incoming photon ionizes the gas in the capacitor and leads to a discharge ...

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When you use a x-ray fluorescence spectrometer, the x-ray tube generates primary x-rays that trigger fluorescence signals from your sample. These signals help you achieve accurate, ...

EDX spectrometers can also use miniature X-ray tubes or gamma sources, which makes them cheaper and allows miniaturization and portability.

X-ray Energy Spectroscopy (XES) is a technique for rapid, simultaneous multi-element analysis. When excited by an appropriate source, a sample will emit x-rays of energies that are characteristic for the ...

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