

ABSTRACT

The use of radioactive scanning devices has become widespread within the past few years, and they are now recognized as an important aid in many aspects of medicine and biology.

An Anger scintillation camera is a refinement of the conventional moving type scanner as it takes less time to map a given radioactive source due to the increased sensitivity of the large (11 inch diameter) scintillation crystal.

A positron camera, as described in this thesis, is a further improvement over existing scanning devices. It essentially obliterates all background sources of error which are ever present in the Anger camera and other types of scanners.