

NUCLEAR PARTICLES DETECTORS

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P R E F A C E

Nuclear science has started occupying a prominent position in almost every teaching and research institution. The application of radiations and radioisotopes in agriculture, medicine, various branches of natural sciences and industries is rapidly increasing. In fact, some countries are on the verge of starting nuclear industry. Therefore, more and more scientists and engineers are joining the field of nuclear science and technology.

Persons engaged in these activities should have a good knowledge of nuclear particles detectors because the detection of nuclear radiation is involved to a certain extent in all these activities. This book tries to explain the basic principles of nuclear particles detectors in a simple way. In an equally simple way, some of the finer details have also been explained viz., the number of peaks that will be generated by monoenergetic gamma ray, in its spectrum.

Semiconductor detectors are at present almost universally preferred for charged particle detection because of their compactness and excellent energy resolution. Lithium-drifted germanium detectors are likely to supersede very soon, sodium iodide scintillation counters in the field of gamma ray spectrometry. These detectors have been discussed in somewhat greater detail starting almost from scratch.

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