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Medical Cyclotrons *

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ABSTRACT

Cyclotrons as tools for therapy and for the production of radionuclides for use in nuclear medicine have been extensively reviewed in the literature. The current world status with respect to cyclotrons used primarily for research, development and application in nuclear medicine is reviewed here in the context of geographical distribution and type of use, presently available commercial types, machine characteristics and trends. Aspects of design requirements from a user perspective such as machine, beam and target characteristics are covered. Some special problems concerning many factors which can lead to effective production of the desired radionuclide or product are considered in light of machine characteristics. Consideration is also given to future directions for accelerators in nuclear medicine.

Introduction

The use of cyclotrons for medical purposes has been extensively discussed in the literature. The reader is directed to the extensive BNL

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