

1939

Apparatus for Producing Soft X-Rays

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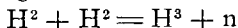
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A DEUTERIUM — DEUTERIUM SOURCE OF NEUTRONS

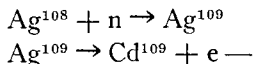
VICTOR YOUNG

A single section accelerator tube built for 300 to 400 k.v. is used to accelerate a beam of deuterons obtained from a conventional arc discharge source. The beam impinges on a target of $P_2O_5 + H_2^2O$ producing neutrons according to the reaction



The target assembly is immersed in a tank of water which because of the elastic H^1 and n collisions becomes a source of thermal neutrons.

Detection is accomplished by placing a piece of silver in the tank. The silver becomes artificially beta radioactive by the well known reactions



Since the half life of the beta activity is something over three minutes there is ample time to remove the silver from the tank and detect the beta particles with a thin walled Geiger-Müller counter.

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APPARATUS FOR PRODUCING SOFT X-RAYS

F. M. BAILEY

A 30-watt soft x-ray apparatus has been designed to provide a simple and economical source of soft x-rays for radiography in the wavelength region between 1.1 and 0.6 Angstroms. The x-ray tube was constructed of pyrex, and a thin spherical window incorporated for transmitting the radiation. The electrical equipment was built from standard laboratory parts, employing a neon sign transformer as a source of potential.

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