World Academy of Science, Engineering and Technology
International Journal of Nuclear and Quantum Engineering
Vol:10, No:10, 2016

Characterization of an Extrapolation Chamber for Dosimetry of Low Energy X-Ray Beams

Authors : Fernanda M. Bastos, Teógenes A. da Silva

Abstract : Extrapolation chambers were designed to be used as primary standard dosimeter for measuring absorbed dose in a medium in beta radiation and low energy x-rays. The International Organization for Standardization established series of reference x-radiation for calibrating and determining the energy dependence of dosimeters that are to be reproduced in metrology laboratories. Standardization of the low energy x-ray beams with tube potential lower than 30 kV may be affected by the instrument used for dosimetry. In this work, parameters of a 23392 model PTW extrapolation chamber were determined aiming its use in low energy x-ray beams as a reference instrument.

Keywords : extrapolation chamber, low energy x-rays, x-ray dosimetry, X-ray metrology
Conference Title : ICRRP 2016 : International Conference on Radioactivity and Radiation Protection
Conference Location : Paris, France
Conference Dates : October 24-25, 2016