

Tuesday, November 8, 2016 - 15:30 to 17:30

Poster Session: Dose Measurements and Predictions

A dosimetric survey of the DC1500/25/04 electron beam plant installed at IPEN-CNEN/SP

Samir Luiz Somessari¹, Florent Kuntz², Carlos Silveira¹, Carmen C Bueno¹, Celia M Napolitano¹, Wilson A.P. Calvo¹, Josemay A.C. Gonçalves¹.

¹Radiation Technology Center, Nuclear and Energy Research Institute, São Paulo, Brazil; ²Centre de Ressources Technologiques, Aériel - Centre de Ressources Technologiques, Illkirch, France

In this work we describe a dosimetric survey of the DC1500/25/04 electron beam accelerator installed in the Intense Sources of Radiation Laboratory at IPEN/CNEN-SP. As this accelerator has been used for innumerable applications in radiation processing, product surface and internal doses must be targeted and controlled via operational qualification such as beam energy, beam current, scan width and conveyor speed. The qualification was carried out in order to observe the current performances of the irradiation plant using Alanine (ESR) and CTA (UV Spectrophotometry) dosimeters. Energy (Electron penetration in material) calculations, scanning width/length, homogeneity and irradiation uniformity were evaluated according to ISO/ASTM 51649 and ISO11137-3, as well as process uncertainty establishment.