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# Relative Depth Dose Profile and Peak Scatter Factors Measurement for Co-60 Teletherapy Machine Using Chemical Dosimetry

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**Abstract :** The suitability of a Fricke dosimeter for the measurement of a relative depth dose profile and the peak scatter factors was studied. The measurements were carried out in the secondary standard dosimetry laboratory at CRNA Algiers using a collimated 60Co gamma source teletherapy machine. The measurements were performed for different field sizes at the phantom front face, at a fixed source-to-phantom distance of 80 cm. The dose measurements were performed by first placing the dosimeters free-in-air at the distance-source-detector (DSD) of 80.5 cm from the source. Additional measurements were made with the phantom in place. The water phantom type Med-Tec 40x40x40 cm for vertical beam was used in this work as scattering martial. The phantom was placed on the irradiation bench of the cobalt unit at the SSD of 80 cm from the beam focus and the centre of the field coincided with the geometric centre of the dosimeters placed at the depth in water of 5 mm Relative depth dose profile and Peak scatter factors measurements were carried out using our Fricke system. This was intercompared with similar measurements by ionization chamber under identical conditions. There is a good agreement between the relative percentage depth–dose profiles and the PSF values measured by both systems using a water phantom.

**Keywords :** Fricke dosimeter, depth–dose profiles, peak scatter factors, DSD
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