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THERMOLUMINESCENCE GLOW CURVE PROPERTIES OF TLD-500 DOSIMETER

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In this paper, TL characteristics and glow curves of $Al_2O_3:C$ dosimeter, known as TLD-500, were analyzed using different methods and software. The effect of heating rate (HR) and low dose (from 10 cGy up to 50 cGy) on TL glow curves of $Al_2O_3:C$ chips have been investigated after β -irradiation. TL kinetic parameters were also calculated by using computerized glow curve deconvolution (CGCD), peak shape (PS), various heating rate (VHR) and three points (TP) methods. Furthermore, using Mathematica software, all TL glow curves of TLD-500 were decomposed in order to compare with the results of other methods and simulated after exposed different beta doses.

Key words: Thermoluminescence, TLD-500, dosimeter, glow curve, Mathematica