

Standardization of ^{35}S , ^{89}S , ^{99}Tc , ^{147}Pm and ^{241}Pu using TDCR method at CMI.

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The paper deals with the extension of measuring capabilities of the TDCR device at CMI. The software TRIDA-B based on the TDCRB-1 software was modified to enable a more precise calculation of the beta spectrum. The effect of entered kB value and shape factor formula on the calculated activity value for selected nuclides (^{35}S , ^{89}Sr , ^{99}Tc , ^{147}Pm , ^{241}Pu) was tested. Changes in detection efficiency in the TDCR device were achieved through both defocusing as well as changing the position of the sample in relation to the photomultipliers. During calculation, attention was paid to the shape factor for nuclides with first-forbidden transitions, especially ^{241}Pu . The final activity value was compared to values obtained by a different method; CIEMAT-NIST and measurement in a calibrated commercial LSC apparatus, respectively. The difference between activity values obtained using TDCR and other methods didn't exceed 0.5%.