

INFLUENCE OF METAL ENVIRONMENT ON ^{212}Po α -DECAY HALF-LIFE AT ROOM TEMPERATURE

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An attempt has been made to investigate a possible change in the decay rate of ^{212}Po implanted into different metal matrix from Be to Pb (20 elements) at room temperature. The comparison experiments have been made also for activity implanted into plastic scintillator and fluoroplast. The measurements were performed with single crystal scintillation time spectrometer [1]. The sources of ^{212}Po nuclei were prepared by electrostatic collection of ionized ^{220}Rn decay products in emanatory with ~ 10 grams powder of ^{232}Th oxide. Fig. 1 presents the results of our measurements of half life ^{212}Po in different metal environment in comparison with Be matrix. Range of statistical errors don't exceed a limit from $\pm 0.06\% \div 0.17\%$. Results of the measurements are presented on Fig. 1. Correlation coefficient $r = 0.037$ proves that no evidence for any dependence $T_{1/2}$ from metal environment.

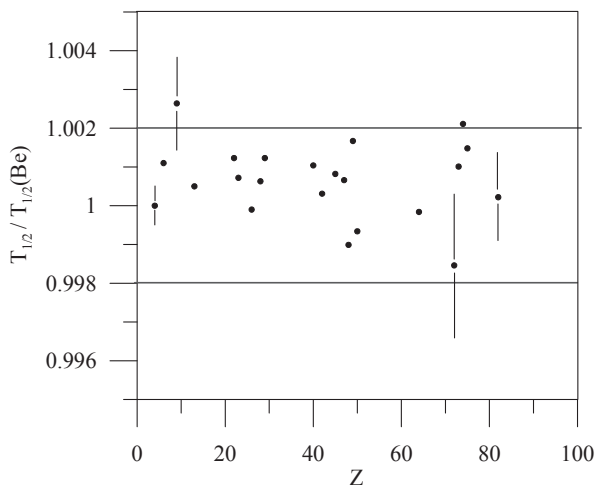


Fig.1. Half life of ^{212}Po in different metal environment in comparison with Be matrix.

1. V.A.Morozov *et al.* // Nucl. Inst. Meth. A. 2002. V.484. No.1-3. P.225.