

Abstract

Calibration was performed for fission track (FT) dating system using a glass dosimeter IRMM-540. Based on uranium contents and ratios of $^{235}\text{U}/^{238}\text{U}$, the zeta (ζ) value of IRMM-540 is lower than the previously used SRM612 by a factor of 0.89. This relationship was also confirmed by values obtained from experiments using age standards. We determined the ζ -value of IRMM-540 for zircon using reactor units JRR-3 and JRR-4 at the Japan Atomic Energy Research Institute (JAERI). There was a significant difference between the ζ -values for a system with direct observation by a microscope and a system with observation by a monitor screen. This can be attributed to the difference in the thresholds of the identification criteria for a minimum FT on a mica detector for the two observation systems.