

IMPLANTATION OF IONS ^8He , Kr AND Xe IN NUCLEAR TRACK EMULSION

Mamatkulov K.Z., Artemenkov D.A., Kattabekov R.R., Zarubin P.I.
Joint Institute for Nuclear Research, Dubna, Russia
E-mail: kahramon@lhe.jinr.ru

The ACCULINNA fragment separator in the G.N.Flerov Laboratory of Nuclear Reactions was used to irradiate a nuclear track emulsion by a beam of radioactive ^8He nuclei of energy of 60 MeV and enrichment of about 80%. Measurements of 278 decays of ^8He nuclei stopped in the emulsion allow one to evaluate possibilities of α -spectrometry and to observe a thermal drift of ^8He .

At the accelerator complex IC-100 a nuclear track emulsion is exposed to beams of ions $^{86}\text{Kr}^{+17}$ and $^{132}\text{Xe}^{+26}$ with energy of about 1.2 A MeV. Measured ranges and scattering angles of Kr and Xe ions are compared with the values calculated in the model SRIM.

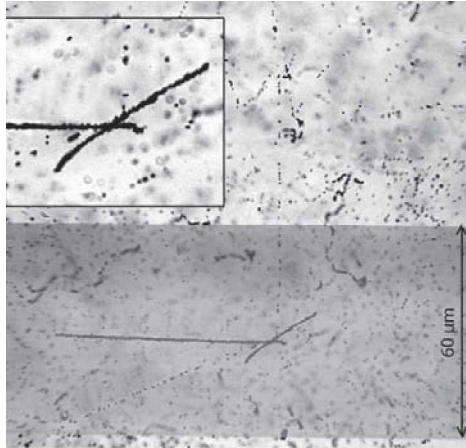


Fig. 1. Mosaic macrophotography of a hammer-like decay of ^8He nucleus (horizontal track) stopped in nuclear track emulsion. Pair of electrons (point-like tracks) and pair of α -particles (short opposite tracks). On insertion (top): enlarged decay vertex. To illustrate special resolution the image of the decay is superimposed to macrophotography of a human hair of thickness of 60 μm .

1. D.A.Artemenkov *et al.* // Phys. Part. Nucl. Lett. 2013. V.10. P.415; arXiv:1309.4808.