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

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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 $^8$He nuclei of energy of 60 MeV and enrichment of about 80%. Measurements of 278 decays of $^8$He nuclei stopped in the emulsion allow one to evaluate possibilities of α-spectrometry and to observe a thermal drift of $^8$He.

At the accelerator complex IC-100 a nuclear track emulsion is exposed to beams of ions $^{86}$Kr$^{+17}$ and $^{132}$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.

![Image of a hammer-like decay of $^8$He 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.](image)

Fig. 1. Mosaic macrophotography of a hammer-like decay of $^8$He 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.