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Multi-prong tracks were recorded on a polyethylene terephthalate (PET) detector

Abstract content

Multi-prong tracks have been recorded in the polyethylene terepthalate (C10H8O4) solid-state nuclear track detector by exposing it to a 252Cf fission source. After etching with 6.25N NaOH solution at temperature 55±0.1 C, for four hours, two-prong to six-prong tracks along with single tracks were observed under the objective of an optical microscope. Cross section of fragmentation decreases with multiplicity of the event. Charges of the fragments lie in between 8<Z<40. The origin of multi-prong tracks could be attributed to the multi-fragmentation of nuclei. Multi-fragmentation phenomena play an important role in nuclear liquid gas phase transition. Extension of these studies to highly neutron or proton asymmetric nucleus may extract information relevant to astrophysical interest. This shows that multi-fragmentation phenomena in cosmic rays can be studied with this detector.

If this papers is presented for a collaboration, please specify the collaboration

Summary

Reference

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