

Latest Development of Nuclear Emulsion Technology

Wednesday 27 September 2017 09:00 (1 hour)

Nuclear emulsion is high sensitive photographic film used for detection of three-dimensional trajectory of charged particles. These trajectories are recorded as tracks consist of chain of silver particles. The size of silver particles is less than 1 micrometer, so that nuclear emulsion has sub-micron three-dimensional spatial resolution, which gives us an angular resolution of a few mrad in three-dimension.

In our laboratory, a high-speed three-dimensional read-out system built with optical microscope is still developed. Nowadays the read-out system named Hyper Track Selector (HTS) with scanning speed of approximately 1 square meter per day is being operated. And also, we have the nuclear emulsion production facility in our laboratory. In the facility, we can develop emulsion gel for the purpose by using emulsion gel production machine and we can produce emulsion films in the darkroom for mass production. In this talk, latest development of nuclear emulsion technology will be presented.

Relevant topics

hardware and future projects

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