

Study of Desensitized Nuclear Emulsion Films with HIMAC heavy ion beams

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By adding suitable amount of Rh compound ($\text{Na}_3\text{RhCl}_6 \cdot 5\text{H}_2\text{O}$) during the production of nuclear emulsion gel, it enabled to reduce the sensitivity of the nuclear emulsion films and realized the selection of heavy nuclei by using image processing system suitable for minimum ionized particles. We have carried out the beam exposure of desensitized nuclear emulsion films in October, 2019 at Heavy Ion Medical Accelerator in Chiba(HIMAC). When charged particles passed through the nuclear emulsion films, the track were measured as a series of silver grains of which size is typically less than one micrometer, and we traditionally determine their charge amount by measuring ionization loss signals such as grain density, delta-ray count. In this study, we measured the energy losses of heavy ion beams in desensitized emulsion films exposed horizontally to emulsion layer, and we have estimated the desensitization effect for heavy ion detections.

Keywords

Desensitized nuclear emulsion films, Cosmic ray nuclei

Collaboration

other (fill field below)

other Collaboration

Subcategory

Experimental Methods & Instrumentation

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