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Recent Research Developments at RAON: Focus on KoBRA and NDPS

The RAON facility includes multiple experimental systems. These systems include the Korea Broad Acceptance Recoil Spectrometer and Apparatus (KoBRA), focused on rare ion beam (RI) research, and the Nuclear Data Production System (NDPS), a neutron production system.
KoBRA operates with stable and rare isotope beams at low energies of 1–40 MeV/u, facilitating experiments in nuclear physics. Following the first commissioning of the KoBRA facility in 2023, several experiments were completed in 2024. These experiments utilized a 40Ar primary beam with a 12C target, producing and identifying rare isotope beams. The production cross sections and momentum distributions of the RI beams were measured. Additional research included 40Ar(p,p) scattering to evaluate models that describe nuclear reactions at low energies. The capacity for single-event effect (SEE) testing was also demonstrated by irradiating space-grade semiconductors with heavy ion beams at various Linear Energy Transfer (LET) values. Furthermore, the first commissioning of the ISOL beam was completed, and the 25Na ISOL beam was accelerated through SCL3 and identified at KoBRA.
NDPS, which recently completed commissioning, established neutron production capabilities at RAON. KoBRA and NDPS contribute to the research conducted at RAON, supporting fundamental and applied studies in nuclear and neutron physics.

Notes

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