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Development and characterization of new position-sensitive Si strip detectors for direct reactions at CENS

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Direct reaction experiments in inverse kinematics are one of the best suited tools to probe a broad range of nuclear properties, providing great insight into the nuclear structure of exotic nuclei and allowing the measurement of reactions relevant to many astrophysical scenarios. In order to fully exploit RAON (RIB facility currently under construction in Korea), the CENS group has devoted a large amount of effort to develop nuclear detection instruments, such as ATOM-X Active Target TPC and STARK Silicon Telescope Array, specially designed for direct reaction experiments. An integral part of these detector devices are position-sensitive double sided silicon strip detectors. These detectors are segmented in 4 strips on its ohmic side and 8 resistive charge-splitting strips on its junction side enabling an excellent position measurement of charged particles with a much smaller number of signals than traditional DSSSD with similar position resolution.

Detailed specifications of these detector devices, initial characterization methods and preliminary reports of their performance will be presented. Outlook for future commissioning of these detectors will also be discussed.

Topic

Experiment

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