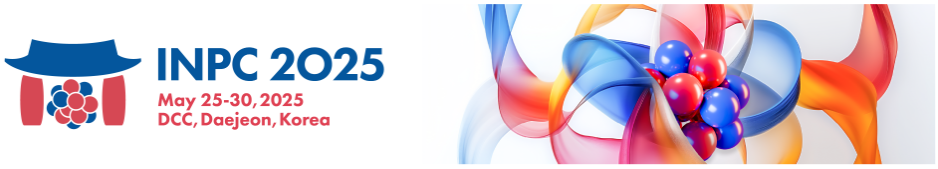

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Development status of VOICE(Vertically Oriented-wire Ionization Chamber with sEgmentation)

α-induced reactions play critical roles in nucleosynthesis processes such as the s-process, r-process and αp process occurring in explosive stellar environments. However, significant uncertainties remain due to the difficulty of direct reaction measurements, particularly for the low cross sections of α-induced reactions at energies associated with stellar temperatures. Recently, the MUSIC (Multi-Sampling Ionization Chamber) detector utilizing ^{4}He gas as an active target has been utilized as an effective tool for measuring α-induced reaction cross section [1,2]. To address these challenges, the VOICE (Vertically Oriented-wire Ionization Chamber with sEgmentation) is being developed at CENS as a new multi-sampling ionization chamber [1,2] utilizing 4He gas as an active target. By utilizing RI beams and adopting the thick target method in inverse kinematics, VOICE enables the direct measurement of cross sections over a wide energy range. To enhance beam intensity durability, vertical electrode designs have been adopted. Additionally, Frisch Grids have been employed to improve energy resolution. The development progress of VOICE and its potential contributions to nuclear reaction studies will be presented

[1] M.L. Aviala et al., Nucl. Instrum. Methods Phys. Res., Sect. A 799, 197-202 (2015)
[2] D. Blankstein, et al, Nucl. Instrum. Methods Phys. Res., Sect. A 1047, 167777 (2023).

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