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Shulin Shi 1, Hongtao Shen 1, 2*, Junsen Tang 1, Li Wang 1, Guofeng Zhang 1, Dingxing Chen 1, Linjie Qi 1, Yun He 1, 2, Ning Wang 1, 2, Qingzhang Zhao 3, Ming He 3, Shan Jiang 3

1. College of Physics and Technology, Guangxi Normal University, Guilin Guangxi 541004, China

2. Guangxi Key Laboratory of Nuclear Physics and Nuclear Technology, Guilin, Guangxi, 541004, China

3. China Institute of Atomic Energy, Beijing 102413, China

*Correspondence to: shenht@gxnu.edu.cn

Abstract:

A simple single anode gas ionization chamber (GIC) design for low-energy ions was developed for a compact accelerator mass spectrometer at Guangxi Normal University (GXNU-AMS), China. This detector comprises a 50-nm silicon nitride window, an anode, a Frisch grid, and a cathode. To determine the optimal measurement conditions and to characterize the detector performance at low energy, test experiments were performed with a $^{239}\text{Pu}/^{241}\text{Am}$ α source and ^3H and ^{14}C ions at the energies of ~ 180 keV. The results prove that this GIC can be used for measuring ions at low energy and meets the requirements for low-energy ion measurements at GXNU-AMS.

Keywords: GIC; low energy; AMS

Student Submission

Yes

Primary authors: Prof. SHEN, Hong tao (广西师范大学); Mr SHI, Shu lin

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