

Abstract Submitted
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Helium Gas Regulation System for the Light-Ion Guide Gas Cell¹

BRYAN FRAZIER, Cyclotron Institute, Texas A&M University (REU Student from Florida A&M University), HENRY CLARK, LIXIN CHEN, Cyclotron Institute, Texas A&M University — This is a proof-of-concept project to show that it is possible to construct a cost-effective helium gas regulation system for TAMU Cyclotron Institute's light-ion guide gas cell, using store ordered components. By purchasing the individual necessary parts, we designed and constructed a system that was less expensive than purchasing a pre-constructed system from a manufacturer, and could easily be scaled larger or smaller to accommodate any number of gas bottles. Utilizing LabVIEW software, I was able to write a program that allows the system to be controlled remotely, and an automation program that causes the system to change immediately between bottles, whenever one is almost empty, allowing the system to supply a constant flow of helium gas for several days. Although both the construction and the programming of the system can be seen as rough and unrefined, due to the time-restraints placed on me, the project adequately proves that the concept is valid and entirely possible, as the system is fully functional and able to fulfill its intended purpose.

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