

Abstract Submitted  
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**Characterization of an ion trap to be used to determine the decay rate of ionized beryllium-7** BRYAN G. PETERSON, DANIEL ERICKSON, GRANT W. HART, Brigham Young University — Beryllium-7 is an isotope with a 53-day half-life that decays exclusively by electron capture. The decay rate can be modified by changing the electron configuration, and the availability of electrons for capture. All previous measurements of the half-life were made with the Be-7 atoms embedded in a matrix of some kind that resulted in significant and not well characterized modifications to the electron configuration. We are building an ion trap to study the rate of decay of singly-ionized Be-7 to determine the rate when the electron configuration is well known. We are using a boron carbide plasma to characterize the behavior of the trap. The presence of boron-10, boron-11, and carbon-12 will also allow us to determine the resolution and sensitivity of the Fourier Transform Ion Cyclotron Resonance Mass Spectrometry technique that will be used to monitor the conversion of the Be-7 to Li-7 and to determine the half-life. The results of this characterization will be presented.

Bryan G. Peterson  
Brigham Young University

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