ParticiPANts

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Gamma Spectroscopy: *The day where nothing went wrong*

- Using a NaI gamma spectrometer we identified a "mystery isotope"
- We calibrated the spectroscope channels using the known samples of ^{137}Cs and ^{60}Co
- Using the measured energy value of 820.8 keV and known data values from the NuDat database, we unmasked the mystery isotope to be ^{54}Mn

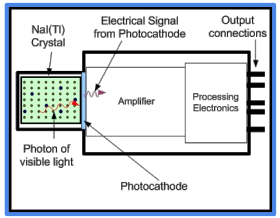
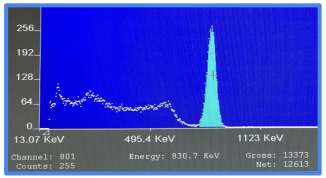


Diagram of NaI gamma spectrometer

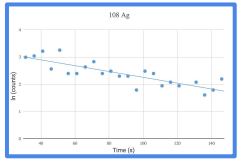


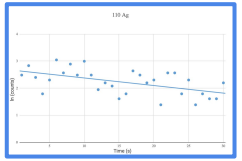
Graph of mystery isotope (^{54}Mn)

- The graph compares channels or energy to the number of counts
- The graph's peak represents the energy released as gamma rays during decay
- The number of peaks equals to the number of ways the isotope decays

Half Life: *The day where the computer hated us*

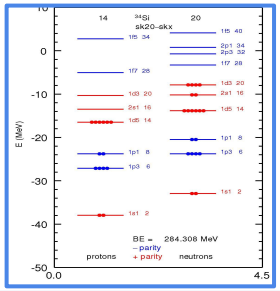
- Using a Geiger- Muller Tube, we were able to determine the half life of Ag-108 and Ag-110
- A silver coin was bombarded with neutrons in an AMBE source to create the radioactive silver isotopes
- After calibrating the equipment using GM Tube software, we tracked the decay of both isotopes with GM HalfLife
- We found the half-life of ^{108}Ag to be 64.78 sec and the half-life of ^{110}Ag to be 24.76 sec
- Our measurement for ^{108}Ag differed significantly from the expected value, and our measurement for ^{110}Ag was very close to the expected value.





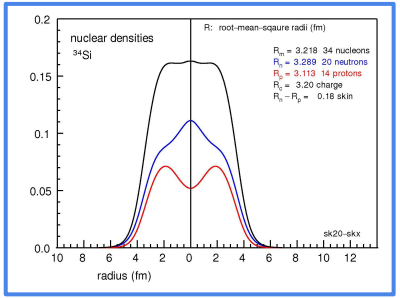
Group Photo!

The Geiger-Muller Tube setup



Nuclear Theory: *The day with homework*

- Using a program created by Professor Alex Brown, we investigated EDF Theory by computing predictions using the theory and comparing the values to known results
- We learned how to analyze these graphs to determine whether various isotopes had magic numbers of protons or neutrons



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