

Name \_\_\_\_\_  
PIXE Homework #2 - Physics 100  
Union College Fall 2014

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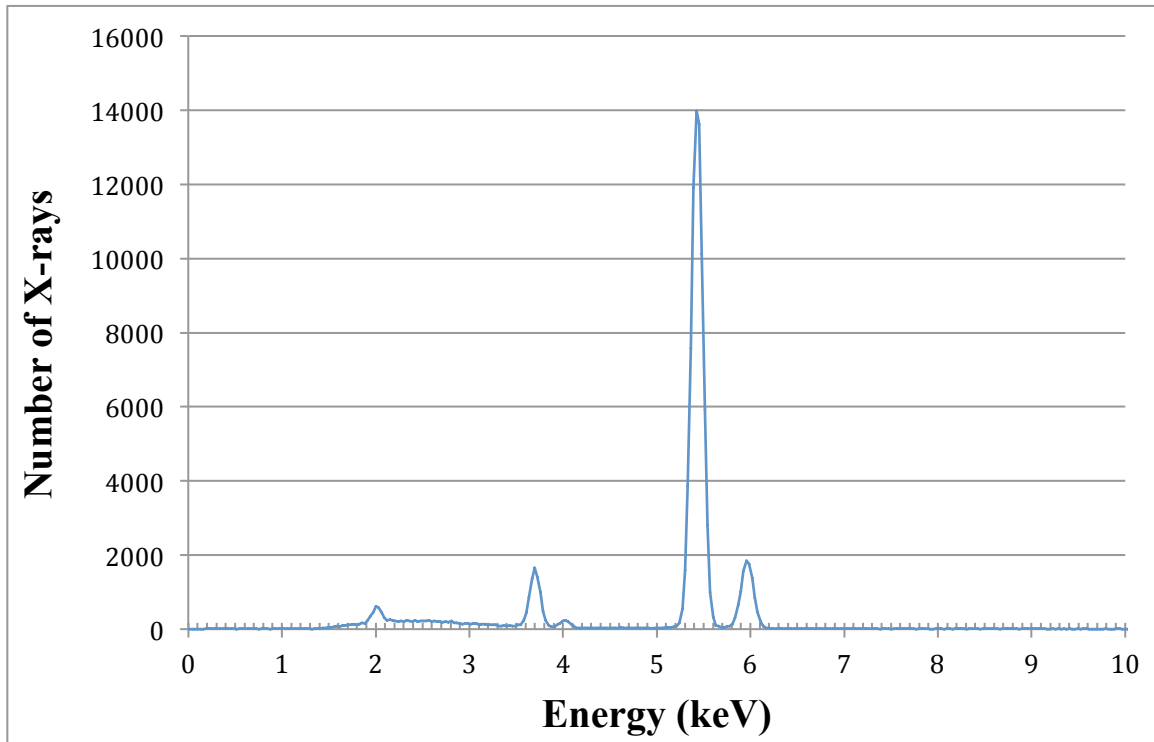
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*For the homework assignments, you may consult for guidance, if needed; your instructors lecture notes, the physics department help center, the writing center, your instructor, other physics and astronomy department instructors, other textbooks, or the Internet. Any work that is not explicitly your own must be cited. You may not copy solutions from anywhere. If you are unclear on anything, you are expected to ask your instructor for clarification regarding, but not limited to, collaboration, citations, and plagiarism. Ignorance is not an excuse for breaching academic integrity.*

1. What are the  $K_\alpha$  and  $K_\beta$  energies for the following elements: Ni( $Z=28$ ), Fe( $Z=26$ ), Au( $Z=79$ ), and Pb( $Z=82$ )? (Please use the equations given in the lecture and not the table of x-ray energies to do the calculation.)



4. Given the *PIXE* spectrum of a single element standard shown below, what are the elements in the spectrum?



5. Given the *PIXE* spectrum of a single element standard shown below, what are the elements in the spectrum?

