

## Rutherford Scattering

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**You must watch the *Radiation Safety* video, and get a *Radiation Ring* before you use the apparatus in this experiment.**

**Your report will not be accepted until you have turned in your ring.**

Ring # \_\_\_\_\_ Issued \_\_\_\_\_ Returned \_\_\_\_\_  
(Date and Signed) (Date and Signed)

Student's Name \_\_\_\_\_

Partner's Name \_\_\_\_\_

*View the video about this experiment online & get the reprints from the Physics library or online.*

### Pre-lab Discussion Questions and Staff Sign Off

It is your responsibility to discuss this lab with an instructor on the first day of your scheduled lab period. This signed sheet must be included as the first page of your report. Without it you will lose 1/3 of a grade for the report (e.g. A-  $\Rightarrow$  B+). You should be prepared to discuss at least the following before you come to lab:

1. Describe Rutherford scattering.
2. What is the Rutherford scattering formula? Define or explain each of the terms in the formula. What is a scattering cross section? How is the cross section related to what you actually measure in the experiment?
3. Why is it difficult to obtain data at large scattering angles?

Staff Signature \_\_\_\_\_

Completed on the *first* day of lab? (circle) Yes / No

### Mid-lab Questions and Staff Sign Off

1. By day five you should have enough data to demonstrate the angular dependence of Rutherford scattering. Show it to an instructor and ask for a signature.

Staff Signature \_\_\_\_\_

Completed on the *fifth* day of lab? (circle) Yes / No

**INCLUDE THIS SHEET AS THE FIRST PAGE OF YOUR REPORT**

<b><i>Physics 111 Advanced Lab      Student Evaluation of Experiment</i></b>
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Now that you have completed this experiment, we would appreciate your comments. Please take a few moments to answer the questions below, and feel free to add any other comments. Since you have just finished the experiment it is *your* critique that will be the most helpful. Your thoughts and suggestions will help to change the lab and improve the experiments.

Please be as specific as possible, using both sides of the paper as needed, and turn this in with your report. Thank you!

Experiment name: \_\_\_\_\_ Date: \_\_\_\_\_

How was the write-up for this experiment? How could it be improved?

How easily did you get started with the experiment? What sources of information were most/least helpful in getting started? Were the reprints appropriate? Did the Pre-lab discussion help? Did you need to go outside the course materials for assistance? What additional materials could you have used?

*What did you like and/or dislike about the experiment?*

*Would you recommend this lab to fellow student? Why or why not?*

*What advice would you give to a friend just starting this experiment?*

If the course materials were available over the Internet (WWW, FTP, etc.), would you (a) have access to them and (b) would you prefer to get them this way?

Please circle the abbreviations of the other labs you have done.	Overall quality of this experiment?
ATM   BMC   BRA   COM   CO <sub>2</sub> GMA   HAL   HOL	1                      2                      3                      4                      5
JOS   LIF   LLS   MNO   MOT   MUO   MNO	Poor                      Average                      Good
NLD   NMR   OPT   OTZ   RUT   SHE   XRA	
Thank you from the Staff	