

Physics 112 Laboratory Report

Electrostatic Phenomena

Name _____

Date _____

Lab Partner _____

Prepare your report on separate pages, organized as follows. Include sketches as needed to show geometry and charge distributions.

Uncharged electroscope

Describe and explain the response of the electroscope to each of the charged plastic rods (white, gray, and clear flat)

Electroscope charged by contact

Describe and explain the response of the charged electroscope to each of the charged plastic rods.

Electroscope charged by induction

Describe and explain the response of the charged electroscope to each of the charged plastic rods. Is the charge on the electroscope the same or different than on the rod used to charge it? Explain.

Tests with the coulombmeter

Find the sign of charge on each rod. Are the relative signs consistent with electroscope results? Can you see the charge increase with rubbing?

Charge a metallic sphere by induction. What signs are the charges on the sphere and the rod? Is this consistent with previous results?

Charge transfer

Charge one or both metallic spheres. Measure the charge on each before and after bringing them into contact. Is the total charge constant?

Charge two rods by rubbing them together and measuring the charge on each before and after rubbing. Interpret your results as transfer of charge or creation of net charge.

Repeat using paper and any of the rods. Explain your results.

Charge distribution on conductors

Investigate the charge distribution on two spheres in contact. Explain your results.

Investigate the charge distribution on the isolated can. Explain your results.