General physics lab 202

Student's name:…….…… **Student's number:……..…**

Experiment 1 : Faraday Ice Pail and Charge Production

Charging by Induction vs. Charging by Contact

- Insert the charged object into the ice pail, but **without** letting it **touch** the pail.

Charge producer	Electrometer reading
Blue	
White	

- Remove the object

Charge producer	Electrometer reading
Blue	
White	

- Push the **Zero** button to remove any residual charge. Insert the object again, but let it **touch** the ice pail.

Charge producer	Electrometer reading
Blue	
White	

- Remove the object and note the electrometer reading

Charge producer	Electrometer reading
Blue	
White	

Conservation of Charge

- Use the Faraday Ice Pail to measure the **magnitude and polarity** of each of the charged wands by inserting them one at a time into the ice pail and noting the reading on the electrometer.

Charge producer	Electrometer reading
Blue	
White	

- **Insert both charge** producers into the ice pail and **rub them together** inside the pail. Note the electrometer reading. **Do not** let the charge producers **touch** the pail.

Electrometer reading	

- What is the relation between the magnitude of the charges?
- What is the relation between the polarity of the charges?
- Was charge conserved in the demonstration?

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Experiment 1 : Charge Distribution

- Place the two aluminum spheres at least **50 cm.**

	Right	Left	Up	Down	Front	Back
Electrometer reading						

……. charge distribution.

- Place the two aluminum spheres **1cm.** Turn the voltage source **ON**

	Right	Left	Up	Down	Front	Back
Electrometer reading						

……. charge distribution.

- Momentarily **ground the sampling sphere** again, by touching one hand to the grounded ice pail shield and the other hand to the sphere.

	Right	Left	Up	Down	Front	Back
Electrometer reading						

……. charge distribution.

- Remove the charged sphere until it is at least **50 cm** away from the sampling sphere.

	Right	Left	Up	Down	Front	Back
Electrometer reading						

……. charge distribution.