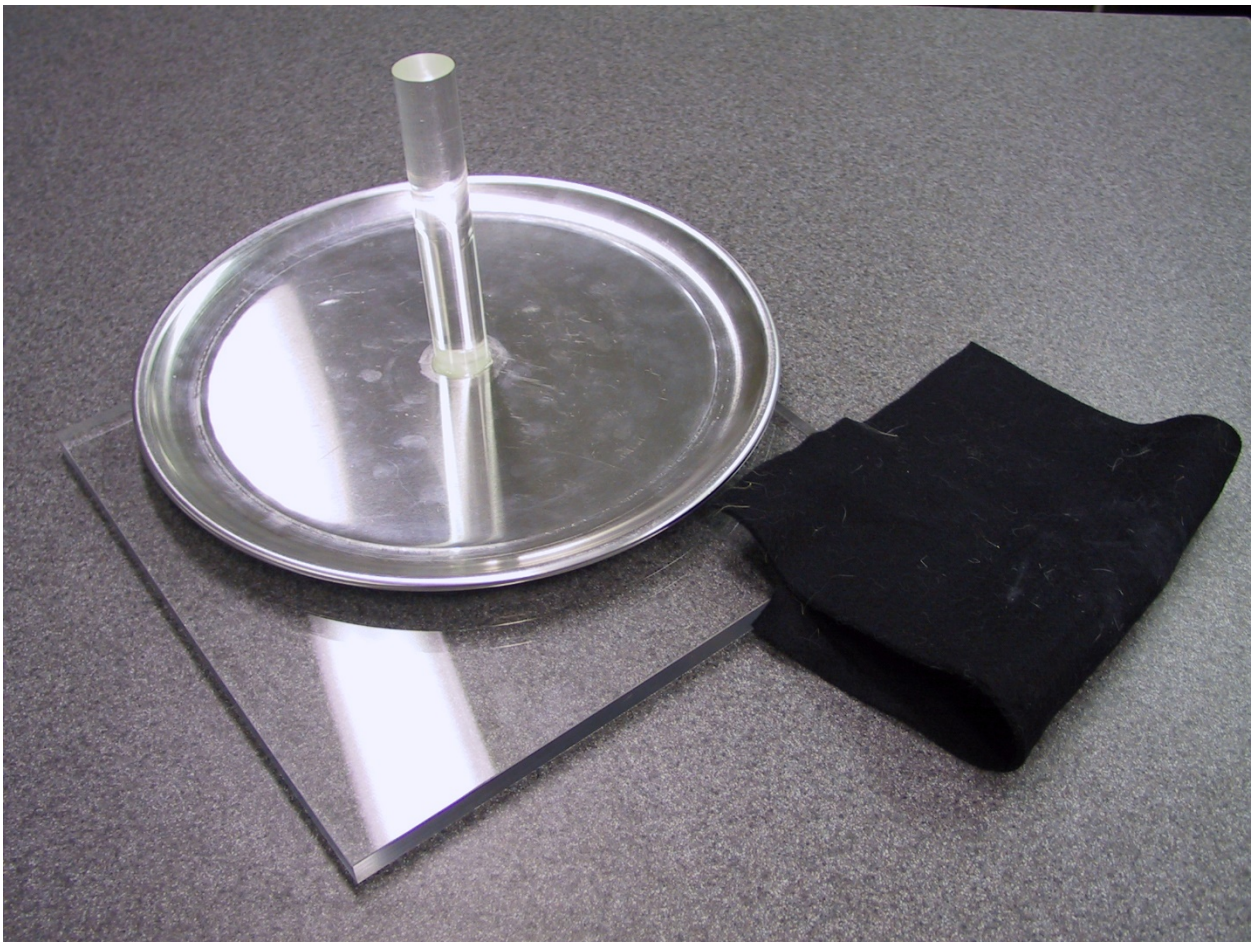
Electrophorus



Purpose: Demonstrates how objects can be charged by induction. This is also a useful device for easily producing charge for other electrostatic demos.

The Electrophorus (machine) is the simplest example of charging by induction. (The Wimshurst machine must be the most complicated.)

To produce charge, first rub the plastic base with the black felt cloth. This charges the insulated base negatively. Next, place the pizza pan atop the base. A charge separation is induced in the

pizza pan due to the charged base. Touch the top of the pan; You provide a ground path (and get a shock) which neutralizes the charges on the top surface of the pan. Once lifted, the pizza pan has a surprisingly large net charge (+ *i.e.* opposite that of the base).

You can use the pan to charge other objects or perform various electrostatic tricks, *e.g.* attracting a suspended pop can or meter stick by polarization. You can use this in conjunction with the basic electrostatics demo.

Note: Here is a link to a cute, interactive web animation of the procedure that you might want to show your class:

http://www.ece.rochester.edu/~jones/demos/elphorus/electrophorus_iexplorer.htm

Extra Equipment: None

Location: Shelf E2