

## Charging an Electroscope by Induction and by Contact



**Purpose:** To demonstrate that induced polarization can be used to charge an electroscope with the opposite sign charge of a rod.

**Location:** room 146, shelf L2

Use the Teflon<sup>R</sup> rod and fur with the large (Braun) electroscope to show that the (negatively) charged rod can be used to induce a net positive charge on the electroscope. First, hold the charged rod near the top of the electroscope (but not touching it) to show that charge can be “induced” on it without contact. While holding the rod near the top, use your other hand to touch the top of the scope and watch it appear to “discharge” (first photo). Next, remove your hand from the scope, and slowly move the rod away from the electroscope, resulting (perhaps surprisingly) in a net (positive) charge being left on the electroscope.

You can demonstrate that the induced charge is opposite to the charge on the rod by touching the top of the electroscope with the charged rod and watching the rod begin to lose charge before recharging and repelling.

(The smaller electroscope in the Erlenmeyer flask (shown on left) works better when it's humid, but is not easily seen from a distance.)