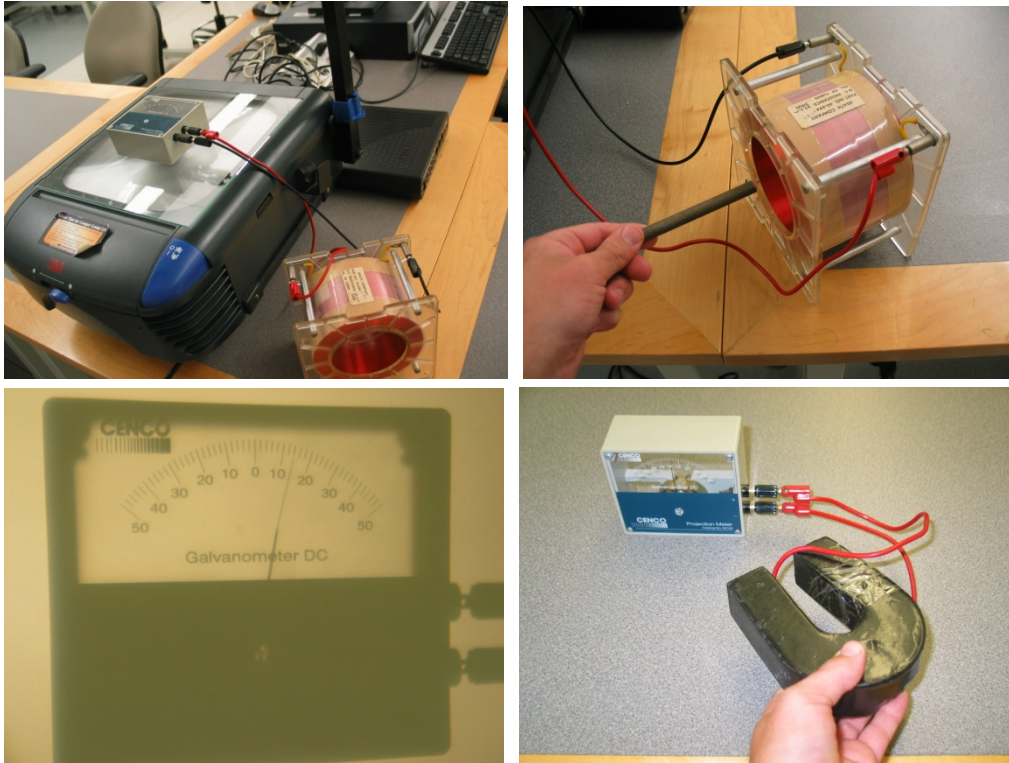


Induction Coil and Magnet



Purpose: To demonstrate that a changing magnetic field can induce current in a wire coil, or just a single loop circuit.

Location: Room 146; shelf N1, black horseshoe magnet on M5

Place the galvanometer on the projector and connect the 3400 turn coil to the galvanometer using banana plugs (top left picture). Turn the projector on. Let the class see that the motion of your hand near the coil does not cause the galvanometer to deflect. Move the small bar magnet into the coil (top right picture), showing that the galvanometer needle deflects, but only during motion (bottom left picture). Show that the needle deflects in the opposite direction when the magnet is pulled away from the coil. Hold the magnet still within the coil to show that it is not the presence of the magnet, but the motion of the magnet relative to the coil that induces the current. Passing a single wire that is connected to the galvanometer in and out of a horseshoe magnet will show the same effect (bottom right picture).