

Lab Combine – Practical Electromagnet

Overview

You will be working on a combination lab this week. The objective is to build a working speaker. A speaker is a practical use for an electromagnet. In fact, if you look around your home you will find lots of electromagnets.

Task

Construct a speaker.

USEFUL SUPPLIES:

- Cup (16 oz) and duct tape
- Enamelled wire (26-30 AWG)
- Permanent magnet (face pole)
- Audio plug (1/8")



USEFUL EQUIPMENT:

- Function generator and oscilloscope
- ULI Microphone

Directions for speaker:

- Wind a coil of wire and tape onto the bottom of the cup.
- Remove enamel from ends of coil and connect to audio source.
- Mount (or hold) permanent magnet near coil.
- Voila! You have a speaker.

Experimental Considerations

- Quantify your speaker by using the function generator and oscilloscope and/or microphone.
- How can you increase the sound coming out of your speaker? (in addition to cranking up the volume – driving voltage)

