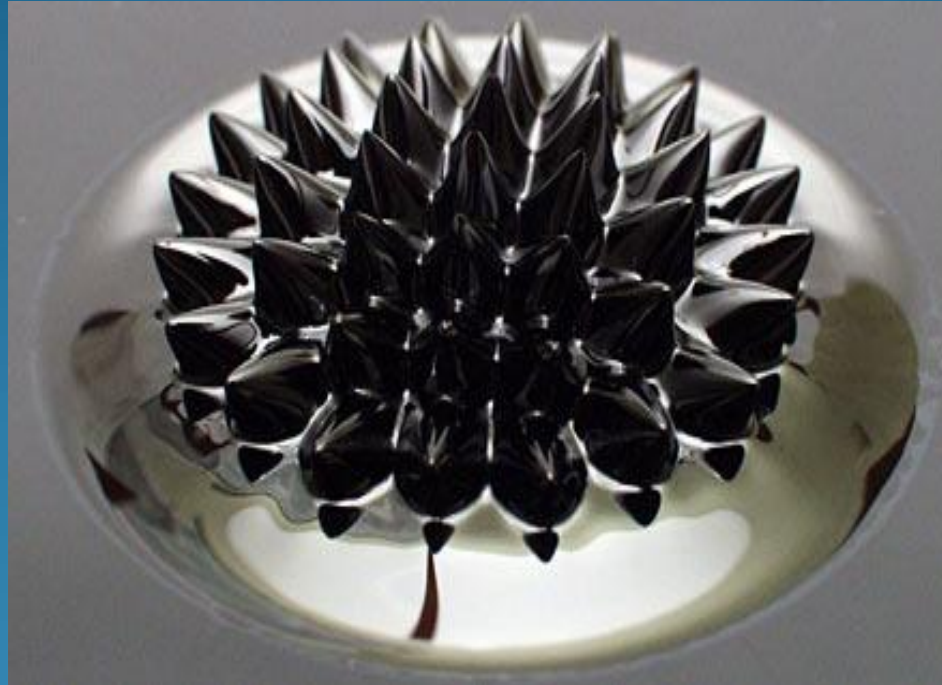


Fun With Ferrofluid

Design Review



Adam Goss

11-30-11

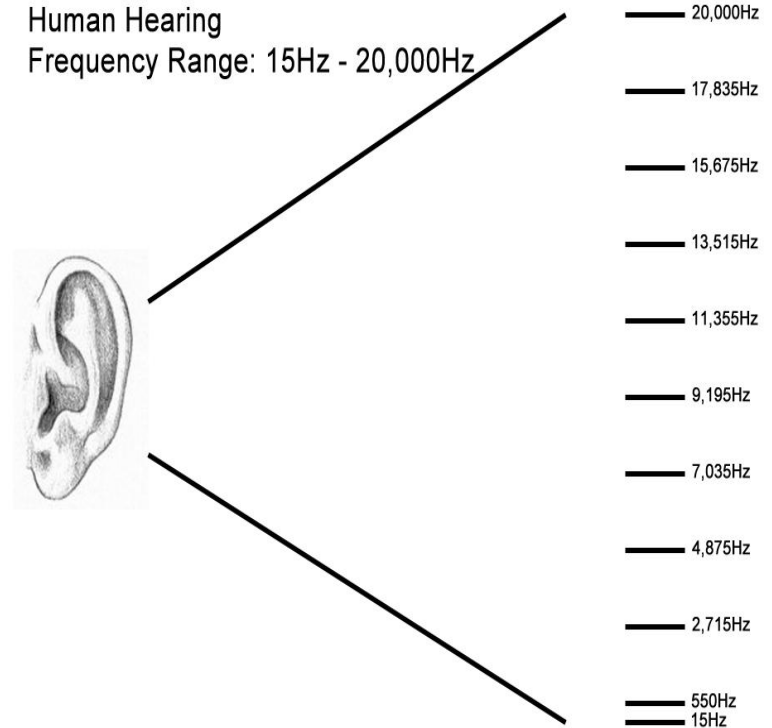
Final Project 2011

- The purpose of this project was to create something that people without a knowledge of physics can enjoy.
- My goal was to build a circuit that is capable of manipulating a magnetic field through the use of an iPod, thus controlling the fluid with music. While the ferrofluid is for show it serves visually showcase the active audio filters.

Specifications

Project Specs

- Five Signal Amplifiers
- 1/8 inch audio jack input
- Four Electro Magnetics
- DC power source
- One Speaker
- Active Audio Filters
 - 20Hz - 4kHz
 - 4kHz - 10kHz
 - 10kHz - 15kHz
 - 15kHz - 20kHz



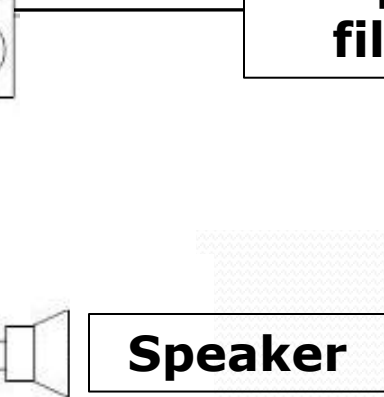
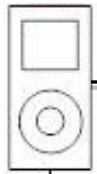
iPod

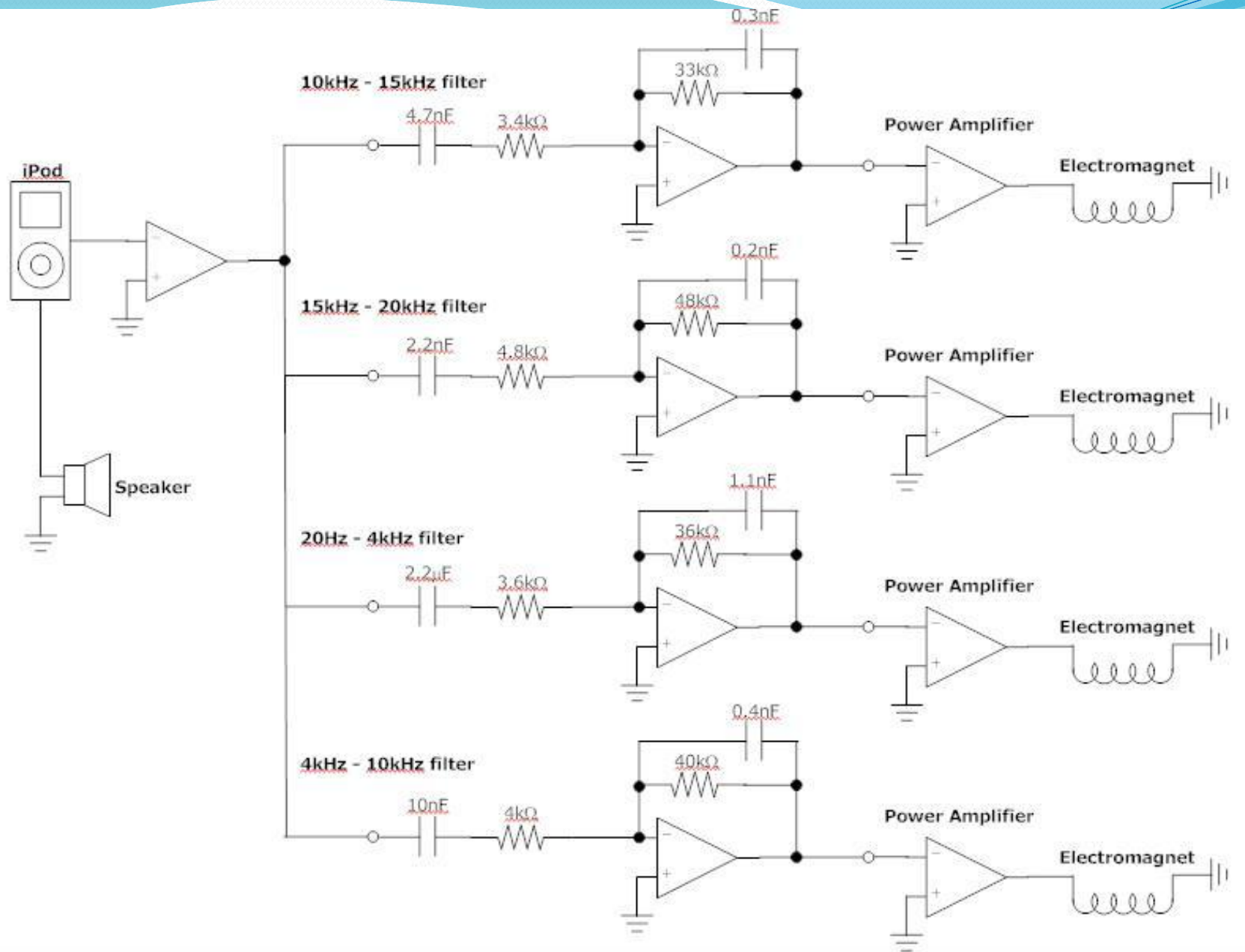
**Frequency
filters**

Electromagnet

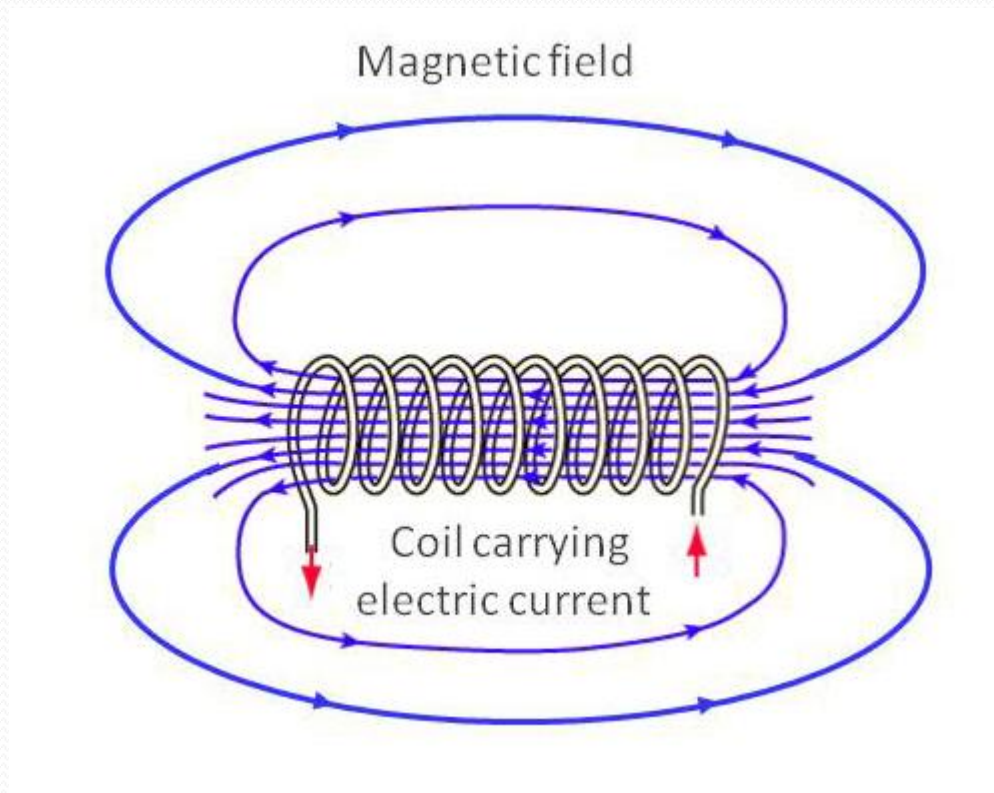
Ferrofluid

Speaker

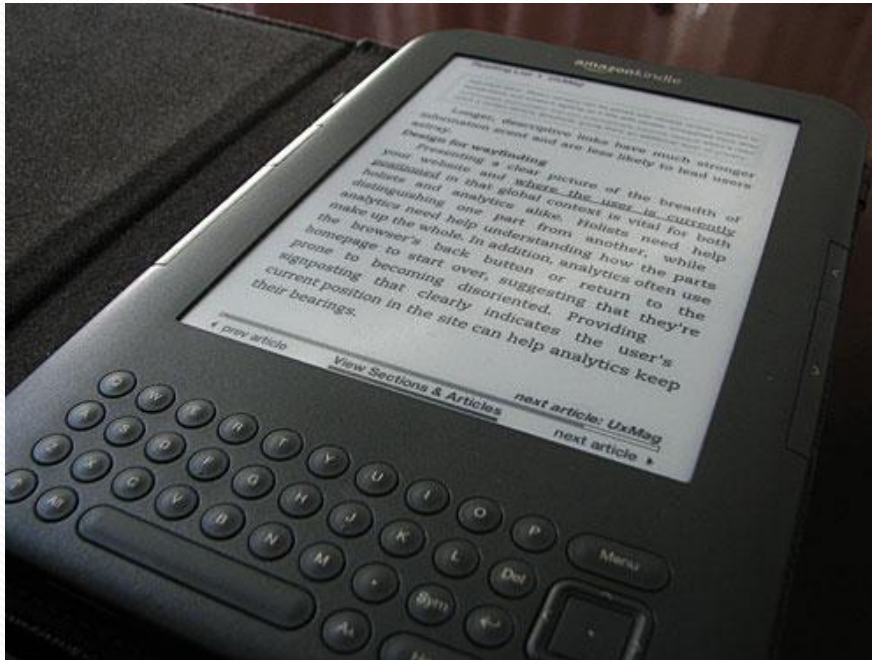




How an electromagnet works.



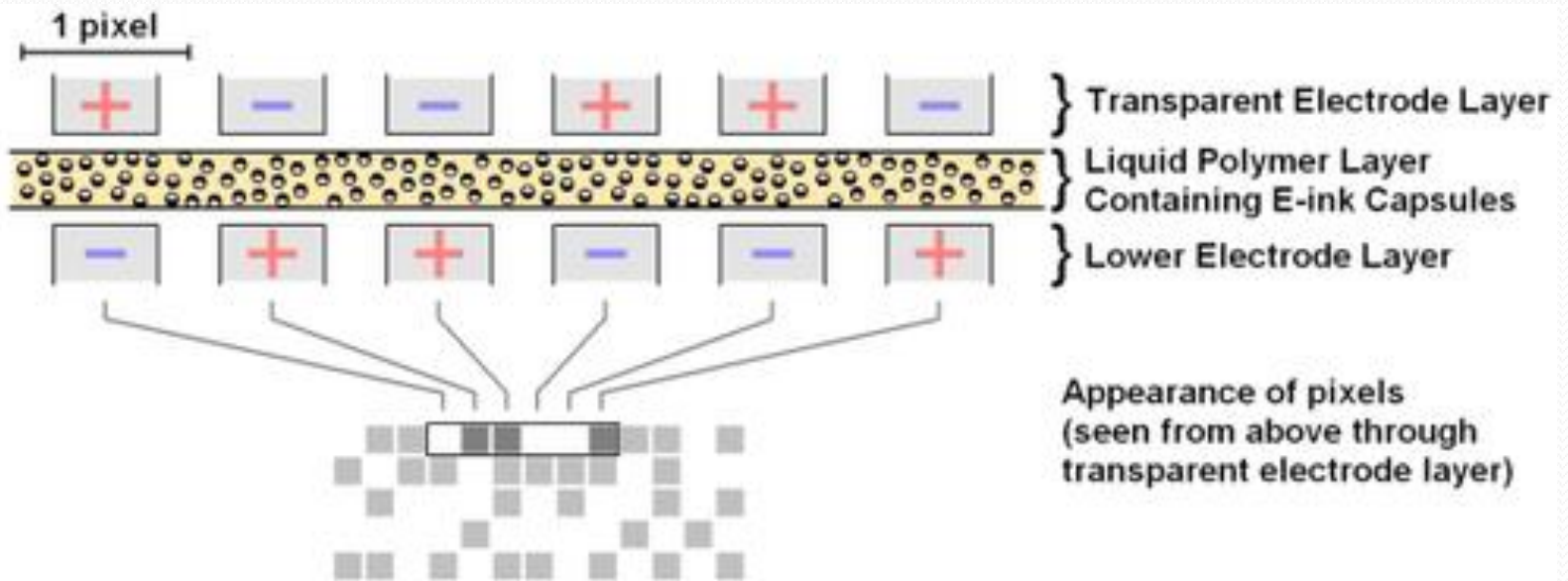
Applications for ferrofluids in electronics



The kindel

Unlike computer screens the kindel's screen doesn't give off light making reading easier on your eyes.

How it works



Project Recap

- Improvements
 - More current to my electromagnets
 - Amplifiers that are capable of putting out more current
 - Different frequency ranges on my filters.
 - Better design of the audio filters
 - Less noise.
 - Switch connected to speaker to listen to the various filtered frequencies
 - Sine wave through a full bridge rectifier for more movement in the fluid