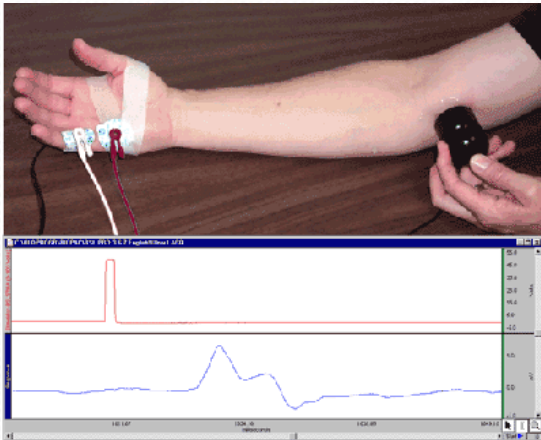
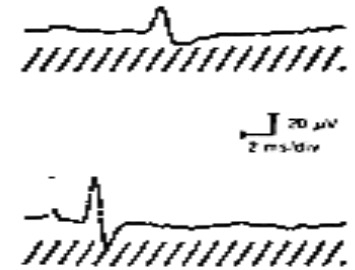
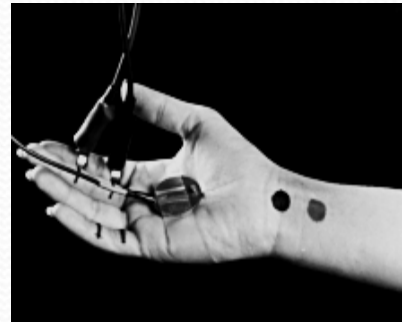


# Nerve Damage Detection Using Magnetic Pulses

Deepa Jonnagadla

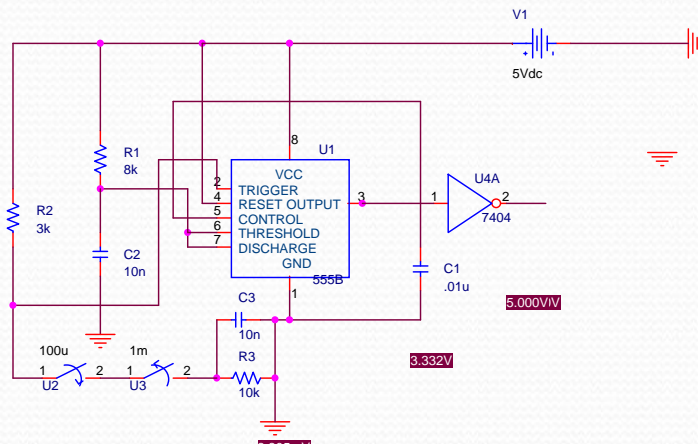
# Introduction

- Electromyogram
- Nerve Conduction Velocity
- Magnetic Pulses

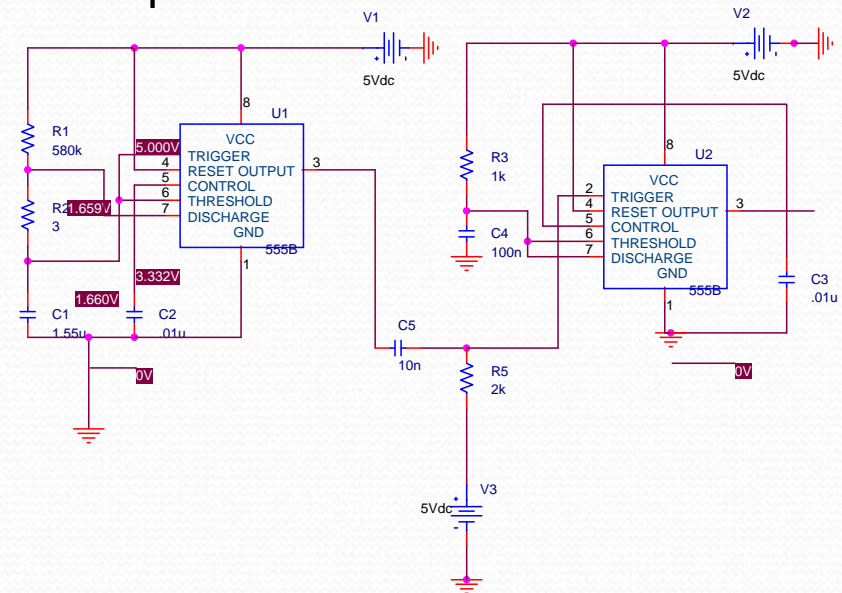


# Circuits

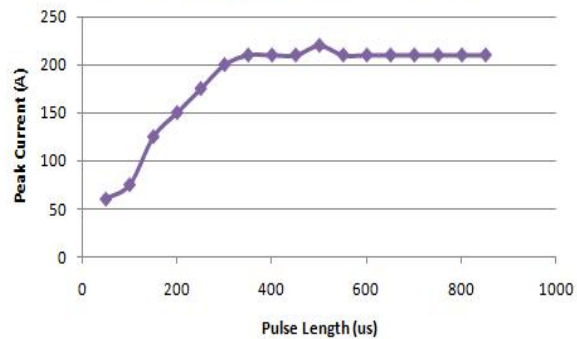
## One-shot circuit



## Multiple Pulse Circuit



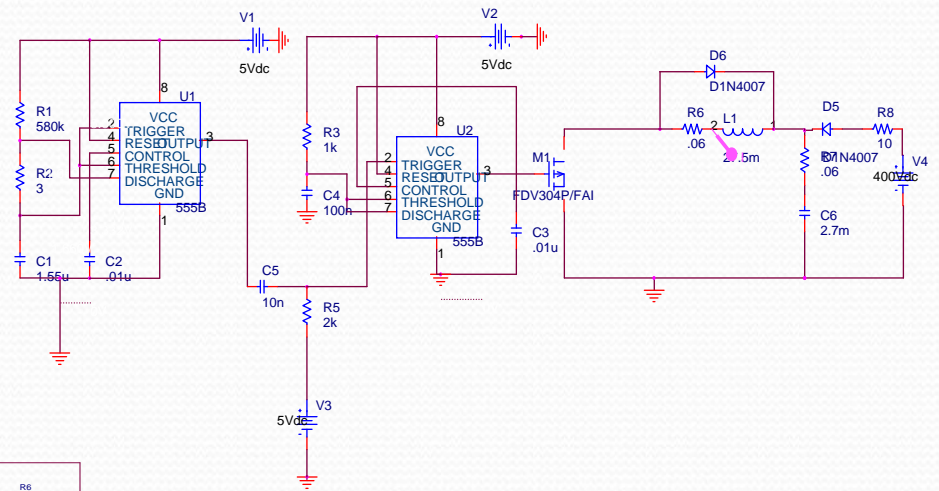
Pulse Length Vs. Peak Current



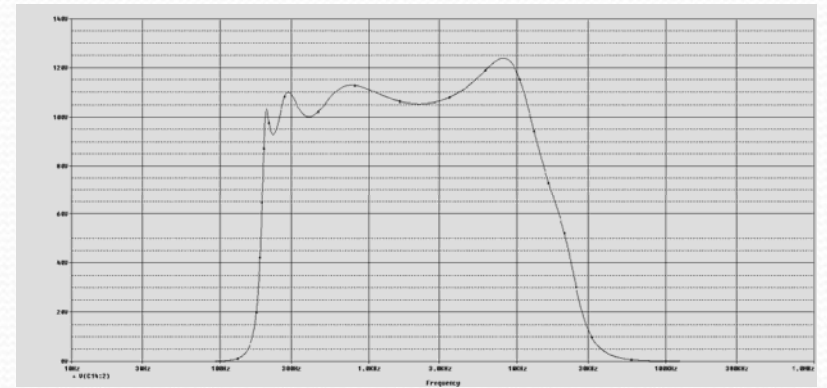
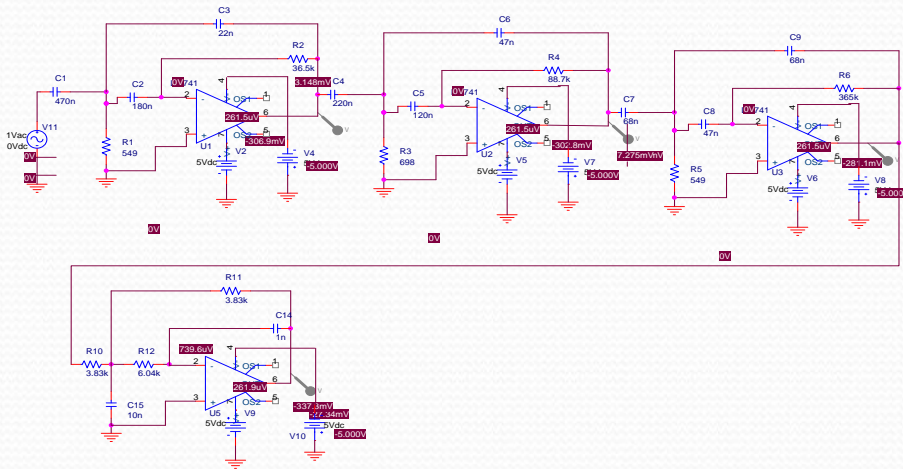


# Circuits Continued

## Main Pulse Circuit

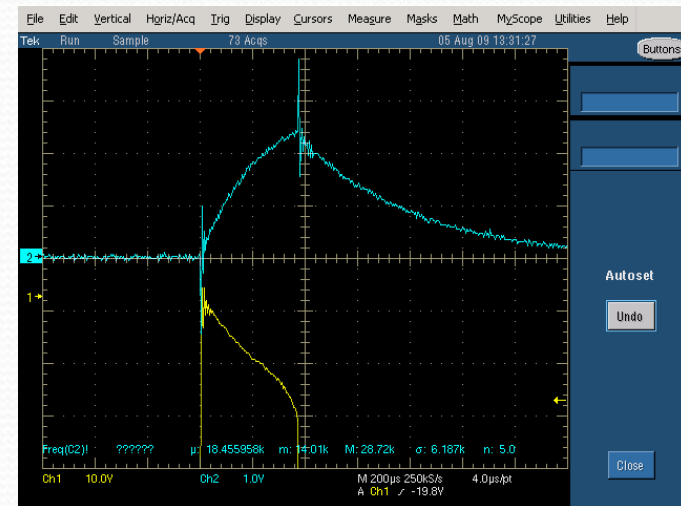


## Detector Circuit (filter and amplifier)



# Results

- We still have not been able to detect the pulse.
- We were only producing 15A from 20V through the inductor.
- Realized the need for an increase in energy of the inductor.



Screen shot of 250 A produced from improved circuit

# Future Plans

- Continue working on stimulating the nerve and detecting the pulse.
- Develop current above 1kA
- Implement the circuit in a box so that it will be safe and user friendly for clinical trials.