Physics Lab 2

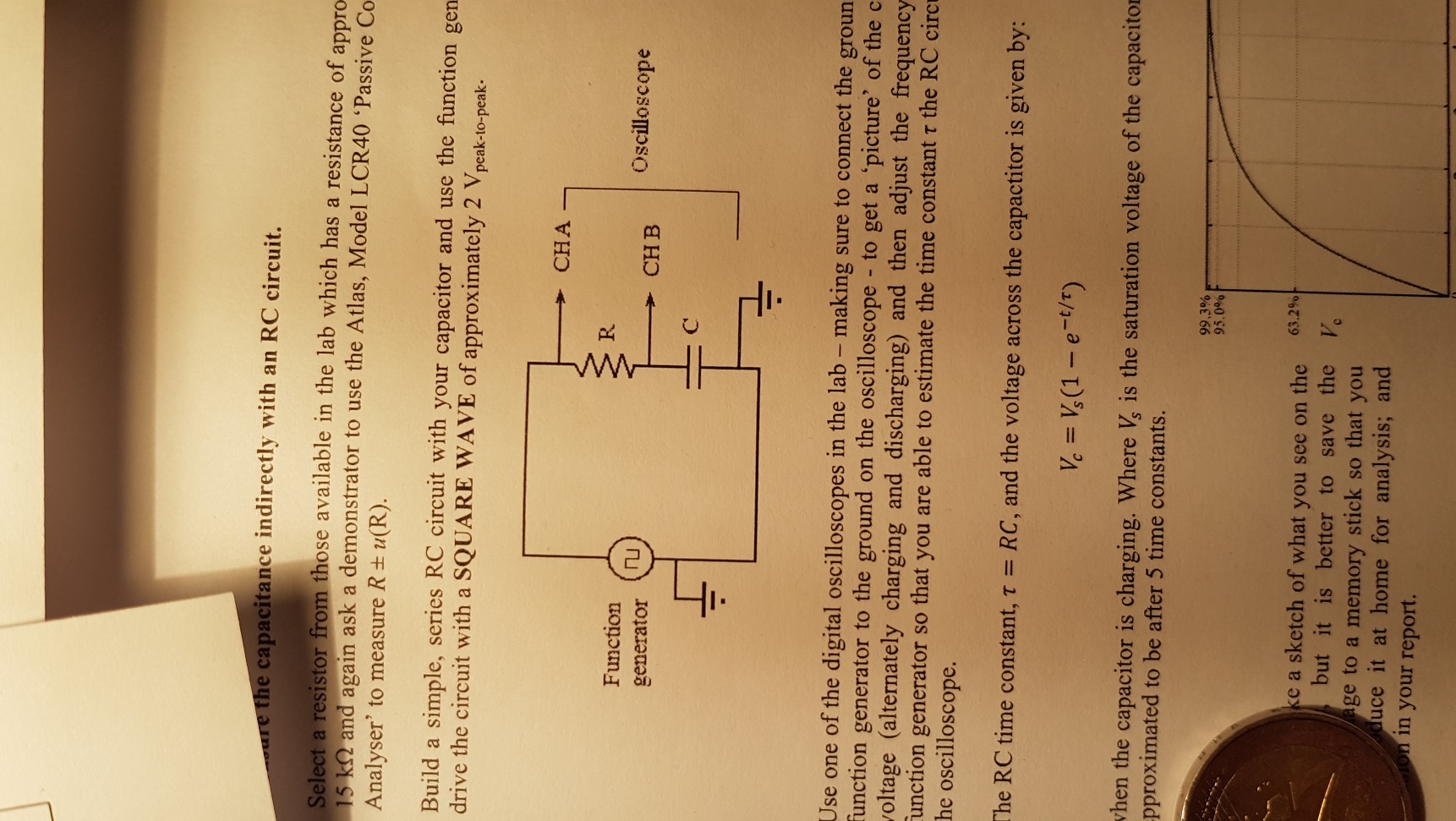
# Aim

In this experiment, we aimed to manufacture a capacitor and measure its properties in different ways.

# Introduction

The capacitance of an informally constructed capacitor can be measured in different ways, each with varying degrees of uncertainty. In this lab report the measurement of such a capacitor and the different uncertainty analyses are presented.

# Method

The capacitor was made by rolling 2 sheets of tin foil, separated by a layer of waxpaper around a pen. The capacitance is then measured in different ways. First it is measured by calculation using the formula: where and are relative permittivity’s, A is the area of the plate and d is the distance between the plates. Next, the capacitance is measured directly using an Atlas Model LCR40 passive component analyser. And finally, the capacitance is measured indirectly through an RC circuit using the formula .



# Results

Method 1: Measurement by calculation

This method of measurement uses the formula for calculating capacitance based on the physical attributes of the device.

where

Method 2: Direct Measurement

Direct measurement uses the Atlas LCR40 passive component analyser to determine the capacitance of the constructed capacitor.

Method 3: Indirect Measurement through an RC Circuit

# Discussion

All results vary but these results are meaningless without an uncertainty values. We will begin the discussion by first looking at the uncertainty values of the result.

## Uncertainty

# Conclusion

