# CALIFORNIA SCIENCE & ENGINEERING FAIR
## 2019 PROJECT SUMMARY

**Name(s)**

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**Project Number**

**J1014**

**Project Title**

## Which Type of Capacitor Charges the Fastest?

**Abstract**

**Objectives**

The objective of this experiment is to see which type of capacitor charges the fastest.

**Methods**

3 types of capacitors, breadboard, 1 resistor, digital multimeter, power supply, stopwatch and wires. Tested time taken to charge capacitor to maximum capacity using 1.5 volts as an input.

**Results**

Each capacitor was tested 3 times, and an average time was calculated.

**Conclusions**

A mylar/film capacitor charged faster than a tantalum or ceramic capacitor. It was concluded that this is because the mylar/film capacitor's metal plates, inside the capacitor, had the largest surface area and the dielectric was thinner.

**Summary Statement**

As measured by the time taken to charge the capacitors, it was concluded that not only the material, but other internal features made the difference.

**Help Received**

I did all the research by myself, and used the equipment in one of the electronic labs at the California State University, Northridge, under the watchful eye of the electronic tech.