



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Jonathan J. Davidson	Project Number J1212
Project Title Conductive Resins	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals I wanted to find out how to make conductive epoxies using conductive materials and epoxy resin, and understand the factors that affect the electrical properties of conductive epoxies.</p> <p>Methods/Materials In my experiments, I mixed epoxy separately with copper filings, copper powder, aluminum granules, and graphite powder. I built an electrical circuit, and measured the resistivities of each resin using an ohm meter. Then, I tabulated the ohm meter readings for each type of resin mixture.</p> <p>Results My experimental results showed the greatest conductivity on graphite-epoxy mixture. The copper filings-epoxy mixture showed the next best conductivity. The aluminum-epoxy mixture did not show any measurable conductivity.</p> <p>Conclusions/Discussion My observations suggest that the type of conductive material and particle size determine the electrical characteristics of conductive resins. Larger particles form resins with higher conductivity as demonstrated by the graphite granules-epoxy resin.</p>	
Summary Statement Electrically conductive epoxies can be made by mixing epoxy with electrically conductive particles.	
Help Received My Dad acquired the materials for the experiment. My Mom helped in typing the report.	