



CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s) Woori Choi	Project Number J0604
Project Title The Relationship between Conductivity and Temperature	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My Objective of this study is to see the relationship between conductivity and temperature.</p> <p>Methods/Materials I used an AC power source which stands for alternative current, 2 multimeters, a thermometer, an electrical stirrer/hot plate, Volumetric flasks and beakers. I boiled the half molar solutions; CuSO₄ and Zn(NO₃)₂. As the temperature goes up, I measured the Ampere (A). I used copper for the CuSO₄ solution and graphite for Zn (NO₃)₂ solution as electrodes.</p> <p>Results I did 6 trials for both solutions and I found out as the temperature increases, the resistivity decreases and the electrical current increases. Also, I found out that the solution of Zn (NO₃)₂ carries more electrical current than the solution of CuSO₄.</p> <p>Conclusions/Discussion In my first experiment with the CuSO₄ solution, I had a little problem. For example, there is missing data for the first three experiments. I fixed it and tried a new solution out of Zn (NO₃)₂ and using a new electrode called graphite (type of carbon). Also, I cleaned the rings that are oxidized and the electrolytes. Keeping the distance of the two electrodes helps improve my experiment. These modification helped me get better data. As the temperature goes up, the conductivity increases, too. That is because as the temperature goes up, the ions' energy increases and become more active so the electrical current goes up as well.</p>	
Summary Statement As the temperature goes up, the conductivity increases, too. That is because as the temperature goes up, the ions' energy increases and become more active so the electrical current goes up as well.	
Help Received My science teacher explained me about electrolytes and how to deal with chemicals.	