



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> <b>Jennifer A. Hritz</b>	<b>Project Number</b> <b>J1305</b>
<b>Project Title</b> <b>The Impact of Materials and Rubbing Methods on Generating and Storing Static Electricity</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of this experiment was to determine how much static electricity is generated when two materials are rubbed together and how quickly the static electricity is discharged. The experiment also explores the impact the rubbing method has on the amount of static electricity generated.</p> <p><b>Methods/Materials</b> The experiment was conducted by rubbing together various combinations of rods and cloths in different ways. The rods were placed in front of an electrostatic voltmeter and their electrostatic voltage was measured over time.</p> <p><b>Results</b> Static electricity was generated for certain combinations of materials. The High Density Polyethylene (HDP) rod produced the highest voltage when rubbed by the silk cloth and the cotton cloth produced the highest average voltage. The copper and wood rods produced no discernable amount of static electricity. The electricity discharge rate also was a function of the materials used. The HDP rod discharged the slowest and the glass rod discharged the quickest.</p> <p><b>Conclusions/Discussion</b> The rubbing method used to generate the static electricity had an impact on the amount of static electricity generated. The up and down rubbing method produced more voltage than the circular rubbing method. The experiment could be expanded to provide insights into how static electricity could be harnessed. With the right materials and application it may be possible to create a generator that produces enough power to charge small devices. It may be possible to recharge your mobile phone when you walk across a carpet. Or, maybe you could charge a hearing aid by wearing a special kind of sweater.</p>	
<b>Summary Statement</b> The goal of this experiment was to test how different materials and rubbing methods affected the generation and storage of static electricity.	
<b>Help Received</b> My parents helped with acquiring the materials and equipment that I used in my experiment.	