



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

<b>Name(s)</b> <b>Harry L. Powell, Jr.</b>	<b>Project Number</b> <b>J0723</b>
<b>Project Title</b> <b>Electromagnetic Motor Configurations</b>	
<b>Abstract</b> <b>Objectives/Goals</b> Electromagnetic motors specifically run on electricity and magnetism. When you put these together they may run very fast. My project's main purpose is to test the different effects that different ways of wrapping wire around the rotor affects the speed of the motor. <b>Methods/Materials</b> If you look on you will see all the tests I have done to see the difference in the way you wrap the wire around the rotor. I tested five different ways of wrapping. Each of the wraps has different styles of wrapping. The different wraps were all unique. All of the settings that I used were exactly the same. I also used the same batteries every time. When I tested the batteries they were one volt less then when they were fresh. <b>Results</b> In the end I found some interesting results. I found that with more wraps and less gaps that the motor seems to run quite a bit faster. The runs with gaps were ok but the rotors with more wraps and fewer gaps were the best. <b>Conclusions/Discussion</b> The rotors with more wraps surprised me a lot. They ran much faster then I expected. I also found that there is a so-called point of safe return where too much weight makes the motor run much slower. When this happens, it was a good time to stop.	
<b>Summary Statement</b> My project is an attempt to find the different effects on the speed of a rotor with different styles of wrapping.	
<b>Help Received</b> Mother helped transport project; mother bought materials; father bought materials; used wood and objects from the LJCDS workshop; built project under the supervision of Thomas Smith	