



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Stephanie Y. Chang	Project Number J0698
Project Title Polyester: The Ultimate Oil Spill Solution	
Abstract Objectives/Goals The objective is to find out which biodegradable or recyclable material is the best oil spill absorbent. Since polyester is processed from crude oil, which has the "like dissolves like" principle in organic chemistry, my goal is to prove that recyclable polyester will absorb the most oil. Methods/Materials I used gravimetric method to do this experiment. First, I weighted 10g of each oil absorbent material. Then I put it in a pan that contained motor oil. After 2 minutes, I reweighed the absorbent. I then calculated the mass of motor oil absorbed and compared the absorbing capability between the different oil absorbent materials. My independent variable was the different types of oil absorbent materials, and my dependent variable was the mass of the absorbed motor oil. My controlled variables included: the type of motor oil, the mass of the oil absorbent material, and the duration of time in absorbing oil. Results The order of absorbency from least to greatest was: charcoal, oak bark, human hair, cheese cloth, and polyester. Polyester absorbs about 28 times its weight in motor oil. The absorbing capability of polyester is about three times compared to cheese cloth, which is the second best motor oil absorbent. Conclusions/Discussion In conclusion, I learned that polyester is the best motor oil absorbent among charcoal, oak bark, human hair, and cheese cloth. I also learned that different textures and fiber of polyester have a different capability in absorbing motor oil. Among all the different types of polyester that were used in the experiment, polyethylene terephthalate has the best oil absorbing performance. Through this experiment, I had proven my hypothesis to be correct.	
Summary Statement Throughout my experiment, I have determined that polyester is the ultimate oil spill absorbent.	
Help Received My parents taught me how to plot the graphs using Excel spreadsheet.	