



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> <b>Manasi S. Deshpande</b>	<b>Project Number</b> <b>J1010</b>
<b>Project Title</b> <b>Cleaning Up Oil Spills Using Nanotechnology</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of my experiment was to determine if the efficiency of removing oil from water using ferrofluid, a magnetic liquid, would change by varying the amount and temperature of ferrofluid. My hypothesis was that if I lower the temperature and increase the amount of ferrofluid the magnet will separate oil from water more efficiently. <b>Methods/Materials</b> In three petri dishes, take 2.5 ml of mineral oil and 15 ml of water. Change the temperature of ferrofluid to 0, 10, 20, 30 and 40 degrees Celsius. For each temperature add 5, 10 and 15 drops of ferrofluid. Put the neodymium magnet into the mixture and measure the remaining oil. <b>Results</b> The neodymium magnet was able to remove the most oil with more drops of ferrofluid at a lower temperature. It remove the least when ferrofluid was at the highest temperature and less drops were used. <b>Conclusions/Discussion</b> The results of the experiment supported my hypothesis. These results proved that in the real world, cleaning oil spills with ferrofluid would be the most efficient if the temperature was lowered and more of it was added.	
<b>Summary Statement</b> This experiment explores whether a difference in temperature and volume of ferrofluid will change the efficiency of removing oil from water.	
<b>Help Received</b> My mom helped me heat the ferrofluid.	