



CALIFORNIA STATE SCIENCE FAIR 2016 PROJECT SUMMARY

Name(s) Katherine Dean; Dilan Patel	Project Number J1009
Project Title Solar Powered Water Desalination	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this experiment is to determine how the color of the bottom of a solar powered desalination device affects its efficiency.</p> <p>Methods/Materials Tested and compared how the color of the bottom of a solar powered desalination device affects its efficiency by measuring the amount of desalinated water produced by a solar powered desalination device after a four-hour testing period. Used clear plastic shoe boxes, small funnels, plastic straws, modeling clay, duct tape, plastic cling wrap, disposable plastic cups, metal washers, various colors of construction paper, and aluminum foil to build the devices. Used water, salt, and beakers of various sizes in testing the solar powered desalination devices.</p> <p>Results The amount of fresh water produced by each solar powered desalination device, each with a different colored bottom, was collected and compared at the end of a four-hour testing period to determine which color on the bottom of the solar powered desalination device is most effective in producing fresh water. The results concluded that solar powered desalination devices with black construction paper on the bottom produce the most desalinated water compared to solar powered desalination devices with white construction paper, blue construction paper, brown construction paper, and aluminum foil on the bottom. In most trials black produced approximately 10 ml of fresh water from 250 milliliters of saline water. The darker colors generally outperformed the lighter colors in the majority of tests.</p> <p>Conclusions/Discussion The solar powered desalination device with black construction paper on the bottom is most effective in removing salts, ions, and other dissolved solids from saline water. This demonstrates that solar powered desalination devices with black on the bottom could provide a reasonable alternative to reverse osmosis filters to produce freshwater from saline water without damaging the environment or using extensive natural energy resources typically from fossil fuels.</p>	
Summary Statement My partner and I built five solar powered desalination devices to determine how the color of the bottom of a solar powered desalination device affects its efficiency.	
Help Received None. My partner and I built and tested the experiment by ourselves.	