Alkaline and Lithium Batteries

METROPOLITAN Community College

INTRODUCTION

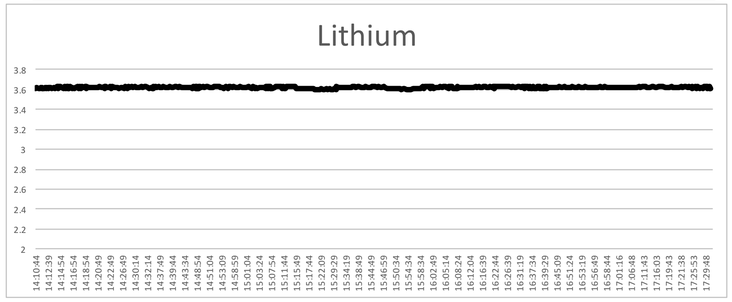
In Physics 211B class we had a opportunity to launch a high altitude balloon. Every team worked on their own different projects. Our team used a Alkaline and lithium batteries to power a electronic devices which used our balloon project.

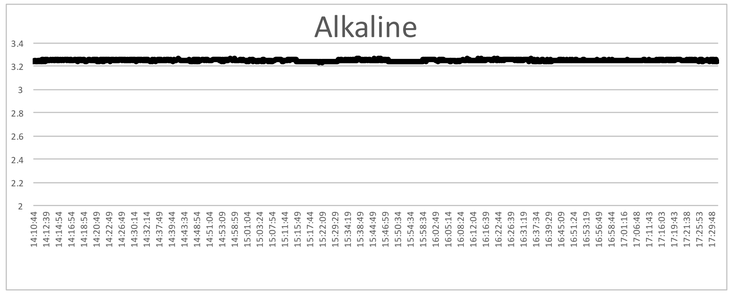
METHOD

We put 2 alkaline and 2 lithium batteries in 2 separate battery cases connected with a wireless transmitter. The battery cases were sealed and tightened to the pod to avoid movement during the flight. As the balloon goes, the data will be transmitted to the ground. Then we recorded the changes in voltage of the batteries.

RESULT

The graphs of voltage drops over time of alkaline and lithium batteries look very similar to each other. The lithium batteries stay at around 3.61V and the alkaline batteries stay at around 3.25V during the whole flight. Both of the batteries also experienced some changes in voltage at the same time. Because both of the batteries worked, the extra cost for the lithium batteries might not worth it.





When the balloon reached its highest altitude, both alkaline and lithium had a slightly drop in voltage. At that moment the data also showed the temperature was also at the lowest during the flight, around -45^{0}F.

CONCLUSIONS

The voltages of both alkaline and lithium batteries are not significantly affected by altitude.

The possible factor that might affect the drop in voltage during the flight is temperature.

CONTACT

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