Introduction: A satellite’s thermal management system controls the amount of heat absorbed or rejected through radiation in space environment. There are thermal cycles as the satellite orbits around the Earth’s shadow creating various thermal loads that must be controlled and dissipated.

Goal: To develop an electrochromically controlled film that can variably absorb or reflect radiation for a Cube-Sat at low-Earth Orbit.

Objectives:
1. Create a low cost electro chromic plates.
2. Test and compare low cost film to competitive plates.
3. Develop a control system to have adaptable thermal performances.

Timeline

The electro chromic film features five layers of electro chromic materials.

Layer One - Indium Tin Oxide (Conductive Layer)
Layer Two - Titanium Oxide (Anode)
Layer Three - Lithium Perchlorate (electrolyte)
Layer Four - Tungsten Oxide (Cathode)
Layer Five - Indium Tin Oxide (Conductive Layer)

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