

Brown University with Rhode Island School of Design

"TEST-RAD: Tufted Electrostatic Solution To Regolith Adhesion Dilemma"

Faculty Advisors: Dr. Rick Fleeter and Dr. Christopher Bull

Team Video: <https://youtu.be/GhYIjW1dW88>

TEST-RAD aims to prevent suit & seal damage from electrostatically charged regolith and create a higher standard of safety for astronauts. TEST-RAD provides systematic layers of protection at the suit's most vulnerable points through implementing tufted electrostatically charged repulsion fibers and regolith catching fibers where abrasion is most likely to occur.

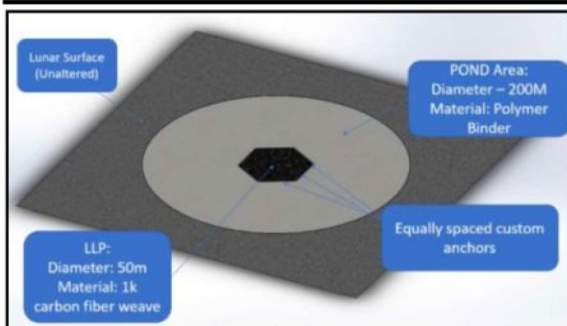
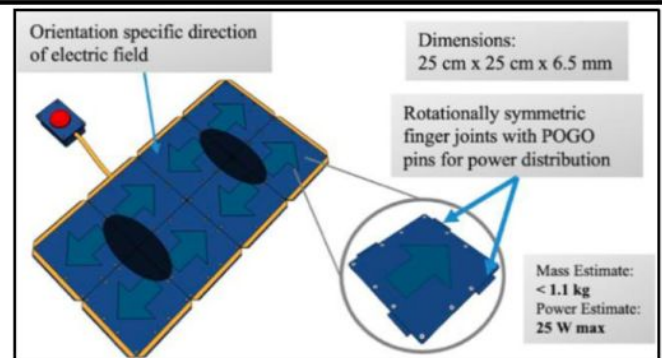
California Institute of Technology

"Habitat Orientable and Modular Electrodynamic Shield"

Faculty Advisor: Dr. Soon-Jo Chung

Team Video: https://youtu.be/d_2UnNPtdXQ

To address the issue of lunar dust intruding in habitable spaces, the Caltech team introduces the Habitat Orientable and Modular Electrodynamic Shield (HOMES). HOMES is a collection of 0.25 m x 0.25 m and 1.1 kg panels requiring 8 W embedded with an Electrodynamic Dust Shielding (EDS) system to mitigate lunar dust in a variety of applications.



Colorado School of Mines with ICON, Masten Space Systems and Adherent Technologies Inc.

"Lunar In-Situ Landing/Launch Environment (LILL-E) Pad"

Faculty Advisors: Dr. George Sowers, Dr. Christopher Dreyer,

Dr. Kevin Cannon, Jason Ballard, Matthew Kuhns, and Dr. Ronald Allred

Team Video: https://youtu.be/Tf_u11WaY8

The Lunar In-Situ Landing/Launch Environment (LILL-E) Pad, addresses

landing dust prevention and mitigation on the Moon. The system consists of two parts:

- 1) the POLYmer Nozzle Distribution (POND) area, which consists of a binder-regolith reinforced surface, and
- 2) the Landing/Launch Pad (LLP), a carbon fiber fabric barrier that is anchored to the surface as the central landing/launch point.

Georgia Institute of Technology

"Hybrid Dust Mitigation Brush Utilizing EDS and UV Technologies"

Faculty Advisors: Dr. Julie Linsey, Dr. Thomas Orlando,

Dr. Edgar Glenn Lightsey, and Dr. Zach Seibers

Team Video: <https://youtu.be/D8fADKdk7TQ>

Shoot for the Moon proposes a hybrid brush which utilizes EDS and

UV technologies to remove lunar regolith from space suits and other applicable surfaces. Bristles in the brush contain electrodes in an EDS system that attracts the charged lunar regolith particles and brushes them off the suit. Remaining, uncharged regolith particles are charged by UV emitters to enable removal by the EDS system.

