Nanoscale satellites provide cost effective access to space for small-scale research. Limited orbit selection has created the desire for a suitable propulsion system.

- Hybrid rocket motors provide safety over traditional solid or liquid motors.
- Additive manufacturing (“3-D Printing”) decreases costs and construction time.

The objective of the project is to design a baseline 3-D printed, hybrid thruster and conduct proof-of-concept tests. Evaluation of the thruster includes both hydrostatic pressure and hot-fire performance tests.

Initial evaluations indicate potential feasibility of an all 3-D printed hybrid thruster. Results from hot-fire testing will provide data for refinement of performance predictions.

Developing low cost, miniature propulsion units increases the versatility and potential uses for nanoscale satellites. This increased usability of nanoscale satellites will further the goal of space exploration by enabling cheaper alternatives to be used in missions.

This study provides a design baseline for a cost effective alternative for satellite propulsion. Such an alternative increases the uses of nanoscale satellites and allows for less expensive mission choices.

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