Abstract Submitted
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Design of the FIU Ion Propulsion Engine (FIPE) STEPHEN REVSEZ, None — Long duration space flights will at some point require an efficient engine to withstand the depths of space and time. Chemical rockets are the power house engines used to bring payloads into low-Earth orbit (LEO), maneuver satellites, and among other tasks. Another type of engine utilizes the electromagnetic forces of charged particles to create thrust instead of controlled explosions. These engines are dubbed ion or hall-effect thrusters. Both differ in their techniques for accelerating charged propellant gas by either using charged grids or orthogonal magnetic fields to confine particles as a pseudo-grid near the exhaust. For this research we focused on the ion or gridded acceleration method and set out on designing a thruster that utilizes easy construction and dismemberment in outer space. An important part of this research was on the materials that were to be used for constructing a model of the engine for experimentation and examination of its efficiency. The design is also described in detail by CAD drawings of the final design of the engine. The engine is the first to be designed and eventually built at Florida International University and thus is named the FIU Ion Propulsion Engine (FIPE).

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None

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