



Oregon State University
College of Engineering



Electric Propulsion Capstone Team – Spring 2022

Design Engineering Lab – Gridded Ion Thruster Prototype
Testing

Experimental Document

04/14/2022

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Figure 1 – Figure of the prototype before experiment

I. Purpose

Generation of a desirable plasma cone was observed in previous test's, however considerable ionization was also observed

II. Components of Prototype

Figure 2 – Image of components material

III. Test Results

Figure 3 – Image of the prototype inside the chamber

Figure 4 – Image of the prototype during the experiment

Table 1: Demonstrative image sampling of experiment

Test no.1							
Test no.2							
Test no.3							
Test no.4							

Figure 5 – Plot of results

Table 2: Test results

Number	Mass flow rate at discharge cathode (sccm)	Mass flow rate at Neutralizer (sccm)	Pressure (Torr)	Voltage at Discharge cathode to Anode (V)	Voltage at Anode to Neutralizer (V)	Voltage between Grids (V)	Angle of Thrust (degree)	Thrust (mN)
1								
2								
3								
4								

IV. Discussion