Analyzing the Potential of Lift Ionic Thrusters Can Produce by Increasing Efficiency

Woodland, Aaron (School: Fremont High School)

Ionic thrusters are used in the space industry, but not in general aviation. If ionic thrusters could be designed so they can produce enough lift, it could be a more green form of flying and aviation transportation. Creating the first version, showed that it was possible. But it didn't show the results needed. By version 3, results showed more progress. With each version, the thrust output increased, because of slight changes to the nozzle or the way it was built. Version 6-7, the results were significantly more promising than version 1, creating more thrust. Version 7 was also lighter than version 1 because of the 3D printed base instead of the cardboard that was used in version 1-4. Changing the battery type also increased the power while decreasing the weight at the same time. Using a digital Anemometer, Version 6 had created .7- .8 m/s of thrust, while Version 7 had created .6-.7 m/s of thruster. This translates to between .26-.35 Newtons. This shows that ionic thrusters could lift themselves if they are designed correctly. By doing this, we create a more economically friendly form of propulsion for aviation.