Ion Innovation: Revolutionizing Aerospace Travel With Electric-to-Kinetic Energy Propulsion

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The engineering goal of my project is to make and test the efficiency of an ion propulsion device. The trials will include multiple variables such as same terminal shape/spacing and the way the device is wired parallel vs series. I will then use the data collected to set up my most optimal device and test on the ratio of energy out to energy in, otherwise known as product efficiency. The point of this project is to provide adequate data towards a subject that has the potential to revolutionize aerospace travel as a whole. The trials were done with P(1-6) and N (1-3) . I then wired P(1-3) and N(1-3) in series and compared results there as well, where P and N are different positive and negative terminals. In conclusion, my engineering goal was to create an ion propulsion device. I achieved this by making the housing out of PVC coupling and the terminal rings out of PVC pipe, I then ran high voltage DC current parallel to each other with a spark gap of 0.01m this process must be done with a low surface area for the positive terminals, and a high surface area for the negative terminals. Multiple tests were run on the difference in terminal shapes and the ways each were wired. I found my best results with the terminals P2 And N3 With both wires in series compared to in parallel. Finally with all of the data gathered and applied I created an ion propulsion device that could be used with an efficiency of 0.679344.

Awards Won: