Faraday's Return

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The purpose of the Faraday Return project was to pioneer innovation in the field of generator technology through a new generator technology that takes full advantage of Faraday's law of electromagnetic induction, maximizing the change in magnetic flux, therefore increasing electrical output and efficiency. The Faraday Turbine uses multiple rotating magnetic fields in an innovative fashion to produce energy. The Faraday Turbine was built through an iterative design process that involved a large amount of prototyping to reach the final result. The majority of the apparatus was 3D printed, other parts such as the gears and motors were purchased. The vast majority of the prototyping process revolved around the 3D printed components in order to achieve acceptable tolerances within several assemblies. Once completed, twenty trials were conducted with ten observations in each "trial" set. The first set of trials involved counter-rotating turbines and the second involved the turbines rotating in the same direction. Five trials in each trial set were devoted to voltage, and five to amperage. Each individual trial lasted twenty-five seconds with one data point being recorded per second. In conclusion, the project was extraordinarily successful, with output in the optimal layout being 90~99 watts out of the 101 watt input.

Awards Won: