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## **Self-neutralization experiments with a ferroelectric plasma thruster**

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The use of microspacecraft for space missions is an active area of research. Micropropulsion is a technology which provides small yet efficient thrust. One microthruster being developed at the University of Missouri is the ferroelectric plasma thruster (FEPT). The FEPT uses a radio frequency power supply to generate plasma on the surface of the ferroelectric. The thruster accelerates ions which provide thrust. This presentation will focus on one aspect of FEPT performance: the ability for self neutralization. The project is divided into two phases. The first part is to build a small, portable radio frequency amplifier that runs off batteries to use as a power supply. This will replace the heavy and bulky lab equipment currently used to power the thruster. Details of the design including simulations will be presented. The second part is to investigate the self neutralization capabilities of the FEPT. Neutralization will be investigated by measuring the floating potential of the FEPT as electrons and ions are accelerated away from the thruster.