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An RF Driven, Ferroelectric, Atmospheric-Pressure Plasma Source SCOTT KOVALESKI, DUSTIN SULLIVAN, MARK KEMP, University of Missouri-Columbia — The ferroelectric atmospheric plasma source generates plasma at atmospheric pressure and functions with a wide variety of gases. Research on the source extends from research on a ferroelectric plasma thruster (FEPT) being developed for microspacecraft. The ferroelectric plasma source is driven by oscillating high voltage at RF frequencies. The ferroelectric plasma source produces plasma at a surface partially covered by an electrode when the spontaneous polarization vector is reversed. At the University of Missouri-Columbia, research is focusing on using the FEPT under atmospheric pressure conditions. Goals of this research are to find optimum device parameters for plasma generation, including but not limited to gap width, electrode height, applied voltage, frequency dependence, and ferroelectric ceramic materials.

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