

Abstract Submitted
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Low inductance high voltage multi-gap gas switch for high repetition rate pulsed power applications¹ ADAM KLIM, JOHN MORRISON, KEVIN GEORGE, Innovative Scientific Solutions Inc, Dayton, Ohio, JOE SMITH, The Ohio State University, Columbus, Ohio, GREGORY NGIRMANG, AFRL/NRC, JOE SNYDER, Miami University, Hamilton, Ohio, KYLE FRISCHE, Innovative Scientific Solutions Inc, Dayton, Ohio, CHRIS ORBAN, The Ohio State University, Columbus, Ohio, WILLIAM ROQUEMORE, AFRL — The ability to perform high repetition rate pulsed power experiments depends crucially on several factors including fast switching and fast power supply charging times. We present the design and characteristics of a switch intended for use in a 10Hz fast dense plasma focus experiment to be conducted at the Air Force Research Laboratory at the Wright-Patterson Air Force Base. More importantly, due to the relatively simple design with low cost for parts, modifications such as changes to the internal gas pressure or the number of electrodes can be easily made to increase the versatility of the switch. Furthermore, we intend to demonstrate how the use of annular electrodes can be a better alternative to the conventional solid disk electrodes by the reduction of inductance from the formation of a cylindrical plasma current carrying sheath and overall switch weight.

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