



Contribution ID: 192

Type: **Poster Presentation**

A High Voltage, Solid-State Switch for Magnetron Driving

Tuesday 5 June 2018 13:30 (1h 30m)

Eagle Harbor Technologies, Inc. is developing a series stack of solid-state switches to produce a single high voltage switch that can be operated at over 35 kV for magnetron driving applications. During the Phase I program, EHT developed a 15-kV high voltage switch module with isolated power gate drive that could switch 300 A at switching frequencies up to 500 kHz for 10 ms bursts. Robust switching was demonstrated for both IGBTs and SiC MOSFETs. Now in the Phase II program, EHT is developing a higher voltage version for driving a pulsed magnetron at the Lithium Tokamak Experiment at Princeton Plasma Physics Laboratory. This pulsed magnetron driver will produce high voltage, low ripple waveforms. EHT will present experimental testing results for the new high voltage switching modules and system designs for a pulsed magnetron driver.

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Session Classification: Poster 2 - High Voltage Design and Power Modulator Components