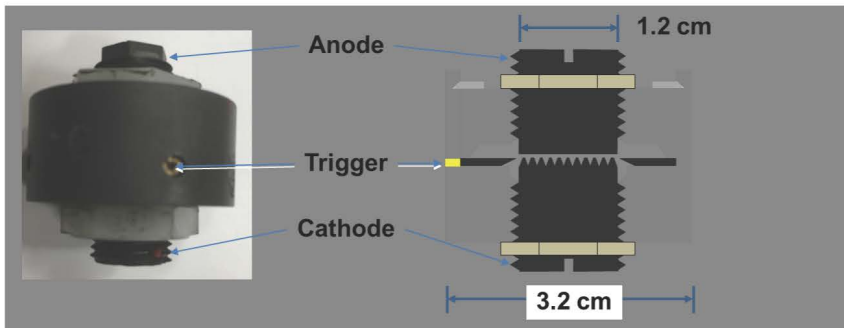
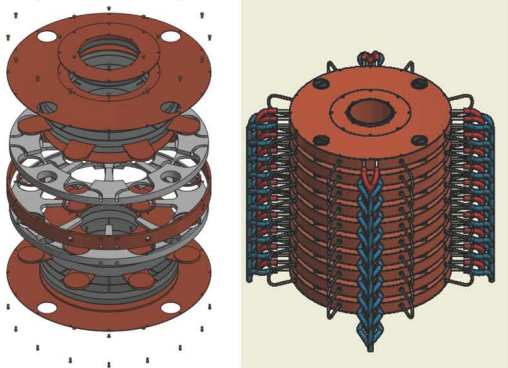
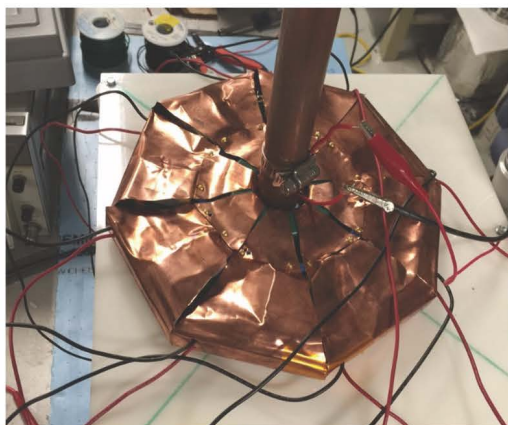


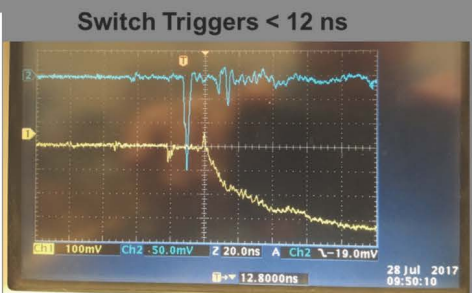
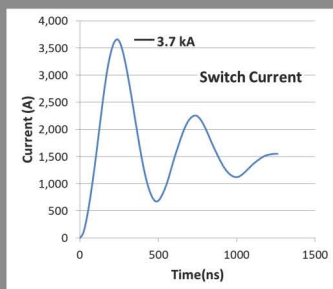
Linear Transformer Drivers for Z-pinch Based Propulsion

Robert B. Adams, Ph.D.¹, William Seidler, Ph.D.², Patrick Giddens², Leo Fabisinski¹, Jason Cassibry, Ph.D.²

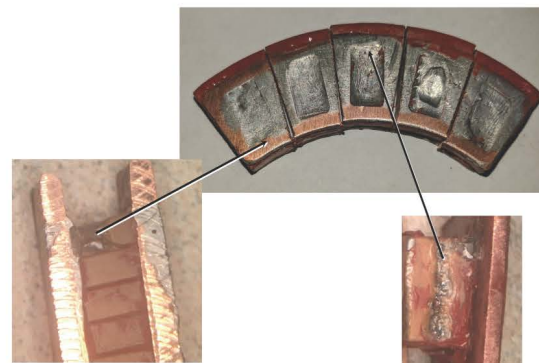
Concept and experimental LTD's developed at MSFC. Upper figure shows first system to fire multiple bricks simultaneously. Lower views show current LTD and stack design.



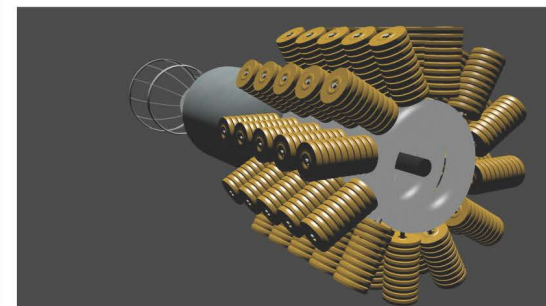
A successful LTD system requires fast, low inductance switches. The figure above shows our current design iteration. This switch is responding within 12 ns with sufficient current (figure below) for our LTD design.



Switch Resistance: 0.05 ohms
 Test Inductance: 12 nH
 Test Voltage: ±2000V
 Test Capacitance: 2x0.25 µF
 Trigger Voltage: +1000V



(Upper) Recent failure of current design. Five capacitor stack shorted across weakest capacitors. (Below) Illustration of the LTD system driving the Pulsed Fission Fusion Vehicle for an interplanetary spacecraft.



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