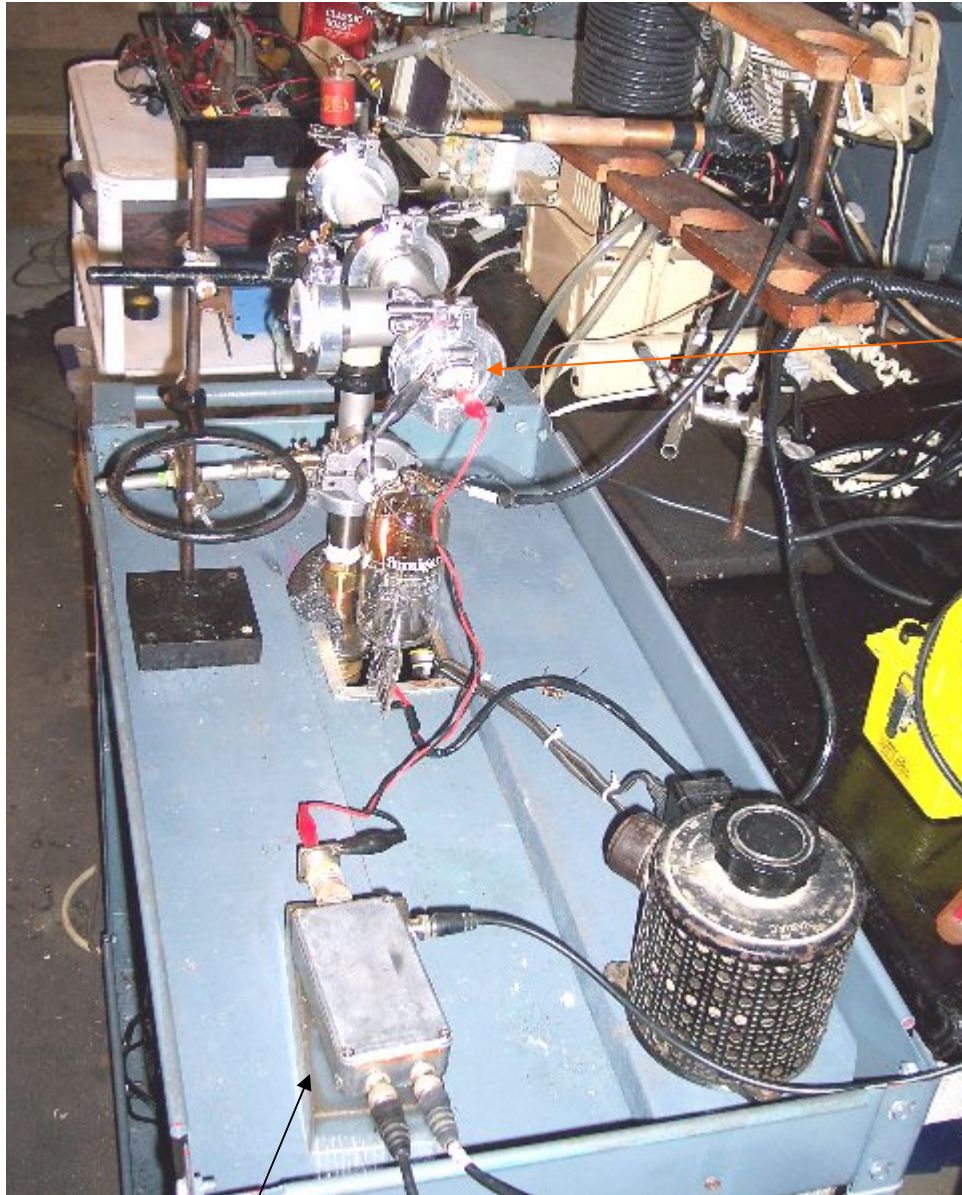


Continuation Ferroelectric Experimental Results Simple Diode Configuration

1 June 2013

Experimental Setup Photos:

Photo 1 Cathode Side of Setup



Cathode Hookup

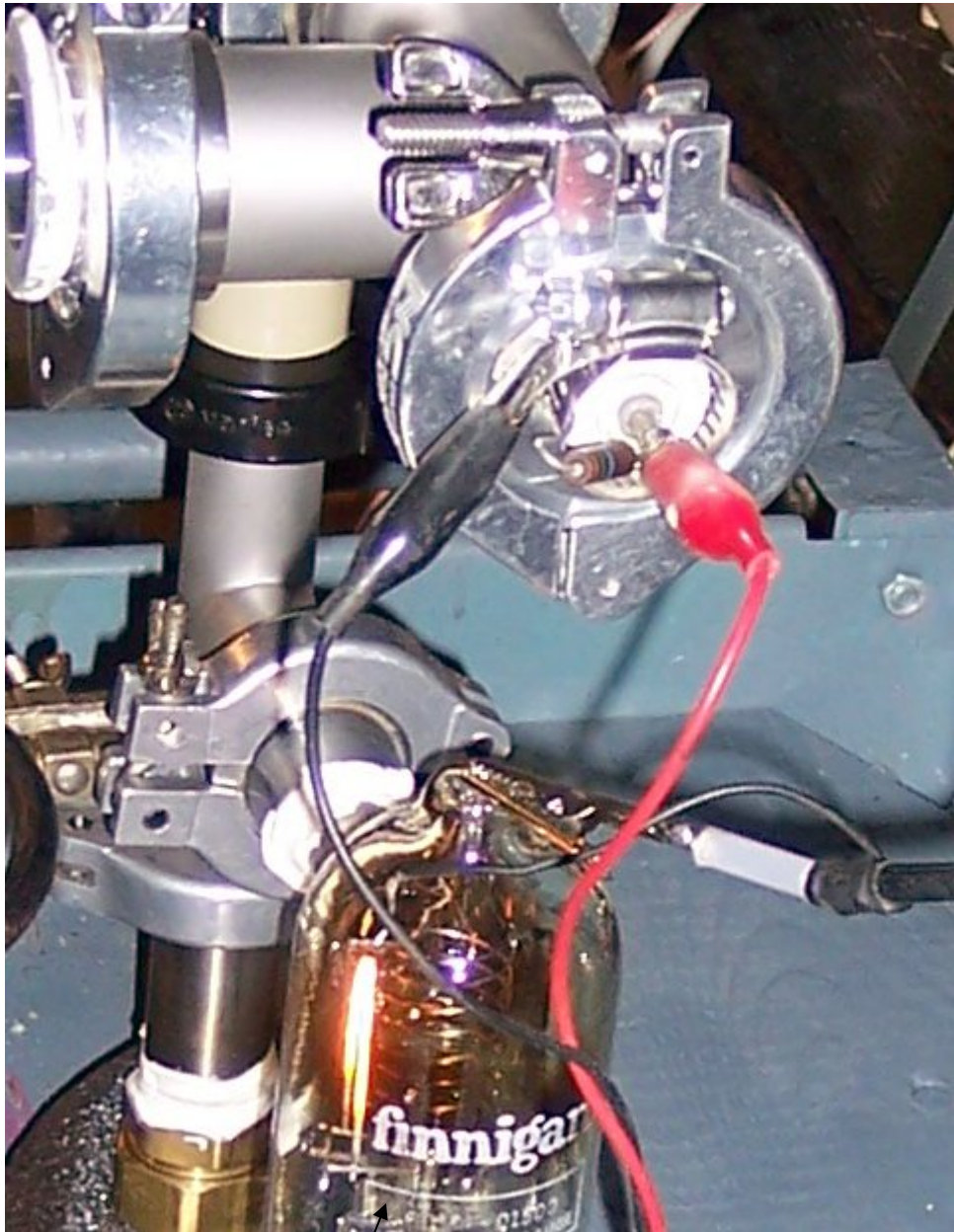
Cathode Drive
PWR

Cathode Driver

Trigger IN

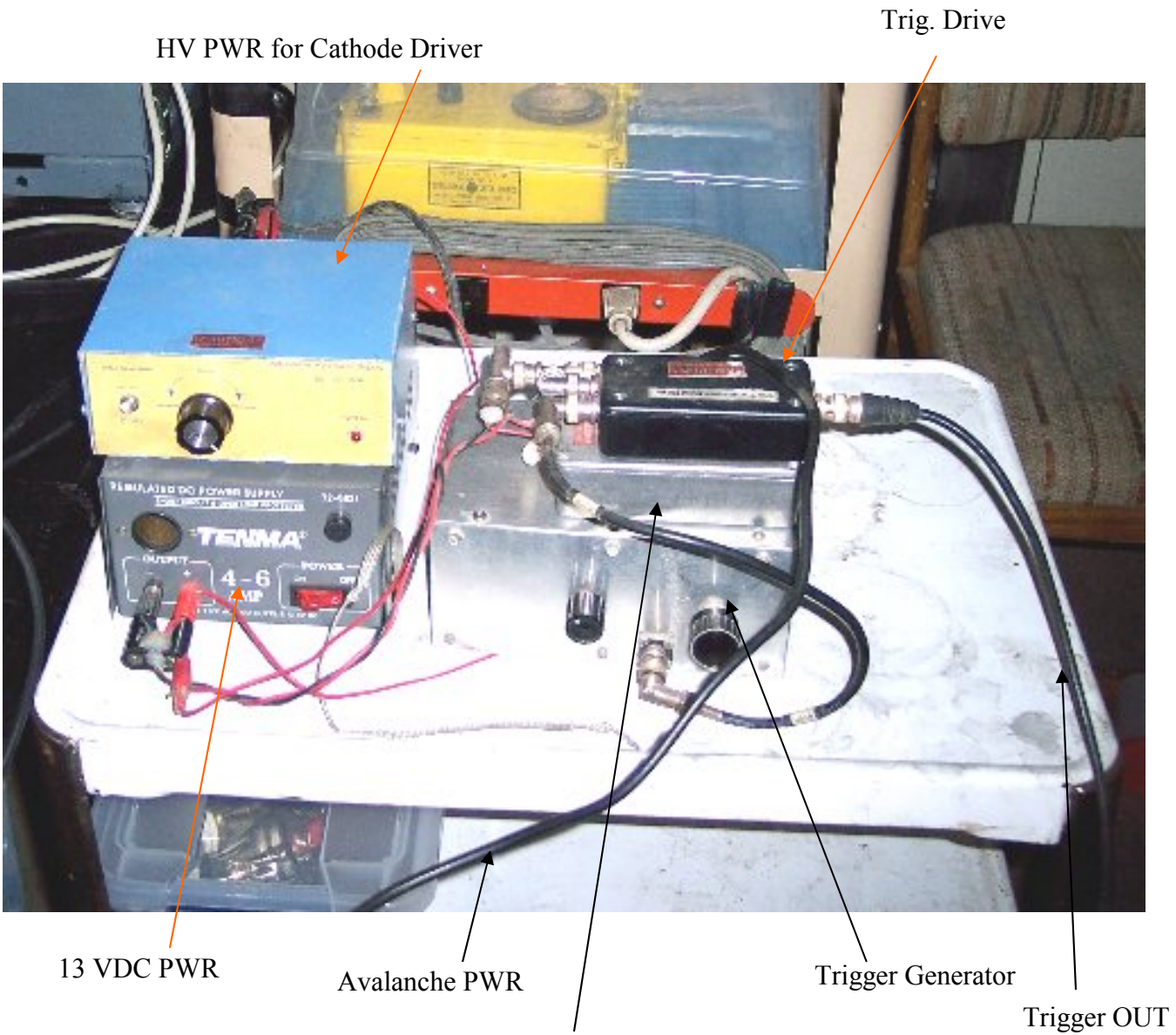
Avalanche Transistor PWR

Photo 2 Close up of Cathode Hookup



ION Gauge

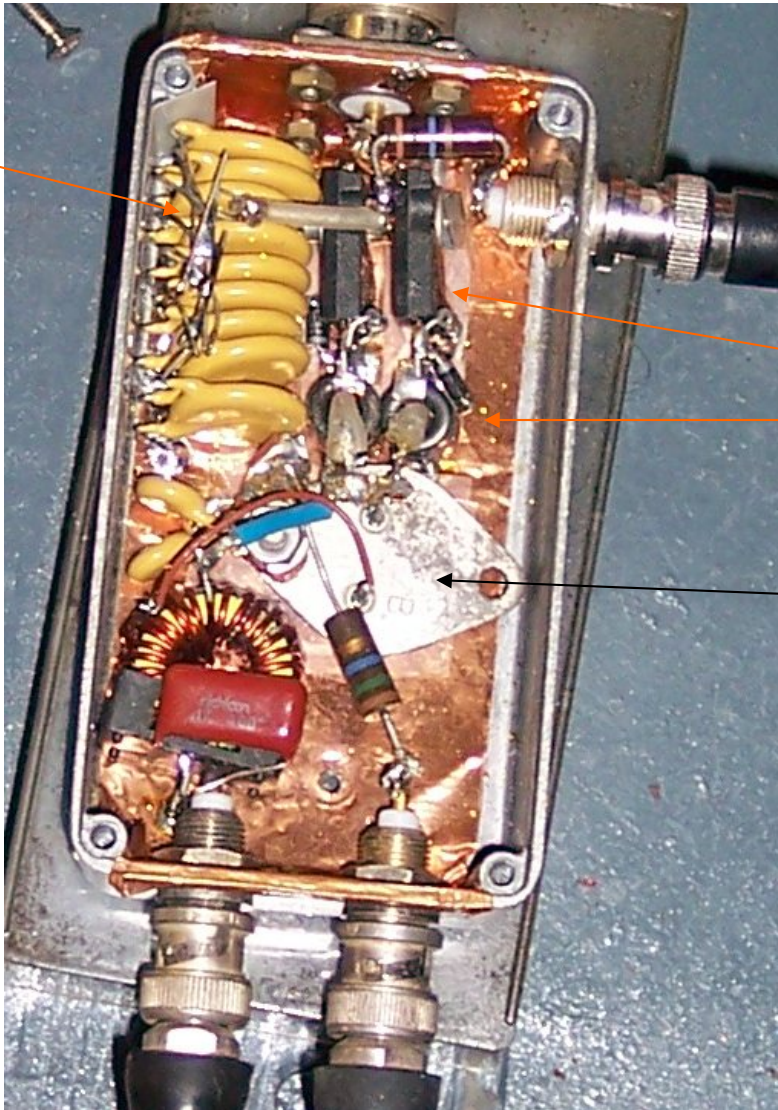
Photo 3 Cathode Drive Controller



HV PW for Avalanche & Trig. Drive

Photo 4 Cathode Driver

OUT to Cathode



9X 2.7nf
Ceramic Cap.
Energy Storage
for Cathode Drive

Cathode PWR

2X IGBT SW

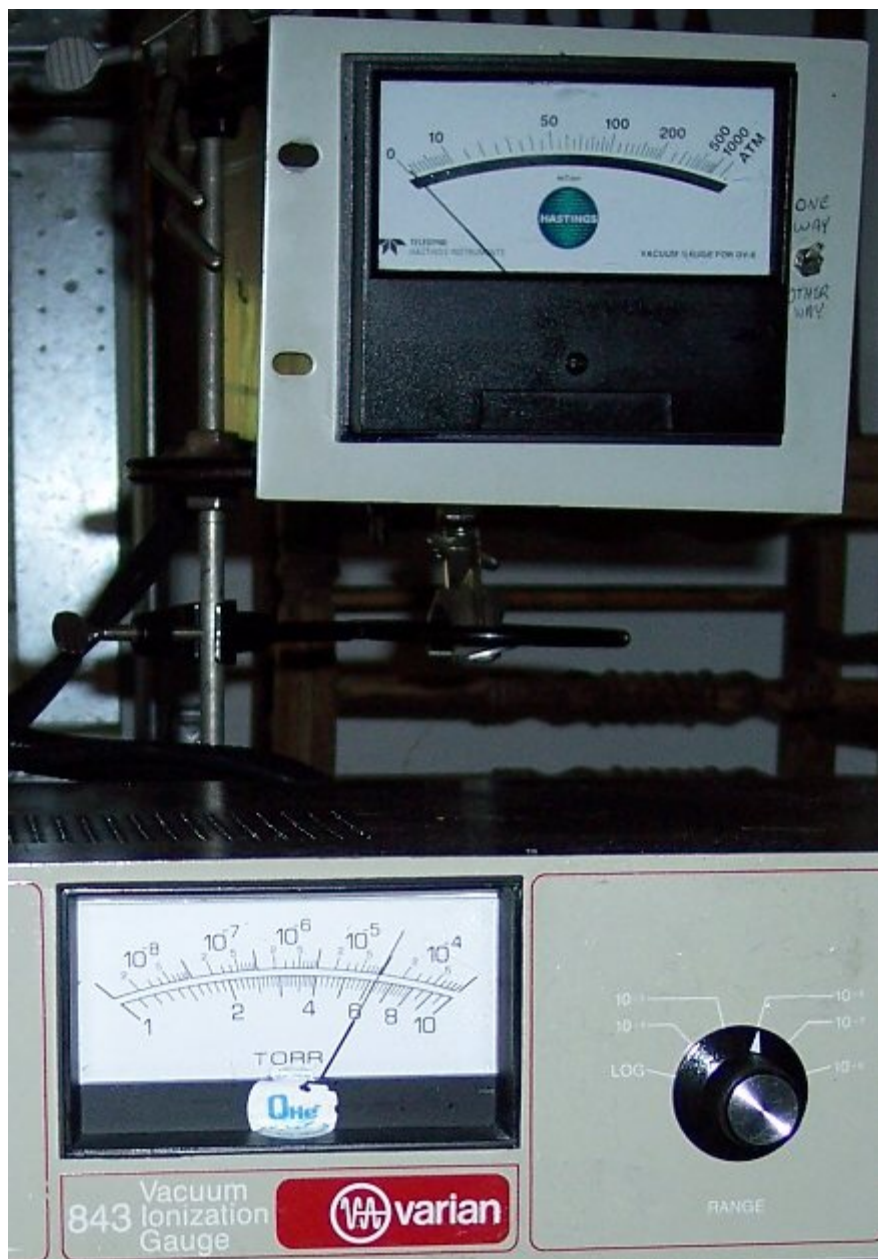
Ferrite Gate Drive
Transformer

High Speed
Avalanche Trans.
Gate Drive

Trig IN

Avalanche Trans. PWR

Photo 5 ION & TC Pressure Gauges

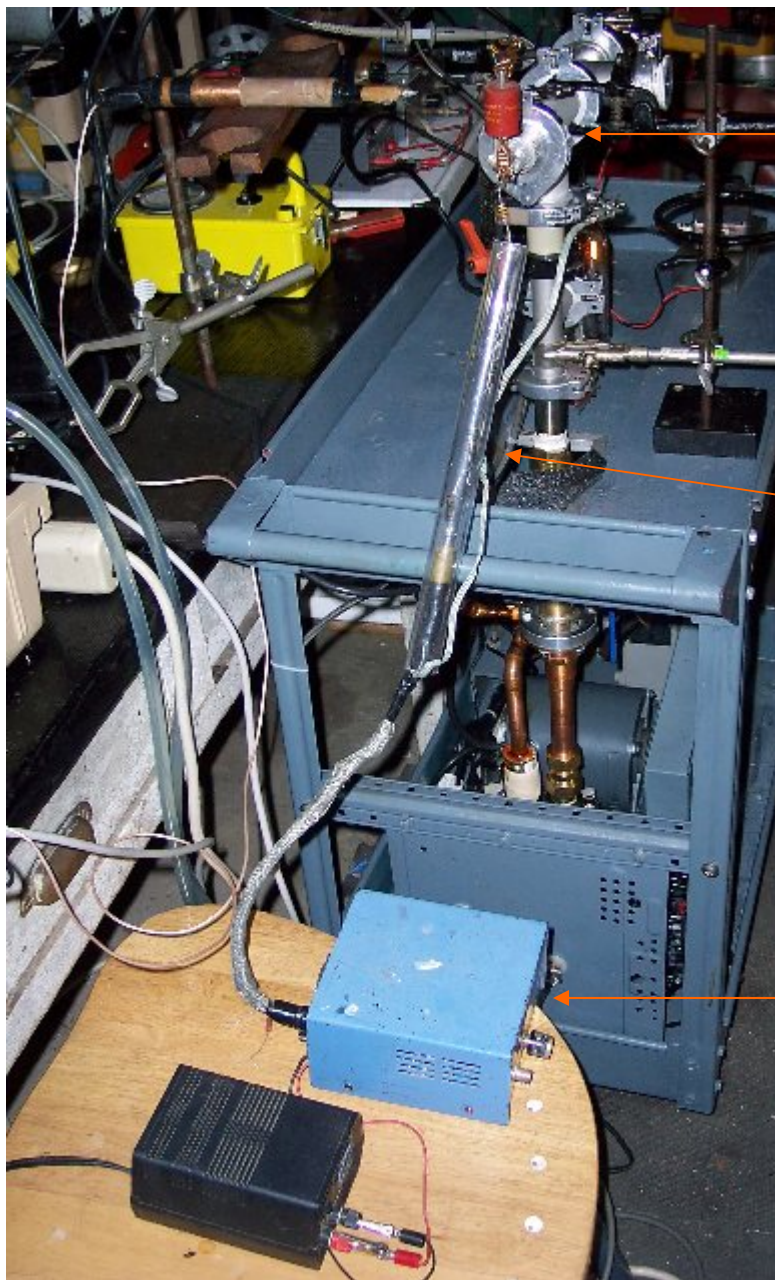


TC Gauge
Controller

ION Gauge
Controller

Operating Pressure $\sim 6E-6$ Torr

Photo 6 Anode End of Setup



Anode Hookup

Current Limit
Charging Resistors
~ 60Meg

Anode HV PS
~ 3 to 18 KV

12 VDC PWR

Photo 7 Close up of Anode Hookup for Current Viewing

DSO

Tek X10



Charging Resistors

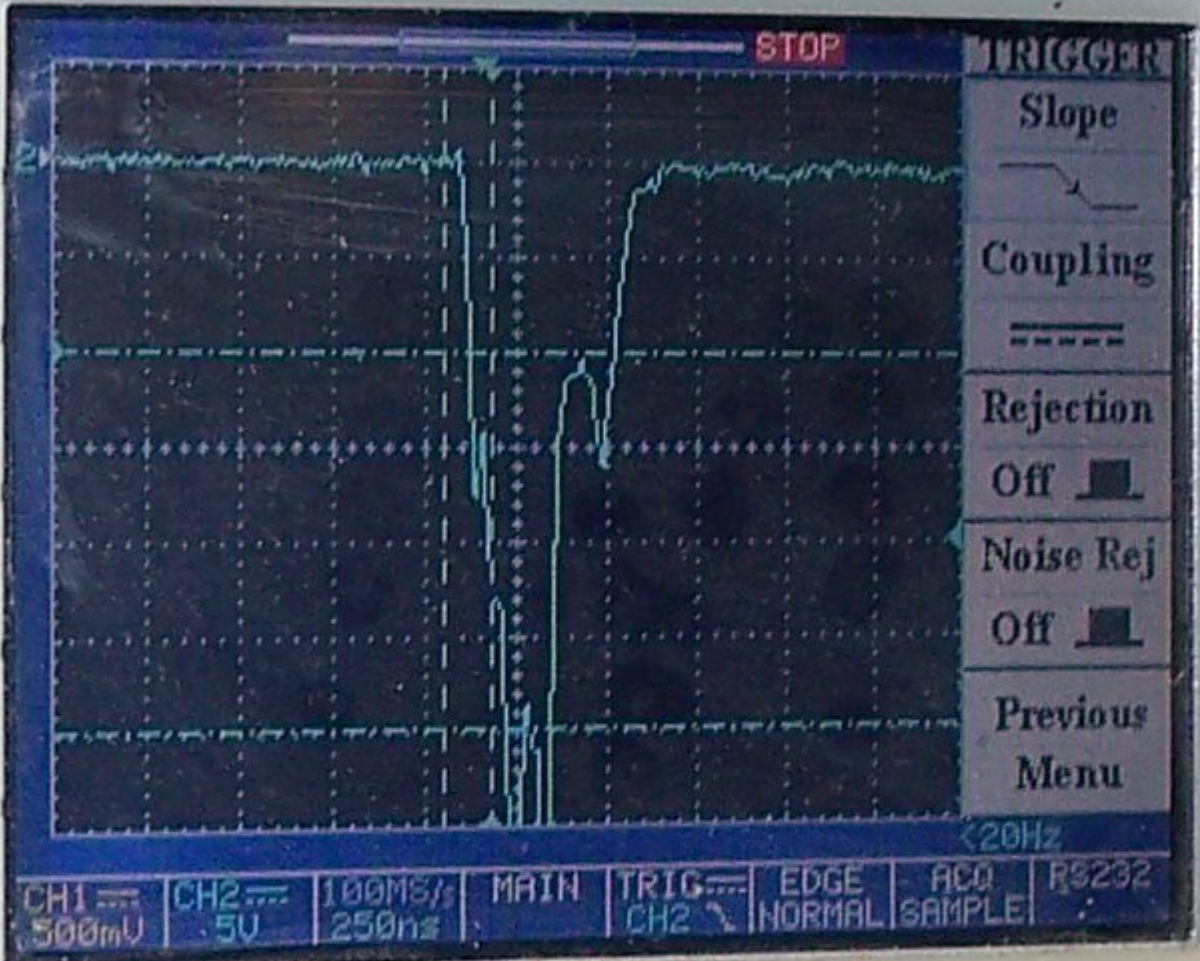
Anode Energy Storage
CERA-MITE 500pF 30KV

10 ohm Current Viewing

Charged to 18KV

Photo 8 Voltage X10 Across Current Viewing

$\sim 300 \text{ Volts} / 10 \text{ ohm} = \sim 30 \text{ AMPS peak}$



CH1	CH2	100MS/s	MAIN	TRIG	EDGE	ACQ	R3232
500mV	5V	250ns		CH2	NORMAL	SAMPLE	

TENMA

DIGITAL STORAGE
OSCILLOSCOPE

72-7240

250MHz
ET25GS/s

Photo 9 SW Anode Voltage X 1000 @ 18KV

X1000 HV Probe

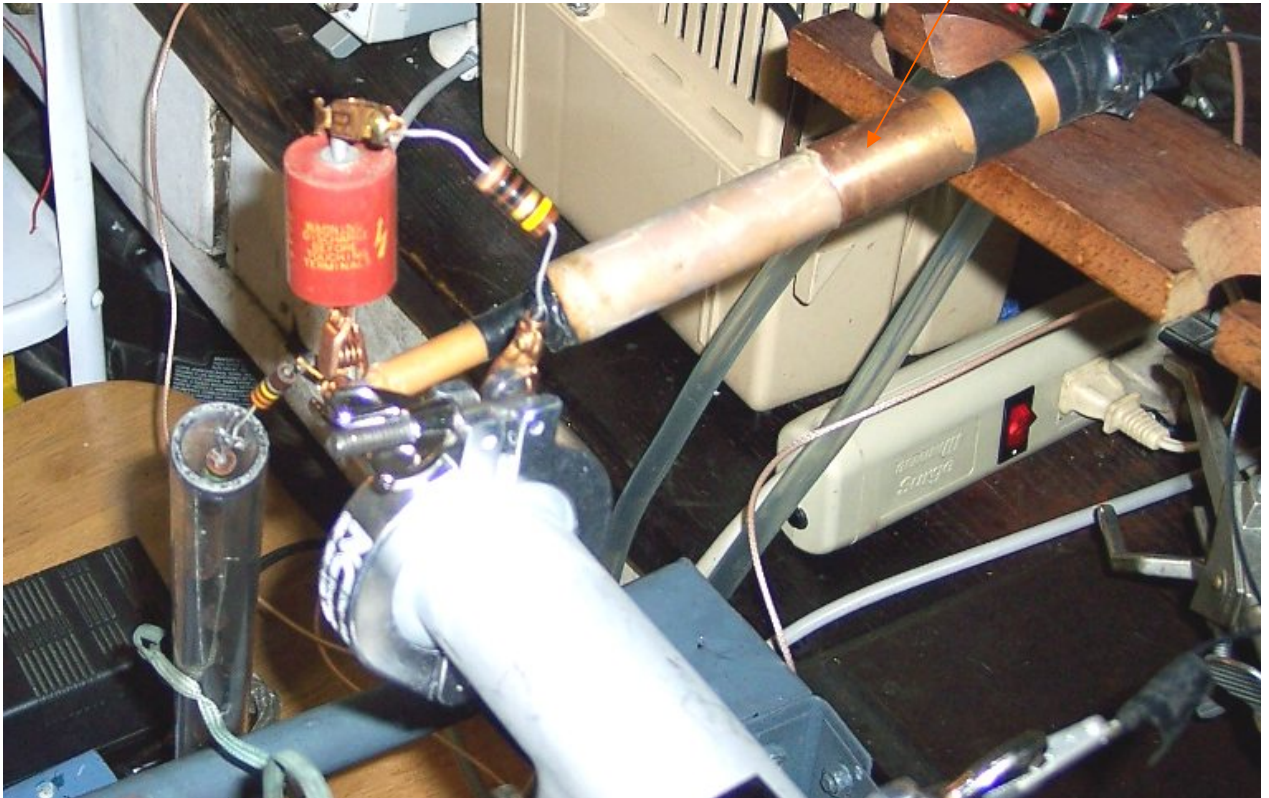


Photo 10 DSO Waveform / Anode to GND



5 V/DIV X 1000

Photo 11 Voltage Across Cathode

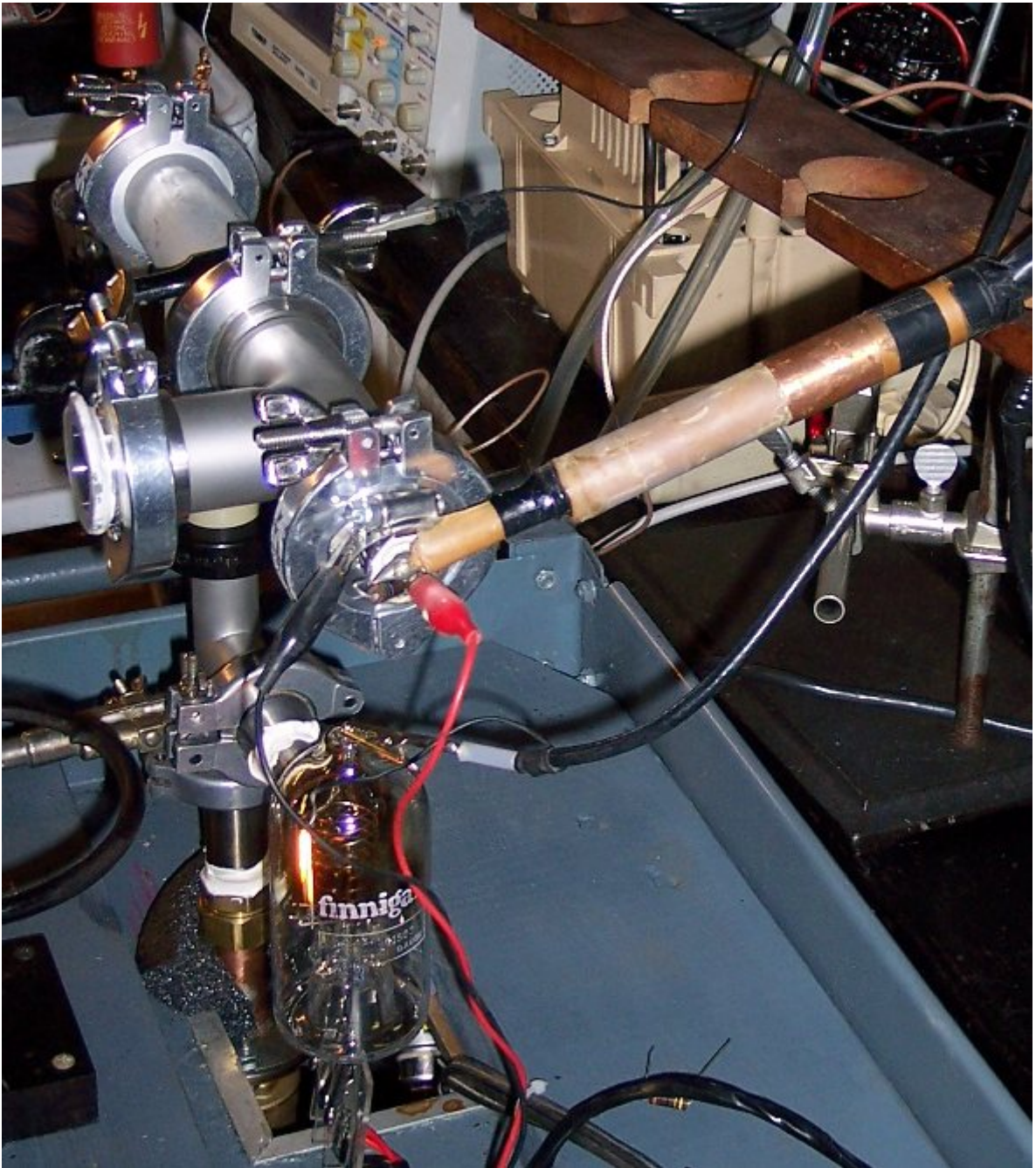


Photo 12 DSO Cathode Pulsed Voltage

