



## Sandia Labs – On the Leading Edge of DE Research

Sandia is a multidisciplinary national laboratory and federally funded research and development center (FFRDC) for the National Nuclear Security Administration. Sandia accomplishes tasks integral to the mission and operations of our sponsoring agencies by

- Anticipating and resolving emerging national security challenges
- Innovating & discovering new technologies to strengthen the nation's technological superiority
- Creating value through products and services that solve important national security challenges
- Supporting "Strategic Partnership Projects" via contracts and cooperative research agreements

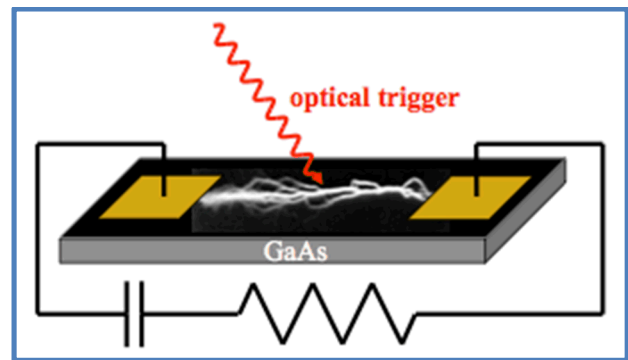
Sandia National Laboratories is a world leader in pulsed power science and technology. Sandia has decades of experience in DE research for National Security applications, with expertise in Compact Pulsed Power System Design, High Power Electromagnetics, DE Effects Testing, Semiconductor RF/Optoelectronic and Microelectronic Circuit Design, Modeling & Simulation, Laser Applications, Materials Development and Characterization, Microsystems & Engineering Sciences Applications, and Sensor & Systems Exploitation.

### Important Accomplishments in 2016

#### High-Voltage, High-Current Density GaAs

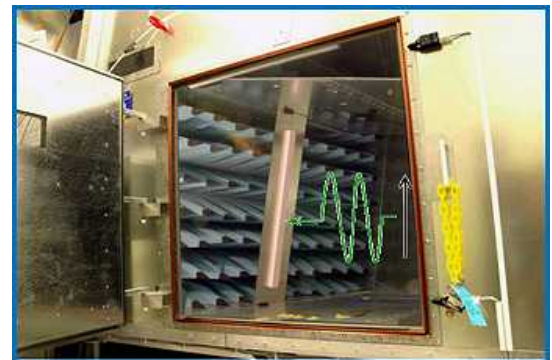
##### Photoconductive Switches

- *High-gain mode enables switching of large (kA) currents with small diode lasers.*
- *Important technology for pulsed power for compact mobile platforms.*
- *Development also applicable to large pulsed power accelerators and power generation.*



#### Predictive Tools for RF Effects and URE

- *Demonstrated ability to model and predict the RF Effects (RFE) on electronics and the Unintended Radiated Emissions (URE) from electronics.*
- *Validation measurements matched predictions over broad frequency range (GHz).*
- *Results actually led to discovery / characterization of limitations on using GTEMs for certain testing.*



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