Empty energy storage pulse power generation

This chapter presents the most common methods of generating high-voltage (nanosecond) pulses for discharge generation. Some are simple in concept and straightforward to ...

Nanosecond pulsed electric fields can induce intracellular effects and cause in situ immune apoptosis of cells, and have great potential in treating highly malignant tumors and preventing...

A 4.5-MJ capacitor-based pulsed power supply (PPS) has been installed at the U.S. Army Research Laboratory (ARL), Aberdeen Proving Ground, MD, for railgun operations.

First, the primary energy storage technology (capacitor energy, mechanical energy, chemical energy, superconducting energy, etc.) is used to generate the required primary pulse waveform ...

Pulse forming line (PFL) is one of the effective ways to generate nanosecond pulse. The electrical parameters and geometric dimensions of the dielectric in the PFL are fixed, which causes its output ...

OverviewImplementationTransmission-line PFNsUses of PFNsExternal linksA pulse-forming network (PFN) is an electric circuit that accumulates electrical energy over a comparatively long time, and then releases the stored energy in the form of a relatively square pulse of comparatively brief duration for various pulsed power applications. In a PFN, energy storage components such as capacitors, inductors or transmission lines are charged by means of a high-voltage power source, then rapidl...

A compact inductive energy storage (IES) pulsed-power generator that is driven by a novel 13 kV silicon carbide (SiC)-MOSFET is developed and molded into a compact modified TO-268. In ...

This integrated PPS comes with a complete system configuration, a miniature compact structure, a high rate of repetition, and high power, with energy storage density exceeding 1.2 MJ/m3.

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A pulse-forming network (PFN) is an electric circuit that accumulates electrical energy over a comparatively long time, and then releases the stored energy in the form of a relatively square pulse ...

In this paper, we propose an EM pulse generation circuit that employs the internal inverter without any occurrences of shoot-through current paths. As a result, the low power ...

The inductive energy storage pulsed power generator using GaN FETs as opening switches has developed, and the output obtains a maximum voltage of ~900 V with rise/fall time of ...

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