Contribution ID: **155** Type: **Oral Presentation**

A Novel Drive Circuit for Solid-state Rectangular Pulse Generators

Tuesday 5 June 2018 11:30 (15 minutes)

Rectangular high-voltage narrow pulses are preferred in most Dielectric barrier discharge (DBD) loads and corona discharges in water. Usually at least two groups of switches are required to generate rectangular pulses over capacitive loads. One group discharges the energy-storage capacitors to the load and the other group discharges the energy stored in the stray capacitor of the capacitive load so as to chop off the slow tailing of pulses. Therefore, two independent drive circuits are required for these pulse generators. In this paper, a novel drive circuit combined with time-delay circuits, which can drive many different groups of switches with only one drive circuit, is proposed. Using magnetic transformers with common primary winding, many synchronized driving signals can be generated. With some special time-delay circuits, these synchronized driving signals are modulated into many groups of different driving signals. Experiments prove that rectangular and stepped pulses can be generated using this single drive circuit.

Authors: RAO, Junfeng (university of shanghai for science and technology); Mr LIU, Haotian (University of Shanghai for Science and Technology); Dr JIANG, Song (University of Shanghai for Science and Technology); Prof. LI, Zi (University of Shanghai for Science and Technology)

Presenter: RAO, Junfeng (university of shanghai for science and technology)

Session Classification: Oral 5 - Solid State Modulators and HV Design

Track Classification: Solid State Power Modulators, Components, Switches, and Systems