

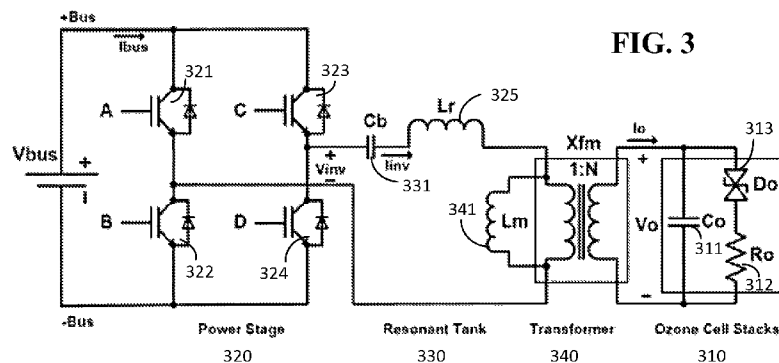
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(54) Title: A VERSATILE ZERO-VOLTAGE SWITCH RESONANT INVERTER FOR INDUSTRIAL DIELECTRIC BARRIER
DISCHARGE GENERATOR APPLICATIONS

(57) Abstract: A power system for a dielectric barrier discharge system, such as used for generating ozone, can include a full bridge inverter stage and parallel resonant tank outputting a signal for powering a dielectric barrier discharge cell stack. The inverter stage is controlled using a combination of pulse width modulation (PWM) and frequency modulation (FM) to enable soft switching through all load conditions - from full load to light load. A current control loop error amplifier compensator can provide a duty cycle adjustment signal to a phase shift PWM controller chip that generates the switching signals for the inverter stage. A feedback signal is also used to adjust a clock frequency time constant of the PWM controller chip to provide the FM. In one embodiment, the feedback signal is an output of an inverting amplifier connected at an output of the current control loop error amplifier compensator.