



Contribution ID: 210

Type: **Poster Presentation**

Research on 10kV cascade pulse power supply for discharge applications

Thursday 7 July 2016 13:50 (20 minutes)

The cascade type high voltage pulse power supply with the magnetic isolation is used to solve the problem of floating power supply of each cascade unit. Its structure is compact and the trigger mode is simple and reliable. Using the trigger mode of magnetic coupling isolation can increase the tail branch in each concatenation unit simply and conveniently, reduce the falling edge of output high voltage pulse greatly, and improve the adaptability of cascade type pulse power. In this paper, the 10kV cascade pulse power supply is developed. Its rated working voltage of each cascade unit is 1kV, a total of 10 groups. The voltage regulation range is 0~10kV; the operating frequency is 1~10 kHz; the pulse current is 0~20A; the pulse width is 5~30us. The cascade power supply was well used in the application of microsecond-pulse discharge.

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Session Classification: Poster 2-A

Track Classification: Power Electronics, Power Supplies, Prime Power, Rotating Machines, and Energy Converters