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The evolution of the plasma in triggered vacuum switch

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A triggered vacuum switch (TVS) was designed with a flat electrode at the beginning and developed to a multi-gap electrode which reduces heavy electrode erosion. Recently the demands of the TVS is increased, as the high power system is extended in the various fields. It invokes the improvement of the performance for a TVS, therefore, a fast camera experiment is suggested to research the fundamental discharge processes of the TVS. This research is a base of understanding the characteristics of the TVS. The fast camera is capable of 2ns exposure time. It measures for three discharging phases from trigger breakdown to main discharge. The camera images show the characteristics of trigger discharge, the diffusion of the plasma, characteristics of main discharge, and delay.

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