

**Breakdown characteristics of a rod plane gap with dual spaced secondary gap system**

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The behaviour of a complex spark gap containing a set of floating electrodes has been studied. The high-voltage electrode, the earthed electrode and the floating electrodes formed the electrode system. In these experiments, the floating electrodes were located at a distance of a few millimeters from the earthed rod electrode and this was referred to as the secondary gaps. Under the application of an impulse waveform of  $1.2 \mu\text{s}/50 \mu\text{s}$ , the 50% breakdown voltage and the time to breakdown were studied as a function of both gap distances from the complex gap containing the floating electrode. Corrections for atmospheric conditions were done according to IEC standards. The present results of this experiment on floating electrodes have revealed of a minimum 50% breakdown voltage and a maximum time to breakdown corresponds to pints located in the secondary gaps of 0.5 mm and 1.0 mm respectively. This also showed a low standard deviation for both time to breakdown and 50% breakdown voltage. Our results include that a complex floating electrode system can be used to trigger the streamer initiation of a high voltage environment in a controlled manner.