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The Analysis of Time to Breakdown in Various Gas Insulation Systems

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In this study, time to breakdown and breakdown voltage for GIS (Gas Insulation Systems) are performed. The assessment of the insulation parameters such as breakdown voltage and time-to-breakdown is always done by rapid and endurance testing. At non-uniform electrode system, pressure and gas rates like SF₆, N₂, CO₂ are used as various parameters. It is shown how the time-to-breakdown is influenced by the applied field, the pressure and gas rates. An optimization method is developed according to experimental results. Also in order to assess the results, the Weibull distribution is employed, which, due to its inherent properties is widely used to evaluate breakdown data.

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