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## Finite Element Method Used to Calculate Magnetic Fields

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**Abstract:** The increasing demand for electricity in different cities made it necessary to extend the existing high voltage network right up to the customer. The solid insulating material require in Gas Insulated systems (GIS) is to separate two compartments as well as to provide mechanical support for conductors. A maximum percentage of failures are due to improper design of the spacers shape hence there is a need to reduce internal field discharges. The triple junction point formed by interface of solid insulating spacer and SF6 gas. The breakdown ofSF6 gas insulation is adversely affected by the Presence of spacer especially at triple junction point, which is the weakest point at the GIS. Hence there is a need of controlling electric stresses at spacer surface. In order to reduce such stresses at the spacers used in the gas insulated systems the design of spacer is to be changed. For the study of the factors affecting the electric field distribution on the spacer's surface the finite element method (FEM) is used. The Finite Element Method is more accurate than other methods.

Keywords: Spacer's shapes, Composite cone spacer, Triple junction point, Finite Element Method

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