

## **Effect of different edge radius of electrode on electric field distribution using finite element method (FEM)**

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### **ABSTRACT**

In the last two decade, a significant effort has been made to understand better the internal charge distribution inside dielectric materials. This has resulted in the development of several methods which gives details about charge distribution inside a dielectric material. In this study, effect of electric field with different edge electrode on dielectric material was being observed and analyzed using Finite Element Method (FEM). Base on the results, we can see that electric field is higher at dielectric insulating materials when the radius( $r$ ) approaches 0mm due to the sharp edge of the electrode. As the radius of the electrode edge increases, the electric field decreases. It proves that the edge of electrode has an effect to the electric field in a dielectric material. Electric field also decreases as the gap between electrodes increases. In this study, the field computations were carried out using COMSOL Multiphysics 5.2 which based on finite element method.

### **KEYWORDS**

FEM, Electric field, Electrode, Dielectric material

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