

**SOLVING TWO DIMENSIONAL ELECTROSTATIC FIELD
PROBLEMS BY USING FINITE ELEMENT METHOD**

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DECLARATION BY CANDIDATE

We certify that this report and the project to which it refers the product of our own work and that any idea or quotation from the work of other people , published or otherwise are fully acknowledge in accordance with the standard referring practices of the discipline.



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ABSTRACT

In this paper, finite element method is applied in finding the electrostatic potential and the electric flux of an electric field by using Poisson equation in the region of irregular boundaries with distributed charges. The finite element method is easier to be implemented on a digital computer system and it is flexible to select any desired degree of approximation without having to reformulate the problem. The results of electrostatic potential value in each node and the electric flux of the irregular boundaries discretization will be computed by using the BlueJ software and Microsoft Excel 2013. The approximation solutions obtained were compared with the exact solutions. The error for electric flux density in each node of the irregular boundaries is calculated iteratively by until we reach 1.0 stopping criterion.

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