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## EVALUATION DURABILITY OF POLYMERIC INSULATING MATERIAL OF ELECTRIC CABLES

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Dependability and safety of electric cables depend on polymeric materials of insulation. Polymeric insulation provides protection of cable core from harmful effect of expositive factor that lead to aging of material [1]. Therefore, problem of evaluation durability of polymeric insulating materials is mounting question.

Result of analysis shows us that existing methods for evaluating durability does not takes into account many expositive factors and does not provide accuracy and reliability of evaluation [1, 2]. One of the promise approaches for solving this problem is using artifice intelligent methods such as genetic algorithms and fuzzy logic. Solving of this problem consist of two steps (figure 1).



Figure 1 – Steps of evaluation durability of polymeric insulating material

The first one is identification mainly exposure factors influence on polymeric insulating materials and degree of they intensity by using of genetic algorithms.

Second step is evaluation durability of polymeric insulating materials by using of fuzzy logic. It includes procedure of fuzzyfication, fuzzy implication and composition, defuzzyfication. Fuzzyfication means transforming the continuous values variables into linguistic variables. Fuzzy implication means identification of antecedences membership for each rule of evaluation durability. Fuzzy composition means defining of classical relation into one that allows partial membership and describes a relationship that holds between objects. Defuzzyfication means transforming the linguistic variables into quantifiable result.

So we can be concluded that complex using of genetic algorithms and fuzzy logic provide accuracy and reliability of evaluation durability of polymeric insulating material.

### References

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