Proceedings of the International Conference on Recent Advances in Electrical Systems,

Volume 1, Issue 1, 2016, Pages 187-192

# On-Line Monitoring and Classification of Stator windings Faults inInduction Machine Using Fuzzy Logic and ANFIS Approach

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**Abstract:** the induction machines drives becomes moreand more important used in many industrial applications.Their attractiveness is largely due to their simplicity,ruggedness and low cost manufacture, easy maint00enance,high power efficiency and high reliability, are susceptible tovarious types of electrical and/or mechanical faults that canlead to unexpected motor failure and consequently impulsivedowntime. This made necessary the monitoring functioncondition of these machines types for improved anexploitation of the industrial processes. The aim of this taskis the proposal of a monitoring strategy based on the fuzzylogic inference system (FIS) and the neuro-fuzzy inferencesystem (ANFIS) for monitoring and classification ofelectrical faults types, especially the open phase and interturnsshort-circuit in the stator windings. The principleadopted for the strategy suggested is based on monitoring ofthe average root mean square value of stator current (RMS).Mathematical models and simulations results are presentedto validate the efficiency of this approach.

**Keywords :** Monitoring, classification, Fis, INFIS, RMS