Developing Fuzzy Logic Model for Reliability Estimation: Case Study

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Abstract : The research aim of this paper is to evaluate the reliability of a complex engineering system and to design a fuzzy model for the reliability estimation. The designed model has been applied on Vegetable Oil Purification System (neutralization system) to help the specialist user based on the concept of FMEA (Failure Mode and Effect Analysis) to estimate the reliability of the repairable system at the vegetable oil industry. The fuzzy model has been used to predict the system reliability for a future time period, depending on a historical database for the two past years. The model can help to specify the system malfunctions and to predict its reliability during a future period in more accurate and reasonable results compared with the results obtained by the traditional method of reliability estimation.