

Application of Fuzzy FMEA with Fuzzy ANP in the development of new product
decision-making-solar cell module industry as an example

陳文欽, Shih-Chieh Chiu, Carole Chang

Industrial Engineering and System Management

Management

wenchin@chu.edu.tw

Abstract

In the highly competitive society, enterprises have to be constantly looking for those investments favorable to themselves to maintain survival and the core competency, such as internationalization, automation, new product developing and upgrading equipment; especially the most difficult one is new product developing. Therefore, this research integrates the crucial key factors and the criteria of its dimension of new products developing through document probing and interviews with experts. Then, the ISM model is used to confirm the relationships between dimensions vs. dimensions as well as criteria vs. criteria. Through the FFMEA (Failure Model and Effect Analysis) and FANP (Fuzzy Analysis of Network Process), we can obtain the score and weight of crucial criteria. By multiplying those two factors, the risk levels will be presented. Therefore, the policy makers can take advantage of these figures and references when making decisions. Thus, the policy makers can have some important references to rely on when making decisions.

Keyword : Fuzzy Theory; FMEA; ISM; FANP